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The Right Gear

# Format War? DVD-Audio vs. Super Audio CD

Speakers Denon THX-Certified DVD Player

Monsoon Multimedia Speakers

AOL KEYWORD: STEREO

01

Mission

**Home Theater** 

NAD Dolby Digital Receiver



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SONY



#### The Extraordinary Technology Inside Definitive's New BP3000TL

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1" thick rear medite baffle

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17 cm mineral-filled polymer high-definition cast-basket bass/midrange drivers

Rear mirror-imaged D'Appolito bipolar arrey in non-resonant chamber

18" cast-basket high-power long-throw bi-laminate polymer subwoofer driver

Complete built-in powered subwoofer system \_\_\_\_\_

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Gold-plated tri-wirable speaker level inputs

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Computer-Synthesized Transmission-Line Slot Loading Low frequency tuned column

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Complex Linkwitz-Riley

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Accelerometer optimized / cabinet braces

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Sonopure™ fiber internal dampening

Electronic crossover

Digital Synchronization System

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-Home Theater Magazine

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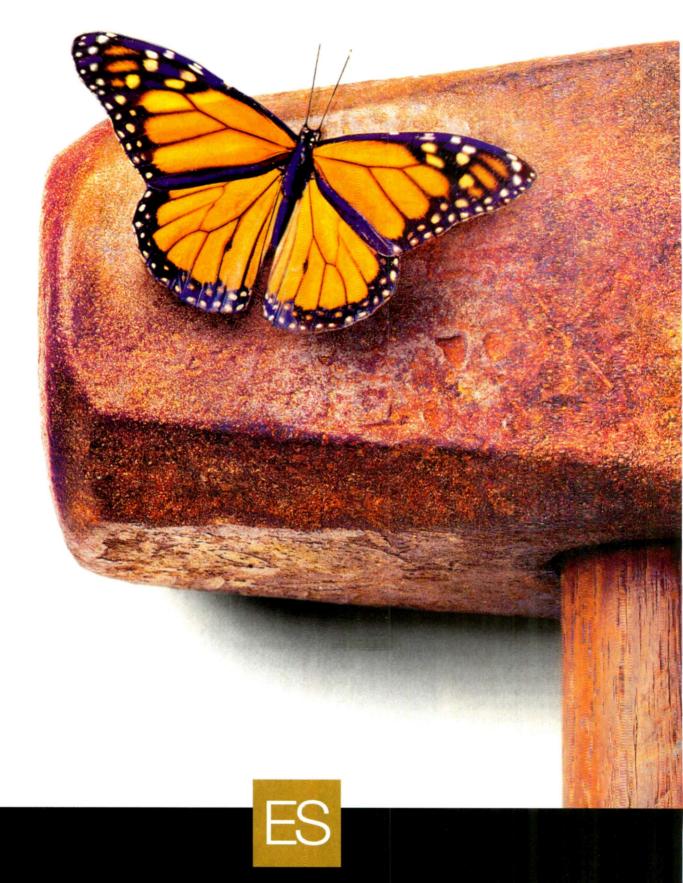
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#### **JANUARY 1999**



ON THE COVER

The Sony CDP-CX260 and other mega-capacity CD changers can bring that old-time jukebox right into your living room. See page 64 for a comparison report on five CD jukeboxes. Seeburg 222 jukebox supplied by John T. Johnston's Jukebox Classics, 718-833-8455.

> Photograph by Ralph Masullo



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# **Stereo Review**

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BY GORDON



#### **Jukebox Heaven**

Five feature-filled, high-capacity

CD changers show that the jukebox has come a long way BY DANIEL KUMIN



#### **Dealer's Choice**

UP Three experts plot three courses for a \$2,500 home theater shopping spree BY REBECCA DAY



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Model 88 table radio



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BOB ANKOSKO

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# **To Our Readers**

Long-time readers will remember that this magazine wasn't always known as *Stereo Review*. We started way back in 1958 as *HiFi & Music Review*, at a time when hobbyists were pondering the move from the familiar single-speaker mono playback system to a curious new "stereo" setup with two speakers. It was also a time when the Seeburg 222 shown on this month's cover (and on page 64) was making history as the first stereo jukebox to hit dance clubs (note the "Channel 1" and "Channel 2" emblems above each speaker — I want one!). To reflect our growing two-channel orientation, the magazine's name was changed to *HiFi/Stereo Review* in 1960. By 1968, stereo had gone mainstream, and *HiFi/Stereo Review* became known simply as *Stereo Review*.

The name *Stereo Review* has served us well for more than three decades. And during that time we've experienced an extraordinary revolution in the way we listen to music and watch movies at home. Now it's time for another change — some would argue a change that is long overdue. Next month, in place of the magazine you're holding in your hands, you'll receive — or find at your favorite newsstand — an exciting new magazine called *Stereo Review's Sound & Vision*.

A merger of *Stereo Review* and our fine sister publication *Video*, the new magazine will offer the same equipment coverage you've come to expect from us — plus a whole lot more. For example, in addition to regular home theater coverage, which has been a *Stereo Review* staple for years, we'll also offer practical advice, informed opinions, and product reviews in the key home-entertainment categories of TV, video, and multimedia/convergence. And to make room for all that, *Stereo Review's Sound & Vision* will be bigger than a typical issue of *Stereo Review*, with at least 40 more pages.

Now, a few formalities: *Stereo Review's Sound & Vision* will be published ten times a year, beginning with the February/March 1999 issue. If you have a paid subscription to *Stereo Review*, you will automatically receive a copy of the first issue in mid-January. You will also receive one issue of the new magazine for every issue of *Stereo Review* left in your subscription.

Let us raise our glasses high in bidding a fond farewell to the familiar *Stereo Review*. We look forward to serving you in the future with *Stereo Review's Sound* & *Vision* — a magazine that we can honestly say will be unique in its ability to cover and interpret today's ever-changing world of home entertainment. See you next month!

Bet line

Bob Ankosko, Editor in Chief

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sound.

Not since the dawn of talkies has sound done so much for the movies.

When you watch movies at home, every whisper or scream should pull your mind into the action. Every word should be spoken to you. Every note of music should ring clear. Every shrieking crash, every shatter of breaking glass should make you jump. And even though you're not sitting in the best seat in the theater, we think you should hear the movie as if you were.





Home Theater Receiver with Digital Sound Processer - Dolby Digital (A03/D75" Decoder) - Stereo Mode 100%/ch (20 Hz-20Hz, 6 Ohns, 0.0% THD) - Enne Theater Mode 100%/ch (11 Hz, 6 Ohns, 0.% THD) - Enne Theater Mode 100%/ch (11 Hz, 6 Ohns, 0.% THD) - Enne Theater Mode 100%/ch (20 Hz-20Hz, 6 Ohns, 0.0% THD) - Enne Theater Mode 100%/ch (20 Hz-20Hz, 0.0% THD) - Enne Theater Mode 100%/ch (20 Hz-20Hz, 0.0% THD) - Enne Theater Mode 100%/ch (20 Hz-20Hz, 0.0% THD) - Enne Theater Mode 100%/ch (20 Hz-20Hz, 0.0% THD) - En

# RANDOM**play**

#### EDITED BY BRIAN FENTON

#### DTV Growing Pains

No one expected the launch of digital TV (DTV) to be totally glitch-free, but imagine our surprise when we pulled our first 64-inch DTV set out of its crate, hooked it up to our rooftop antenna, and got no picture. After all, we were only five blocks from the CBS transmitting antenna! Apparently the signal was *too strong*, and a severe case of multipath made latching onto it a tricky affair. We were able to get a superb picture, but only after trying numerous antennas and positions. The question we're left with is, which is better, a picture with ghosts, or no picture at all? Stay tuned.

#### **A/V Digest**

• The cable-TV and consumer electronics industries have agreed on the IEEE-1394 (Firewire) interface standard, an essential element in making DTV receivers compatible with

# Who's the Boss?

In 1962, conductor Leonard Bernstein and pianist Glenn Gould embodied classical music. Young, intelligent, and passionate about their art, they also had a flair for the media that let them communicate that passion to the public — and the public was willing to listen.

So it didn't take long for word to get around when, just before a New York Philharmonic performance of the Brahms Piano Concerto No. 1 on April 6, 1962, Bernstein told the concert and radio audience that Gould's interpretation was so radical that even he couldn't sign off on it. Wondering aloud, "in a concerto, who is the boss: the soloist or the conductor?," Bern-



stein said he had "to take seriously anything [Gould] conceives in good faith, and his conception is interesting enough so that I feel that you should hear it too." He did, however, feel the need for "this small disclaimer."

Many felt that Bernstein had betrayed Gould; others sided with Bernstein, saying Gould had taken a hammer to the old chestnut. Asked to comment, Gould, in his typically wry way, said it was all okay by him.

Sony Classical's recent CD release of this legendary concert lets you experience the audience's consternation and giddy anticipation as Bernstein concludes his remarks and the performance begins. It also makes you realize just how marginal classical music has become. — *Michael Gaughn* 

# **Too Good for Hollywood**

We had been looking forward to seeing Toshiba's SD7108 DVD player ever since it was announced last summer. Its Color-Stream Pro progressive-scan, component-video output (equivalent to a 480p digital TV signal) promised to deliver the best possible picture quality from DVDs. It was apparently too much of a good thing, and Hollywood got nervous. Toshiba has now announced that the player is being postponed indefinitely. Its statement cited a "lack of consensus within the Copy Protection Technical Working Group" regarding copy protection for progressive-scan video outputs on a DVD player. But it also noted that the company believes that such high-resolution outputs "are of critical importance in extending the potential of DVD in a digital world." — B.F.



digital cable boxes. No firstgeneration DTV sets are cablecompatible.

· While many cable companies have expressed lukewarm support for DTV (if any), Cablevision Systems, one of the largest, says it will produce and distribute HDTV sports programming. Cablevision, which has a controlling interest in Madison Square Garden, the New York Knicks and Rangers. and the MSG network, will start with home games of those teams, followed by the Yankees, Mets, Islanders and New Jersev Devils and Nets. It will likely distribute the programming to the New York-based electronics chain Nobody Beats the Wiz, which it also owns, to boost sales of digital TVs.

#### Long Live VHS!

Think the emergence of DVD means the end of VHS videotape? Not according to the International Recording Media Association (IRMA), which says that "VHS's future as the leading entertainment delivery format is safe." It predicted, however, that 1998 will turn out to be the all-time best year for VHS, with 995 million prerecorded tapes sold in North America. It looks like we'll never pass a billion. The format is forecast to begin its slow but inevitable decline in 1999, with sales dropping to "only" 985 million tapes.

#### 6.1-Channel Surround

So you think that 5.1-channel audio is here to stay? Just wait. This summer's release of Star Wars: Episode 1 will be released in a 6.1-channel format known as Dolby Digital-Surround EX. The theatrical format, co-developed by Dolby Labs and THX, will also be used in the DreamWorks movie The Haunting of Hill House and in Sony's Memoirs of a Geisha. It adds a center rear surround channel to the mix. which is said to allow filmmakers to place sounds more accurately. What does this mean for home theater? Don't worry: Surround EX encoding is fully

compatible with 5.1-channel Dolby Digital. And if you want to add the extra speaker, you'll probably be able to extract a signal for it from the existing left and right surround channels.

#### Music for Seduction

"If music be the food of love, play on," wrote Shakespeare in *Twelfth Night*. Since he failed to specify the kind of music that might put the object of your affection in the mood for fooling around, we asked three of our contributors for suggestions.

Rebecca Day says, "The most

seductive piece of music I've ever heard is a jazz instrumental by Maceo Parker called 'Children's World.' If it has to be ruled out because of that unfortunate title, I'll settle for 'Moondance' by Van Morrison.''

Alanna Nash chooses the Rolling Stones' "Miss You" because "it has a jungle beat that quickly raises the blood pressure, and the primal screams at the top of Mick Jagger's range just make your knees want to bend." Reminding us that Marvin Gaye was known as the Sexual Healer, Phyl Garland recommends his *Let's Get It On*  as the most sensuous album ever made. "My favorite track," she says, "is 'You Sure Love to Ball' — bedroom music of the first order." — William Livingstone

#### Sing Out, Bert

As we reported in December, the Sheraton Atlantic City Convention Center had installed a statue of Bert Parks, long-time MC of the Miss America Pageant, that played a recording of Parks singing the pageant's coronation theme, *There She Is.* A royalty dispute silenced the statue for a while, but that's been resolved, and it sings again. — W.L.

# Who's Dreaming of a Divx Christmas?

Is the 1998 holiday shopping season make or break for Divx? Circuit City says no, but a lot of informed observers say yes. The company has been tightlipped on sales figures — understandable enough given the withering media coverage — but some m xed signals have leaked out nonetheless.

As of mid-November, RCA wasn't delivering enough of its Divx players to stores, and the debut of models from Panasonic and ProScan, consicered crucial to making Divx a holiday success, had been pushed back to the tail-end of the season. And the biggest problem — software distribution — had yet to be resolved. Divx ism't likely to catch on until the discs are as readily available as the rentals at your local Blockbuster and Hollywood Video. Driving out to Circuit City or The Good Guys for new discs isn't going to cut it for a lot of people.

On the bright side for Divx, Future Shop, 6th Ave. Electronics, and Nationwide Computer joined the ranks of Divx retailers, and 300 titles were expected to be available by Christmas. Though still a long way from the thousands of "open" DVD titles available, the increased roster will come as welcome relief for Divx customers whc've had their fill of *Flubber*.

The bottom line is that Circuit City is devouring regional electronics stores with Godzillalike zeal, making so much money in the process that it could subsidize Divx from now until Doomsday. But if Divx pulls up lame for the holidays, you have to wonder how long Circuit will keep it on life support before it gets to be embarrassing. -M.G.

# Stax o' Trax

It's best to reissue your back catalog in modest installments, yes? "No!" say Billy Joel, Iron Maiden, and Hank Williams, Jr. (or at least their record companies), who have flooded stores with 15, 12, and 22 re-

masters, respectively. Which of these reissue programs does the best job?

Coming in a distant third is Curb's Williams series, from 1977's One Night Stands to 1987's Hank Live. Fuzzy artwork, no bonuses, no notes — no thanks, midline price or not. Coming in second are Columbia's Joel reissues, from 1971's Cold Spring Harbor to 1993's River of Dreams. Although these are midprice, too, each one (except Kohuept) is an enhanced CD with added video clips or live-concert segments, and the packaging includes original art, some extra photos, and lyrics. No bonus audio tracks,



however — and not a word anywhere that these are 24-bit remasters with multimedia content.

Columbia should take a tip from the clear winner here, Raw Power/Castle's Iron Maiden imports, from 1980's self-titled debut to 1993's *Live at Donington*. These enhanced CDs are clearly labeled as such, and they contain video clips, bios, photos, sound effects, family trees, and an "Eddie Gallery" of the band's mascot (line up the 12 discs on a shelf, and their spines form an image of the gruesome one). No matter what you think of the music, this is how a reissue series should be done. — Ken Richardson

#### **Music to Go**

Think of Music Press on Demand (Music POD) as a kind of take-out juke joint. Tokyo's V-sync company has designed and configured new interactive music terminals, and it's looking for record companies that are interested in establishing a distribution system based on them. Customers will be able to search



for available songs by title or artist. After making their selections, they'll put money into the machine, and the songs will be downloaded over an optical-fiber link and recorded on a blank MiniDisc, which will then pop out of the front of the machine.

It takes about 30 seconds for an average pop tune to download. The terminal can also download album-art and label information and print out a color card containing an assortment of labels with artwork and lyrics. A video monitor mounted on top of the POD shows music videos to attract customers. For those who have difficulty choosing titles, the terminal will allow listening to songs before purchase. Estimated price per song is between ¥300 to ¥500 (about \$2.60 to \$4.35). Customers can bring their own blank MiniDiscs or purchase one from the terminal for an extra \$2.60. With definite appeal to teenagers, the Music POD could become a regular fixture in video-game arcades in the near future. While the terminal is not yet on the market, V-sync estimates a price of about ¥2 million each (more than \$17,000). - Bryan Hærrell

#### Upgrade Madness

Let me see if I have a firm grasp of the situation. I needed to get a VCR so that I could enjoy the benefits of the home movie craze. I then needed to upgrade my old, but very serviceable, two-channel receiver to a Dolby Pro Logic model and acquire three more speakers so that I could enjoy the full theater experience in my living room. Okay. Then I had to upgrade my VCR to S-VHS to improve the picture quality. All right. Now I am being told that in order to truly enjoy movies at home I need a DVD player - what joy! And, of course, out goes Pro Logic and in comes Dolby Digital! While I'm at it, I need to replace my mix-andmatch speaker set with five balanced and timbre-matched units.

But the joy does not stop there — oh, no! — because, as it turns out, DVD players will soon be able to play audio discs just like my CD player, which I bought because it was supposed to be the pinnacle of audio reproduction. The new DVD-Audio machines, however, will have some problems playing the hundreds of CDs I currently own. Yes! And to make matters even more convenient for consumers, there will be competing formats! This is in addition to the new HDTV set I will need to get, which will not receive digital signals from my cable company!

Ladies and gentlemen, please stop the madness. Nicholas Solimini East Haven, CT

We hate to break the news to you, but the forthcoming DVD-Audio discs will almost certainly not play on current DVD-Video players — but, on the bright side, the new DVD-Audio players will play CDs. The DVD-Audio standard allows for so-called "universal" players that can handle both kinds of DVDs, but there's no telling when they will reach the market. For more about this madness, including the competing Super Audio CD format, see "Technology Update" on page 26.

To audio machine makers: Stop making two-channel stereo machines immediately. Take all of them from the market and dump them into the recycling bin behind your factory. Now start making five- or six-channel surround sound machines as soon as possible. This is the right thing for 21st century.

To consumers: Stop buying two-channel stereo machines regardless of how cheap they are. Start buying five- or six-channel surround sound machines with "built-in" Dolby Digital, DTS, or THX modes. This is the best thing for you. Koon Por West Linn, OR

Ummm . . . well, thanks for sharing!

10 STEREO REVIEW JANUARY 1999

#### **Positive Feedback**

I read with amazement the letters to the editor in November. In about 20 years of reading *Stereo Review*, I've never seen such intense criticism. These are controversial times, indeed! In several cases it seems that the letter writers didn't thoroughly read the articles they criticized!

I just want to go on record as someone who is very satisfied with your editorial content. I enjoy the creative shifts in approach and especially the strong opinions (not all of which I agree with). Keep up the good work and "Damn the Torpedoes"!

> Gary Card Nepean, Ontario

I would like to address Ken Pohlmann's "piss off" comment, which a subscriber criticized in November "Letters." I really enjoy Ken's articles because he tells it like I would. I'd rather you used down-to-earth language than be a bunch of stuffed shirts speaking only in tech jargon. Ted Fricke Green Bay, WI

#### **Multichannel Truth**

I've owned quite a few different audio systems, and I have auditioned numerous multichannel and high-end two-channel systems. I also attend as many live performances as possible.

I have never heard instruments or vocalists emerge from the rear of the hall in a live concert. In my opinion, multichannel recordings simply do not portray musical truth, by which I mean accurate imaging, soundstaging, and tonal balance. They are great at recreating the movie theater, but at the expense of the ultimate musical experience. Since music is what I prefer, I've chosen the two-channel audiophile approach. Multichannel is simply not my idea of musical accuracy. Larry Martucci Uniontown, OH

You're entitled to your opinion, but see "Tech Talk" (page 36) and "Systems" (page 82) for a different view of whether multichannel reproduction aids musical truth. And, by the way, there are more than a few pieces of classical music that do call for performers at the rear of the hall!

#### Divx Yea! Divx Nay!

Your magazine turned me on to Divx even though your reports were negative. I am now a proud owner of a Divx/DVD player, and I couldn't be happier about my decision. I can play both formats, and I can get new movie releases for just \$4.49 each. I can have Divx movies delivered right to my door for just \$1 more on the first disc and 50¢ for each additional disc. I bought the RCA model, and I've not run into any problems. The people at Divx were very helpful, and I was up and running within 30 minutes of getting it home. Greg Forchette Franklin, TN

I liked the ease of purchasing Divx movies, so I bought a Zenith player at Circuit City. Divx customer service was prompt, polite, and very helpful. In less than 20 minutes I was up and running. That first machine, however, would randomly "drop out" a second of sound when playing any disc. I returned it with no hassles, hooked a new machine into my system, and again loved it.

But Divx sent me a disc to update the player's software, and drop-outs started with the second player, too. Divx tech support said, "Jeez, we don't know what happened, but we can have the 'techies upstairs' get back with you in a day or two. If they don't call, be sure to call us in three days or so." The machine is going back to Circuit City, and I will purchase a DVD player and put up with returning the discs to Blockbuster as I have always done with tapes. Goodbye, Divx. Howard Thompson Kalamazoo, MI

The Laziness Factor

Finally I put my finger on what was missing from your discussion in August of the future of the CD: the "Homer Simpson" factor. What drives mass consumer decision-making is the innate laziness that lures us to simpler and easier products. LPs vanquished 78s because we didn't have to get off the couch as often. CDs trumped LPs with yet longer playing times and remote controllability so that we barely needed to leave the couch at all. Improved audio quality was the icing, not the cake, in those transitions.

Obviously something will replace CDs someday, but for now Homer is on his couch, his CD jukebox on shuffle-play, disco tunes blaring. When DVD-Audio rings the doorbell to offer music only bats can hear and more speakers than we have ears, my guess is that Homer won't be listening.

> Hank Imes Edmonton, Alberta

#### **THX Responds**

Since its beginning nearly a decade ago, the THX Home Certification Program has made a great deal of difference to a great many people. The program was originally designed to set a tangible performance standard for premium, high-end audio products. To achieve this lofty goal, it drew on the dedication and brilliance of the audio

CHOOSING THE RIGHT DVD PLAYER

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From Digital TV to DVD, from surround sound to set-top convergence, Stereo Review's Sound & Vision will be where technology becomes entertainment. And where you'll find the information you need to make buying the right stuff a sure thing.



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# MUSIC AND HOME THEATER SYSTEN FIVE

"...hyper-clean, smooth-as-silk... strong recommendation" – Corey Greenberg, Audio, on the Mini Micritor

LOOKING FOR GREAT HIGH-END SPEAKERS AT A PRICE THAT WON'T BREAK THE BANK? LISTEN TO THE CRYSTAL-CLEAR, NATURAL SOUND OF PARADICM!

WHETHEF YOU WANT TO DANCE 'TIL DAWN, BOP 'TIL YOU DROP OR JUST CHILL, THESE PARADIGM SPEAKERS WILL DO IT ALL - AND THEY'LL ROCK YOUR HOME THEATER, TOO!



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THE ULT NATE IN HIGH-PERFORMANCE SOUND"

#### LETTERS

world's most prestigious engineers, some working for THX and some on the staffs of our prestigious roster of licensees. Its success is embodied in hundreds of products that bear the THX logo, products that unquestionably perform better because of their adherence to THX Certification standards. In addition, and perhaps most important, it simplifies the purchase of home theater products by providing customers an instantly recognizable guarantee that products carrying the THX logo truly represent "the best in their class."

Our new program, THX Select, is based on the same basic values as the original THX program: great sound and premium performance. Only now these enhancements are designed for the smaller rooms found in most American homes - and for the smaller budgets also found in most American homes. And why not? No one disagrees that the performance of computers, big-screen TVs, and many fine audio components that feature the Dolby Digital logo, for example, has continued to improve while their prices have continued to drop. In 1999, midprice audio products will experience another dramatic benefit with the introduction of THX Select certification.

And so we move to Corey Greenberg's distasteful and gratuitous attack on THX in the December issue of Stereo Review. In his "High End" column, Mr. Greenberg states that THX is "dumbing down" its requirements like a Florida school system that graduates children who can't read. In addition to being a weak analogy, this is a completely groundless attack. THX is not dumbing down its standards. The companies involved with THX Select are not dumbing down their products. And customers are not dumbing down their passion for the best. Mr. Greenberg should not disrespect your readers by so negatively discussing an entire category of products that he has never seen and, more important, never heard. A contrarian position is part of the American tradition. An uninformed attack is just poor Monica L. Dashwood journalism. **General Manager, THX** 

San Rafael, CA

#### Correction

The Technics desktop minisystem in November's "Executive Decision" comparison report was inadvertently misidentified. It was the SC-HD55.

We welcome your letters. Please write to Editor, Stereo Review's Sound & Vision, 1633 Broadway, New York, NY 10019; or e-mail to StereoEdit@aol.com. Include your street address and phone number for verification. Letters may be edited for clarity and length.

# DON'T FOOL YOU

"I'VE HEARD HIGHLY REGARDED \$2,000 2-WAY 6-INCHERS THAT COULD NOT KEEP UP..."

- Corcy Greenberg, Audio, on the Paradigm Mini Monitor

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THE ULTIMATE IN HIGH-PERFORMANCE SOUND"

For Nearly a Decade, The World's Most Respected Home Theatre Components Have Each Had One Thing In Common...



In 1982, George Lucas challenged a group of engineers to permanently raise the quality of theatrical presentation. After 16 years, and nearly 2000 THX certified theatres, only the size of the audience has changed.

Today, more people applaud the THX experience in more venues than ever. From multi-plex theatres to the world's most discerning homes, the THX brand still stands for the same thing - the best investment in entertainment that money can buy. Which is why, today, THX Home Theatre products are more than a standard of technical excellence.

They are a guarantee of the ultimate Home Theatre experience.





# PRODUCTS



**Panasonic** Turn your stereo TV inito a home theater with the PV-8664 VHS Hi-Fi VCR from Panasonic. Its Spatializer processing technology can produce 3-D surround sound from just two speakers, even those in your TV. The VCR can be programmed to skip over commercials during playback or tc forward automatically to the beginning of the movie on a rented tape. The PV-8664 also has VCR Plus Gold, which assigns the channels for your area based on your Zip code. A front-panel A/V input is provided. Price: \$350. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094; phone, 800-211-7262; Web, www.panasonic com

**Denon** The party rever stops with Denon's DCM-5000 100-disc CD changer system (\$1,800), which can provide uninterrupted playback from dual transports that let you select and

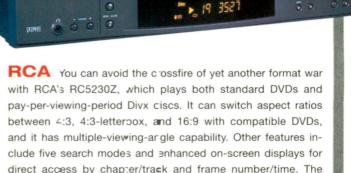


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cue up one disc while another is still playing. There's also a Cross Fader function for s∋amless segues. A PC keyboarc can be connected directly to ease the chore of entering disc/name information, and there's an RS-232 computer port for compatibility with the Escient Tune-Base CD management system. The DCM-5000 can be connected to up to five DCM-5001 100-disc slave changer units (above. \$1,300 each). Dencn, Dept. SR, 222 New Rd., Parsippany, NJ 07054; phor e, 973-575-7810; Web, www.del.denon.com



**Boston Acoustics** The Boston Acoustics Micro Reference System8000 proves that you can buy a 5.1-channel speaker system and still have room for furniture in your home theater. The six-piece system includes two 67%-inch-tall Micro80x front left/right satellizes and an 8-inch-wide Micro80c center speaker, each with one 3½-inch copolymer midrange driver and a wide-dispersion 3/4-inch dome tweeter. The Micro80pv subwoofer, with a 7-inch copolymer cone and a 65-watt ampl fier, stands - 97/8 inches tall. Two 4¼-inch tall Micro80e surround speakers with 3½-inch drivers complete the set. System frequency response is given as 44 Hz to 20 kHz ±3 dB, nominal impedance as 8 ohms, and sensitivity as 89 dB. Price: \$700. Boston Acoustics, Cept. SR, 300 Jubilee Dr., Peabody, MA 01960; phone, 978-538-5000; Web, www.bostonacoustics.com



clude five search modes and enhanced on-screen displays for direct access by chapter/track and frame number/time. The player has an optical Dolby Digital output and includes 96kHz/24-bit audio processing and a 10-bit video digital-to-analog (D/A) converter. It has one composite-video and one S-video output and a front-panel headphone jack with volume control. A universal remote control is included. Price: \$499. RCA, Thomson Consumer Electronics, Cept. SR, 10330 N. Meridian St., Indianapolis, IN 46290; phone, 800-776-T226; Web, www.rca-electronics.com

# NEWPRODUCTS



**Aiwa** The AV-DV70 five-channel A/V receiver is Aiwa's first with a built-in Dolby Digital decoder. The receiver is rated to deliver 120 watts each to the front left, right, and center channels, plus 60 watts each to the two surround channels. Features include four DSP ambience modes, a built-in graphic equalizer with five preset curves, and an on-screen display. The AM/FM digital-synthesis tuner has 32 station presets and a sleep timer. There is one coaxial and one optical digital input and a frontpanel A/V convenience input. Price: \$600. Aiwa, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430; phone, 800-289-2492; Web, www.aiwa.com



**Kenwood** Every picture can tell a crystal-clear story with Kenwood's DV-2070 DVD player. It features a 10-bit video digital-to-analog (D/A) converter for the best possible video resolution, and the player's video noise-reduction system is said to sharpen the picture even further. The DV-2070 can pass signals from DTS-encoded DVDs and CDs, and it can play discs encoded with 96-kHz/24-bit audio. Other features include an 18-track programmable memory, on-screen menus, and front-panel CD Text display. The player has a coaxial and an optical digital audio output, two composite-video outputs, two S-video outputs, one component-video output, and gold-plated RCA jacks. A remote control with joystick is included. Price: \$850. Kenwood, Dept. SR, P.O. Box 22745, Long Beach, CA 90801; phone, 800-536-9663; Web, www.kenwoodusa.com

**NOTE** All prices and product information are supplied by the manufacturers. Dealer prices may vary.

**JBL** Ease the stress of rush hour by cranking up the tunes with JBL's Decade Series DA6502 car power ampl fier. The 150-watt stereo amp features a variable bass boost a built-in crossover with a Butterworth alignment, a floating-ground input for a factcry head unit, and a high-output MOSFET power supply. Triple Threat Protection Circuitry guards against shorts, thermal runaway, and over-current problems. Gold-plated speaker terminals and two line-level and two speaker-level inputs are provided. Price: \$230. JBL. Dept. SR. 250 Crossways Park D-.. Woodbury, NY 11797; phone, 800-336-4525; Web, www.jbl.com



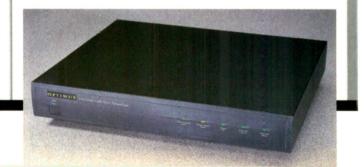


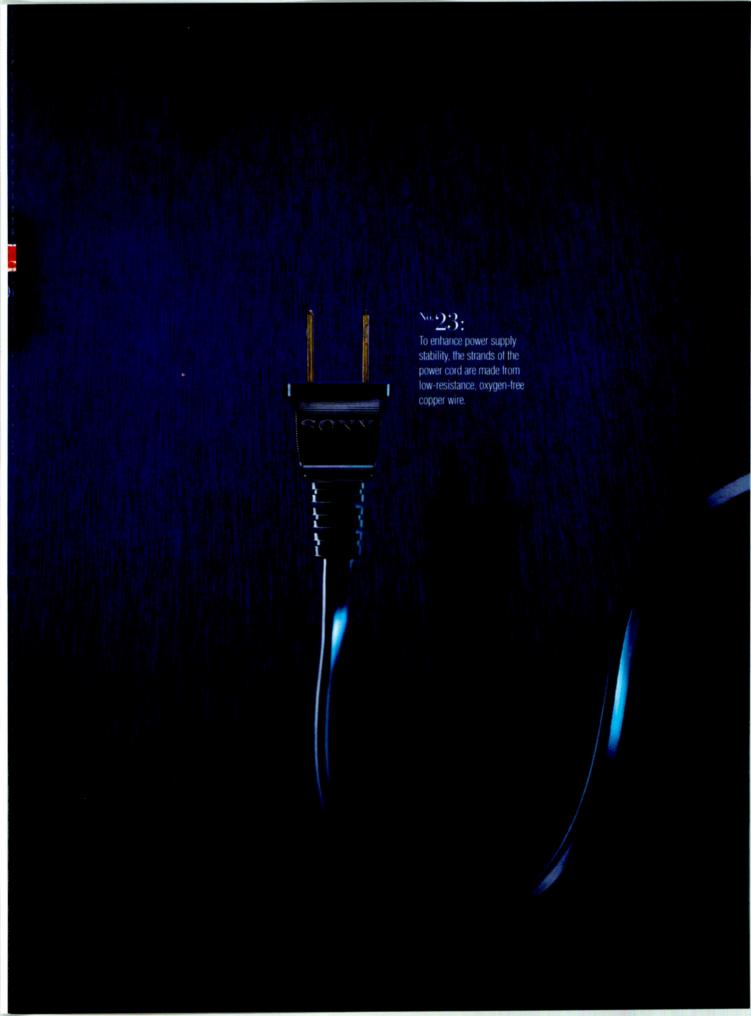
#### Acoustic Research

Tall cool one: The P428PS powered tower from Acoustic Research is a ported speaker with an 8-inch long-throw rear-firing subwoofer driven by a built-in 120-watt amplifier, an 8-inch woofer, a 5inch midrange and a 1-inch tweeter fitted with a waveguide. Frequency response is given as 38 Hz to 20 kHz and sensitivity as 90 dB. The black ash or cherry cabinet measures 41½ x 9½ x 11½ inches. Price: \$599.

Acoustic Research, Dept. SR, 535 Getty Ct., Benicia, CA 94510; phone, 800-969-2748; Web, www.acoustic-research.com

**Optimus** The Home Theater Power Certer from Radio Shack's Optimus can help you avoid tripping over wires and cables crisscrossing your listening room floor. Up to six components can be connected and left switched on. The master power switch turns four of the outlets on or off; the other two are unswitched for memory-equipped A/V gear. A phone line and two pairs of coaxial lines can also be routed through the Power Center and take advantage of its protection against power surges and spikes. It also filters out electromagnetic and radiofrequency interference (RFI). A 6-foot cord is included. Price: \$10C. Optimus by Radio Shack, Dept. SR, 700 One Tandy Center, Ft. Worth, TX 76102; phone, 800-843-7422; Web, www.radioshack.com





## No. 56:

Almost all V pays s try to make the same ort cal pickup wark for both 2D and DVD redia Jot he Sonv DVF-S770C. CLr Dual Discrete<sup>™</sup> optical bid-up uses completel, separate systems, core ded cared to DVD and one optimized for CD. OL apprcach eliminates ens switching and reduces laser wear.

# No. 34

An all-new Dig a Simal Processor DSP servo LSI streamline every aspect of disc tracking. Tack access and chapter access are up to 20% fas er. Spec al effects are enterred And with the assistance of Tilt Servo and Dicita RF processing systems, the Servo LSI proves been rackability for both CDs and DVDs

# No. 6:

The DVP-STTOL LSES a Variable C eff c ent (VC) digital filter that actually ets you op imze iller characteris IS in accordance with the program material. Choose "Sharp" for the widest dynamic range or "Slow" for gaina rcl-off and warme sound

## No. 45:

When you water a leterbox OVD on a standard aspectatio screet, you're ac ually ooking at me putput of a player's lete bo circuit. Most playe s perform etterboxing with a simple, 2-tap weigr bd averaging rilter. It's a compromise that often Esu E in imerline licker. The EVP-S77D uses far more sophisticated tour-tap fil a cesign, tor a visibly cleaner note tilm-like peture.

# How does Sony raise the stan With the DVP-S7700.

SONY 110

R

## No. 39:

The DVP-S7700 remote features phosphorescent keys for the principal functions. Because not even home theater enthusiasts want to fumble around in the dark.

## No. 4.

You're not just watching DVD. you're also watching television That's why the DVP-S7700 remote also controls 38 brands of television plus the Volume setting for 8 brands of A/V receivers.

# No. 59:

Admittedly, the DVP-S7700's plass epoxy audio circuit board is more expensive. It's also more resistant to heat and humidity. And Sonv ages further. The circuit board uses copper traces that, at 70 micrometers. are twice as thick as conventional designs. You get maximum conductivity and minimum noise.



SET UP

C

DNR

PREV

-

DTS

NEXT

H

## No. 33:

V hen you're listening to a CD, you're probably not thinking about the power transformer. But you'll be happy that the DVP-7700's engineers did. The roundcore ("R-Core") power transformer minimizes hum, mechanical vibration and magnetic flux leakage.



DVD is a format rich with options. But getting to the ones you want can become quite a chore. That's why the DVP-S7700 incorporates our DVD Navigator<sup>™</sup> remote with Menu Disc<sup>™</sup> control. It gives you effortless. point-and-click operation for both hardware and software menus. And the DVP-S7700 on-screen displays feature new multi-color icons for easier recognition and easier operation.

# No. 66:

In video, there's an eternal strugale between the ultimate in resolution and the ultimate freedom from picture noise. The DVP-S7700 refuses to compromise. Our sophisticated Digital Video Noise Reduction uses field buffer memory to achieve high-resolution pictures remarkably free of noise.

### DVD/CD/

VIDEO D/A CONVERTER

DUAL DISCRETE



Many second-generation

No. 14:

exclusive SmoothScan™ picture search addresses the problem. So the DVP-S7700 delivers a smoother, more natural flow of images at high speed and slow motion - in both forward and reverse.

# No. 27:

As added protection against chassis bending and flexing, the DVP-S7700 disc transport is mounted in the center. And the player's aluminum front panel blocks air-borne vibration.

# No. 67:

To maximize channel separation, the left and right audio circuits are designed in a twin monaural configuration.

# dard for DVD performance? any number of ways.

VIDEO CD



# No. 3.

Sony helped create the international MPEG-2 digital video standard on which DVD is based. Our comprehensive knowledge is evident in our MPEG-2 decoder design. It achieves superb picture quality.

# No. 61:

As you would expect with a player of this caliber, the DVP-S7700 incorporates a copper-plated chassis to reduce electromagnetic interference. We also use copper-plated chassis screws

## No. 32:

Multi-channel sound is a world of multiple options. That's why the DVP-S7700 offers digital pass-through for both Dolby® Digital and DTS<sup>®</sup> signals. Just connect a superb decoder — such as Sony's TA-E9000ES Preamplifier - for the full digital surround sound treatment.

# No. 8.

Formed from high-carbon iron casting, the DVP-S7700's all-new isolating feet help dampen shelf-borne vibration. Even the location of the screw holes helps. They're off center to diffuse resonant modes w thin the feet themselves

# No. 62:

Other players make you search through menus for the Dolby Digital or CTS 5.1-channel sound tracks. The DVP-S7700's Audio Priority feature locates the right data stream instantly and plays it automatically.

# No. 40:

For quick, professional access to each scene, we created the Sony jog and shuttle dial. This single control enables you to activate Frame Advance. Slow Motion and High Speed Search - in forward and reverse.

# No. 78:

The DVD-Video standard offers linear PCM stereo at up to 96 kHz sampling rate and 24-bit resolution. The **DVP-S7700** incorporates 96 kHz/24-bit capable Digital-to-Analog converters to reproduce sound with clarity and detail

# No. 35:

For those times when you're not using the digital outputs, the DPV-S7700 offers a special Digital-Off mode. It reduces even the slightest possibility of interference with the analog output stages.

# No. 57:

Sonv's remarkable 12.5 MHz optical digital output module delivers high accuracy with amazingly low litter. The optical output is complemented by a coaxial digital output for the most precise, digital-todigital interface.

# No. 26:

The DVP-S7700 preserves DVD video clarity with true component video outputs -Y/P<sub>R</sub> (B-Y)/P<sub>R</sub> (R-Y). You'll get the highest quality connection to high-end video projectors and monitors.

# COMPONENT VIDEO OUT

No. 76:

Vibration can affect the audio circuits and the servo system. Excess servo voltages can also affect the video and aucio quality. For this reason, the DVP-S7700 is built upon an anti-resonant Bulk Molding Compound (BMC) honeycomb base. It extends the full width of the chassis to steadfastly resist vibration. The DVP-S7700 also uses a BMC disc tray, to turther suppress resonance.

# No.

The S-Link<sup>™</sup> interface of the DVP-S7700 helps you combine Sonv audio and video components to form a superbly integrated. convenient system When you select a function, Auto Power automatically switches on the appropriate equipment. When you hit a Play buttom. Auto Function automatically selects the appropriate A/V Receiver and Television inputs! The net effect: a system that anticipates virtually every need.

# No. 12:

As the first manufacturer to recognize the importance of 10-bit Video Digital-to-Analog Converters, Sony was certain to choose a 10-bit converter for the DVP-S7700. Cur highperformance 27 MHz design renders dark-to-light picture gradations closer to the original movie master.

## No. 98:

Because video en husiasts require the utmost in flexibility, the DVP-S7700 also provides twc S-Video and two composite video autputs.

## No. 91:

DVD-Video players can encompass three different linear PCM sampling rates: 44.1 kHz (for CD) as wellas 48 and 96 kHz (for DVD). In order to deliver the full schic benefit, the DVP-S7700 analog low-pass filter automatically attenuates at the right frequency for each sampling rate. The result? No matter what sampling rate is used. you'll experience improved signal-to-noise ratio and lower distortion.

more reasons to choose the DVD Player that sets the Standard. U Free Discs.

TRI STAR

TRI 22

TRI

Harrison Ford

Z

VIDEC

FRRY MAGNIRE

CALLS TOTAL TO LOUDED

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AUNEX AN TOR LIVE AN THE BEACON THE

THE CABLE GUY

My BEST FRIEND'S

Eimopaloozai fly Away Home

# GATTACA

AS GOOD AS IT GETS

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WORLD

THE DEVIL'S OWN

SEVEN YEA TIBET

SWEPT FROM THE Dr. Strangelove

THE FIFTH ELEMENT

SLEEPLESS A SEATTLE

From our earliest work in DVD, Sony has understood that Reference Standard hardware requires cutting-edge software. That's why we're obsessive about the audio and video quality of DVD. It also explains why, when you buy a Sony DVP-S7700 DVD-Video Player between now and January 31, 1999,

you'll receive five DVDs absolutely free.

You'll get the eye-opening



AVIA Home Theatre Set-Up Guide from Ovation - the disc that helps you optimize your system settings. You'll get the James Taylor DVD Live at the Beacon Theater, a concert that was conceived, recorded and produced specifically for the DVD format. And you'll choose three movies from over 1,000 DVD titles available at NetFlix.com!<sup>2</sup>

> (See your Sony retailer or www.sony.com/dvd for complete details.)

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DVD

# NEWPRODUCTS



**Pioneer** Laserdisc collectors won't be shut out of the DVD revolution with the Pioneer Elite DVL-91 combi-player. It also plays CDs and DVDs, including those with 96-kHz/24-bit audio, as well as CD-Rs and CD-RWs. The DTS-compatible player contains 10-bit video and 20-bit audio digital-to-analog converters and features Dolby Virtual Surround sound based on an SRS Labs TruSurround chip, which enables 3-D imaging using only two speakers. It also uses Pioneer's proprietary Legato Link conversion process, said to restore frequencies above 20 kHz that are lost during d gital recording. It has two component-video, two composite-video, and two S-video outputs and one optical and two coaxial digital outputs. Price: \$1,800. Pioneer, Dept. SR, 2265 E. 220th St., Long Beach, CA 90810; phone, 800-746-6337; Web, www.pioneerelectronics.com



**Polk Audio** The CS-400 center-channel speaker from Polk Audio is said to provide a near-perfect timbral match with the company's main left/right speakers that also use Polk's Dynamic Balance technology. It has a bass-reflex enclosure and dual 6½-inch woofers flanking a 1-inch trilaminate tweeter in a cascaded array — one woofer plays only bass frequencies while the other handles both the bass and midrange. Polk's patented Power Port and Acoustic Resonance Control technologies are said to reduce distortion and port noise. Frequency response is given as 60 Hz to 25 kHz –3 dB, sensitivity as 91 dB, and impedance as 8 ohms. The biampable CS-400 has two sets of gold-plated five-way binding posts, and the cabinet, finished in black pebble-grain vinyl, measures 8½ x 18¾ x 13½ inches. Price: \$450. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215; phone, 800-377-7655; Web, www.polkaudio.com TDK Homemade music compilations on CD are more affordable than ever with TDK's CD-Twin-R recordable blank disc. Plavable in all home, personal, and car CD players, the 74-minute-long CD-Twin is produced with TDK's Reflex Mirror Tuning technology and MSi recording material for higher reflectivity and sensitivity than previous CD-R media. has a double-layer protective system that is said to provide 50 percent more resistance to physical damage. Price: \$8.99. TDK, Dept. SR, 12 Harbor Park Dr., Port Washington, NY 11050; phone, 800-835-8273; Web, www.tdk.com





Kinetic Claimed to be one of the world's "most powerful" in-wall speakers. Kinetic Audio's Rex is rated for maximum power handling of 200 watts. It has a 12-inch polymer woofer, a 2-inch midrange, a 11/8-inch tweeter, and a variable, pluggable port. Frequency response is given as 18 Hz to 22 kHz ±2.5 dB, sensitivity as 91 dB, and nominal impedance as 8 ohms. Measuring 13 x 24 x 6 inches, the Rex is available in standard black, white, or natural oak finishes as well as exotic wood veneers. Price: \$1,500 a pair. Kinetic Audio, Dept. SR, P.O. Box 215, Arlington Heights, IL 60006; phone, 847-254-6556

**BDI** f you love home theater so much you think your equipment belongs on a pedestal, Becker Designed Inc. (BDI) offers the next best thing: the Odeon Collection of A/V furniture. The Model 7200 (below left, \$625) has three tempered-glass shelves, and the top shelf can hold up to 200 pounds — enough for a 35-inch ¬V. The Model 7201 (right, \$750) has four shelves and a top-shelf limit of 175 pounds. The lower shelves of both models can each hold 90 pounds and have usable depths of 18 inches. Cptional casters with brakes are available. The pieces are finished in maple or cherry wood veneers. Becker Designed Inc., Dept. SR, 14101 A Parke Long Ct., Chantilly, VA 20151; phone, 800-428-2881; Web, www.beliusa.com



# NEWPRODUCTS



**Bose** For sound that's anything but square, Bose has incorporated its third generation of satellite speaker "cubes," the smallest ever, into the Acoustimass 15 six-piece home theater system. The set comprises five 6<sup>1</sup>/<sub>4</sub>-inch-tall satellites in rotating dual-cube arrays and a powered bass module measuring 14 x 23<sup>3</sup>/<sub>8</sub> x 7<sup>1</sup>/<sub>2</sub> inches. Each satellite contains a pair of 2<sup>1</sup>/<sub>2</sub>-inch drivers, while the bass module houses two 5<sup>1</sup>/<sub>4</sub>-inch long-throw drivers. The front speakers can handle up to 2C0 watts of power, the surrounds 100 watts. A separate low-frequency effects (LFE) output from an A/V receiver can be directly connected to the Acoustimass module. The system is available in black or white. Price: \$1,399. Bose, Dept. SR, The Mountain, Framingham, MA 01701; phone, 800-444-2673; Web, www.bose.com



**Escient** Hate hunting through piles of CDs to find that one song you just have to hear? The Escient TuneBase Pro MK-I controller, which connects to a TV and CD changer, provides a graphical interface that lets you search your collection by artist, album title, song title, or musical style with a wireless keyboard and remote control (not shown). The system displays CD cover art from a database and contains information on 250,000 discs, with software upgrades available by modem. The TuneBase can control most high-capacity CD changers and has one RS-232 port for bidirectional external control by a computer. Price: \$4,000. Escient, Dept. SR, 12955 Old Meridian St., Carmel, IN 46032; phone. 800-372-4368; Web, www.escient.com

#### Sony Switching

tapes in your personal stereo while on the go is a snap with Sony's CD-IT cassettes, which feature a slide-out case for easier access than typical hinged cases. The tapes are colored red for normal-bias and blue for high-bias. Both types come in 74-, 90-, and 120-minute lengths and are priced at \$1.19, \$1.29, and \$2.19, respectively, for normal-bias and \$2.19, \$2.59, and \$2.89 for high-bias. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656; phone, 800-222-7€69; Web, www.sel.sony.com



#### **Standesign**

Rack 'em up! The Fat Boy A4 component rack from Standesign features a thick tubular frame, finished in "black pearl" (\$399) or stainless steel (\$599), that holds four glass shelves. It stands 36 inches tall, and there are 63/4 inches of usable space between each 173/4-inch-wide shelf. A taller six-shelf model and a wider horizontal threeshelf A/V model are also available. Standesign, Group Madsen Ltd., Dept. SR, 1723 Adams St. NE, Minneapolis, MN 55413; phone, 800-811-9757



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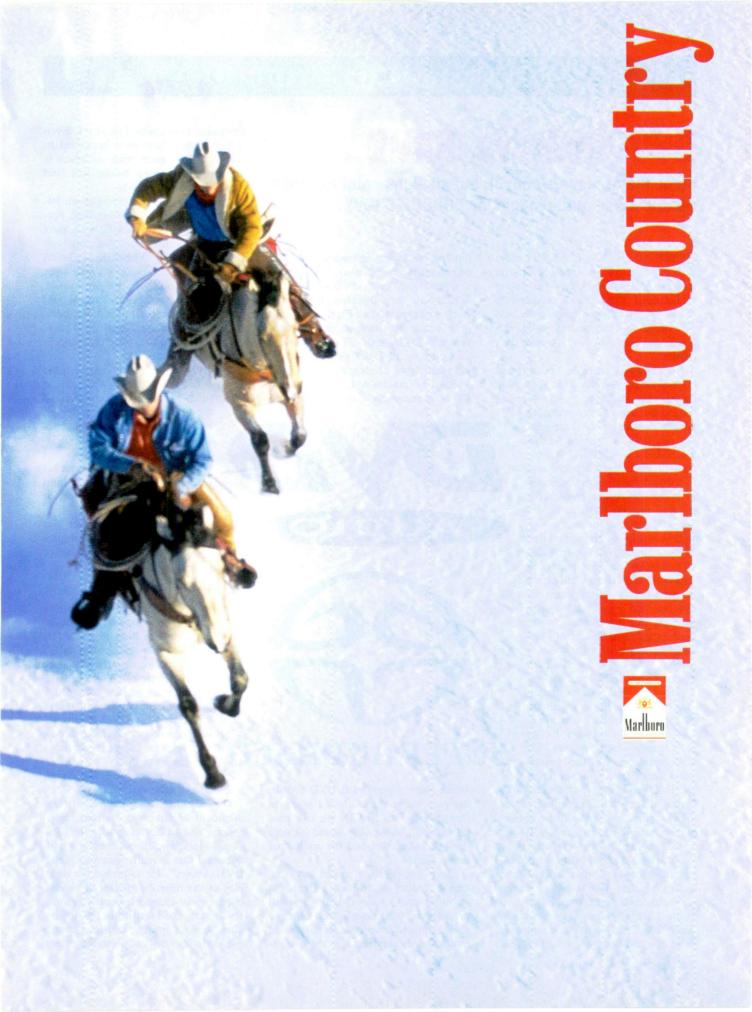


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# TECHNOLOGY UPDATE

# **DVD-Audio vs. SACD**

Some major players deny it, but all signs point toward a rumble in the audio jungle. by GORDON BROCKHOUSE

THERE MIGHT BE ENOUGH room in the world for one high-resolution multichannel music format, but do we really need two? That's a question you're likely to hear from more and more audio fans this year as both DVD-Audio and Super Audio CD make their debuts.

Not only will there be two formats, but the hardware and software for both could start popping up in stores at

around the same time, confusing people already weary from sorting out DVD-Video from Divx and DTV from HDTV. A protracted debate over copy protection could force the introduction of DVD-Audio, now planned for the first part of 1999, to be delaved as late as summer - or within weeks of the scheduled U.S. introduction of Super Audio CD (SACD). At this writing, in mid-November, there's still plenty of time before either format is due out, and a lot could change by then, but it looks like we're heading into that treacherous territory known as a format war.

The WG-4 — the industry group responsible for cobbling together the DVD-Audio specifications — is taking a conciliatory approach. Asked if a war was looming, WG-4 member Jordan Rost responded, "I hope not." He said there is no technical reason why Sony's Direct Stream Digi-

tal (DSD) technology, on which SACD is based, can't be incorporated into DVD-Audio. But it would be optional and not mandatory, and for SACD sponsors Sony and Philips, there's the rub.

Both Sony and Philips are WG-4 members, but they broke ranks with the group because they were concerned about backward compatibility with existing CDs. Both companies also believe that PCM (pulse-code modulation), the technology behind DVD-Audio, has reached its limits and that DSD represents the audio future.

Contending that DVD-Audio and SACD are very different platforms, Sony spokesman Marc Finer called talk of a format war irresponsible and premature. "DVD-Audio is positioned as an extension of DVD-Video, with the long-term goal of merging with DVD-Video," he maintained. "Super Audio CD is an extension of the CD platform.



While Sony supports the DVD format, the pure audio market is not going to disappear. With SACD, we can pro-

mote the highest-quality sound for both the general market and the audiophile community." Sony and Philips might say that

they're not trying to pick a fight, but consider the scenario: Only a small proportion of the people who own audio equipment have systems capable of multichannel playback, let alone highresolution multichannel playback. Even if both camps bent over backward to market around each other — which is unheard of — they would still find themselves butting heads.

Also, more and more people are letting their CD players collect dust, opting instead to play back CDs on their DVD players. Machines that play both DVD-Audio and -Video discs should reach stores right around the time sales of DVD-Video players hit their stride, and these "universal" machines should be able to ride their video brothers' coattails. As the number of DVD players in use grows, backward compatibility diminishes as an issue.

Finally, only the canine branch of the audiophile market is likely to be able to distinguish between the subtleties of

the two formats. Sony and Philips might push SACD more toward the high end, while DVD-Audio, like DVD-Video, comes out of the gate as a mass-market format. In fact, however, both formats are capable of audiophile-quality sound.

No matter how you cut it, you have two similar technologies vying for the same small piece of turf. That's a format war.

#### The Hard Sell

Promoting higher resolution is probably not such a great way to get people to flock to either format — a fact some record labels and hardware manufacturers are acutely aware of. While Bill Allen, director of new technology for BMG Entertainment, thinks 96-kHz/24-bit DVD-Audio recordings sound great, he added, "The general public is not banging down our doors for a better-than-CD experience. We recognize that as a mass marketer."

On the other hand, Paul West, vice president of studio operations, engineering and quality assurance, for Universal Music Group, believes "it's multichannel that is really going to propel DVD-Audio." He's probably right. Nay-sayers raise the specter of quadraphonic (four-channel) sound's ignominous crash and burn in the 1970s, but after years of hearing surround soundtracks in movie and home theaters,

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#### TECHNOLOGY UPDATE

we're all used to music and sound coming at us from all directions. Hearing music-only recordings in surround seems almost second nature now.

If that all sounds sensible enough, get ready for another dose of reality: most of the initial DVD-Audio and SACD releases will be in stereo, not surround. Audiophile label Telarc, for instance, is recording about four albums per month in DSD, but all in two channels. Michael Bishop, Telarc's manager of technical services, said that there was only one Philips multichannel DSD recorder in North America, and it was being shared between many labels. Telarc has a number of major multichannel classical albums lined up, he told me — for the year 2000.

Some DSD recordings are already available, but on CD. Mobile Fidelity (another audiophile label) is remastering albums using a modified Studer analog tape player and a Sony DSD recorder. This "GAIN 2" system downconverts the DSD sampling rate of 2.8 MHz to 44.1 kHz for CD, but the 2.8-MHz DSD master can still be used for an SACD version when the time comes. Echoing Telarc, MoFi plans to release its first SACDs in two channels. "But anything's possible," according to John Wood, its director of new technology.

Some multichannel recordings are being done, though, such as those by MCA Nashville producer Tony Brown, who's said to exploit very precise positioning of the vocalists, combined with a more traditional approach to the location of the instruments.

Rost said he expects the first big DVD-Audio software push to come late in 1999. Some of the titles will be new releases from major artists, others new mixes of existing recordings. But he warned that it will be a couple of years before studios have the necessary recording and mastering equipment to make a significant number of multichannel DVD-Audio recordings.

#### Lines in the Sand

It takes a scorecard to keep track of all the roster changes and additions as the DVD-Audio and SACD camps become better defined. At Audio Expo '98 in Tokyo last October, Sony, Philips, Onkyo, and Sharp all participated in an

# We Are Not Alone

EVER BEFORE IN JAPAN HAS SO MUCH PROMISE about new audio formats been met with so little enthusiasm by so many people. The recession has had a negative impact on sales of audio/video products, with consumers instead spending their limited funds on non-A/V gear like cell phones and computers.

Philips's recent introduction of three new CD recorders highlights another hurdle. While interest in CD-R is on the upswing, people are wondering just how many audio technologies engineers have on the drawing board. Consumers feel overwhelmed by a kind of music-format future shock and are even more inclined to wait and see than they were when DCC and MiniDisc went head-to-head at the beginning of the decade.

Denon, Kenwood, Onkyo, Sharp, and, significantly, Philips and Sony voiced support for both DVD-Audio and SACD at Tokyo's Audio Expo in October. However, JVC, Pioneer, Toshiba, and Matsushita (Panasonic and Technics in the U.S.) are supporting only DVD-Audio — at least for now. This might seem to tip the scales toward DVD-Audio, but home theater has never really caught on in Japan. Most houses and apartments are too small, so multichannel audio doesn't have the same appeal here that it does in America. Backward compatibility gives SACD the advantage.

Sony's hard-won success with MiniDisc showed that it has what it takes to get SACD accepted by both consumers and the music industry. The company plans to include the new format in everything from components to rack systems to portable players. Portables are especially important in a nation of commuters. SACD will probably be the strongest performer in the general audio market, with DVD-Audio holding its own with multichannel home theater systems. The laurels will likely go to whoever is swiftest in getting products to market and in gaining the support of the recording industry. *— Bryan Harrell* 

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<u>H- Absolute Theater: Powell+ Audio Craft:</u> Akron, Cleveland, Mayfield Hts, Westlake+ Audio Etc.: Dayton+ Belden Audio: Canton Jassics Stereo: Lima+ Ohi Valley Aulio: Cincinnait Paragon Sound Joledo- Stereo Visions: Columbus> Threshold Audio: Heath+ Jonique Home System: Cincinnait.

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#### TECHNOLOGY UPDATE

SACD demo. Meanwhile, Panasonic, JVC, Pioneer, Samsung, and Yamaha reaffirmed their commitment to the DVD-Audio camp. Denon and Onkyo showed prototype SACD/DVD-Audio players, giving showgoers a glimpse of the likely audio future. Pioneer, Samsung, Panasonic, JVC, and Toshiba have already demonstrated prototype DVD-Audio players, while Marantz has shown an SACD prototype.

Sony and Philips continue to stand by their original announcement that SACD will appear in the U.S. in the fall of 1999. The DVD-Audio group hoped to have hardware and software on the market in January, but that seems unlikely at this writing. The bugaboo is copy protection. Rost said an "aggressive target" would be to have an agreement hammered out by the end of 1998. If that came to pass, it would still take months for manufacturers to incorporate the technology, suggesting a late-spring introduction at the earliest. West, however, didn't think the WG-4 would arrive at a consensus until spring. That would then push the DVD-Audio launch dangerously close to SACD's scheduled introduction.

A number of copy-protection propos-

als are on the table. The recording industry would prefer a system where the digital content on the disc is encrypted. This would allow the protection to work on any future systems where components are connected on a digital signal bus, most likely Firewire (IEEE-1394). Only digital components manufactured in accordance with the protocol would be able to decrypt the data. A preamplifier, for instance, might be allowed to play a disc, but a recorder wouldn't be allowed to make a copy. The system would allow record companies to permit limited recording if they wish.

Initially, decryption, decoding, and digital-to-analog conversion of DVD-Audio discs will be done inside the players, which will be connected to other components through analog outputs. Nothing would prevent copying a disc on an analog recorder or on a digital recorder through its analog inputs.

The DVD Forum would like to use "digital watermarking" to place signals within the program material that would also be transferred to analog copies and digital copies made from an analog signal. (Sony and Philips have already finalized the watermarking technology for SACD.) Future digital recorders would detect these embedded signals and refuse to copy protected material.

Listening tests will be conducted before a system is ratified to make sure the watermarking process is inaudible. Manufacturers want a system that's easy and inexpensive to implement and easy for consumers to use. The music companies want a robust system that can't be easily hacked.

#### Peace in Our Time

Can war be avoided? Many see hybrid SACD/DVD-Audio players as the best way out. These players will probably be expensive initially, but mass acceptance of DVD should bring the cost down fairly soon. Some software companies will likely release titles in both formats. Telarc, for instance, hasn't ruled out the possibility of downconverting DSD recordings to high-resolution PCM and releasing them on DVD-Audio.

At press time, prospects for reconciliation appeared dim. "I think there are going to be two formats," said MoFi's Wood. West, of Universal, agreed that "a format war is possible," but he predicted that the recording industry would pressure both sides to come together, as happened with DVD-Video.

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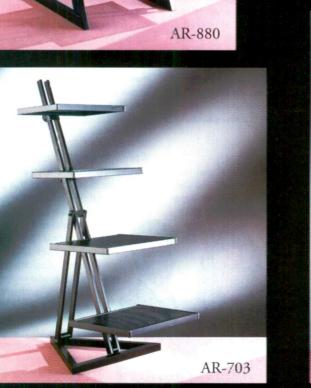
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#### RECOMMENDED NEW TITLES AND CLASSIC REISSUES BY BAD BENNETT

#### LOST IN SPACE

You have to wonder what the target audience was for 1998's elaborate Lost in Space. since its overall G-rated attitude was laced with enough adult language and situations

anniversary Special Edition DVD may seem dark to some, but according to the director's commentary, that's the way he conceived and shot the movie. If you have your monitor and your room lighting properly adjust-



to earn the movie a PG-13 rating. Still, it's fun to watch the special effects and Gary Oldman's effective, over-the-top performance as Dr. Zachary Smith. And the DVD edition, offered in New Line's featuresladen Platinum Series, is brimming with extras: full-motion menus (with a cool preview option), a trailer, a music video, deleted scenes, complete filmographies of the cast (including scenes from other New Line movies), two separate screen-specific commentary tracks, two featurettes (The Future of Space Travel and Building the Special Effects), and an episode-by-episode synopsis of the original TV series, including interviews with some of its stars. If that's not enough, put the disc in a DVD-ROM

drive and you can display the shooting script (with links to the movie) as well as play five interactive games. The movie and the extras are presented in state-of-the-art video, and the sound gave my new Paradigm subwoofer a real test, which it passed with flying colors. One-sided dual-layer; English, Dolby Digital 5.1; English subtitles; closedcaptioned; letterbox (2.35:1); 130 min (feature). New Line Home Video, \$24.98.

#### **AMERICAN GRAFFITI**

George Lucas's 1973 valentine to the early 1960s is one of the most enduring period movies of all time. The THX digital transfer for Universal's 25th-

ed. a wealth of details will emerge from a rich picture that is never muddy or murky. Furthermore, as discussed in the nearly 80minute documentary on the making of American Graffiti. the movie broke ground in drawing on rock & roll classics, with each song carefully chosen to comment on a particular vignette and mixed to seem as if it was emerging from the scene. It all comes

across quite clearly in the beautifully processed matrix surround.

One-sided dual-layer; English, Dolby Digital twochannel matrix surround: French, Dolby Digital two-channel mono: Spanish subtitles: closedcaptioned: letterbox (2.35:1): 112 min (feature). Universal Home Video, \$34.98.

#### WILD THINGS

It's pointed and nasty at times - and certainly steamy, with Neve Campbell and Denise Richards wearing little, to cope with the Florida heat. But 1998's

The Wild Bunch (from

left): Dillon, Campbell,

**Richards**, Bacon

Wild Things, also starring Kevin Bacon and Matt Dillon, is always intriguing, a fresh visit to the genre of noir mysteries. And the DVD edition is a dream. With its long shots and pans, this is the kind of title that could have given first-generation DVD players a fit, but I don't see a trace of digital artifacts. George S. Clinton's Cajun-tinged jazz score is exceptionally well reproduced: perhaps that's why he is included in the commentary track along with director John Mc-Naughton, editor Elena Maganini, and producers Rodney Liber and Steven A. Jones. You also get outtakes plus trailers for both Wild Things and Starship Troopers (in which Richards also appears). Tip: Don't do the home-video equivalent of leaving during the credits by switching them off or heading for the kitchen. You'll miss some very important revelations.

Two-sided; English, Dolby Digital 5.1; English and French, Dolby Digital two-channel matrix surround; English and French subtitles: closed-captioned; letterbox (2.35:1) and pan-and-scan; 108 min (feature) Columbia TriStar Home Video \$29.98

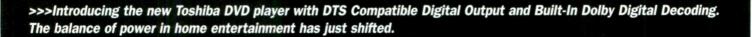
#### SEVEN SAMURAI

When Akira Kurosawa died in September. the film world lost a man whom many considered its finest director. But his work, as they say, will live forever. And now you can

see 1954's Seven Samurai, arguably his greatest achievement (and surely the greatest samurai film), in all its glory on Criterion's new DVD. From highly contrasted, carefully framed closeups to the legendary climactic battle

scenes, each black-and-white implemental section on Criterion's restoration process for the film shows the before-and-after difference. The restored soundtrack is also very good, presenting Fumio Hayasaka's score much more accurately than might be expected from a 40-year-old source. Extras include the original U.S. trailer and an informative English commentary track by Japanese film expert Michael Jeck.

One-sided dual-layer; Japanese, Dolby Digital one-channel mono; English subtitles; 1.33:1; 203 min (feature). Criterion, \$39.98.



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IAN G. MASTERS

Digital-Ready Receivers I recently purchased a Pro Logic receiver that has a sticker on the front that reads "5.1-channel input for Dolby Digital (AC-3)." What does this mean? Would I have to add a digital decoder box for true digital sound? Jon Seely Darien, IL

Yes. Some older surround sound re-Ceivers have a Dolby Pro Logic decoder and five distinct amplifier channels. rather than sharing one channel between the two surround speakers the way the earliest Pro Logic receivers did. They rarely allow external devices to feed those channels. however. Ever since the advent of 5.1-channel digital surround sound, though, some five-channel Pro Logic receivers have included six-channel inputs for decoded Dolby Digital (or DTS) signals so that you can add an external decoder rather than upgrade the whole works. Signals for the five main speakers (front left, center, and right plus left and right surround) go to the receiver's

corresponding amp channels, while the LFE (low-frequency-effects) signal goes to the subwoofer output (or a line output if there's no dedicated sub output). You can do the same thing with a DVD player that has an internal Dolby Digital decoder.

#### Getting to the Bottom

My DVD player has a built-in Dolby Digital decoder with six-channel outputs. To my dismay, my "Dolby Digitalready" receiver has only five inputs, with no LFE input. I am not sure that I am missing much from not connecting this line at all, as the sound is still very good. Still, what are my options? Mitch Potts Garden Grove, CA

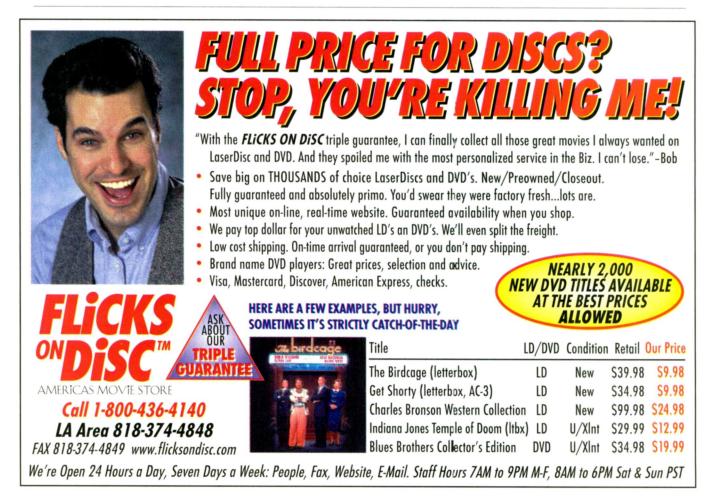
A. If it sounds good now, why mess with it? But if you want that extra oomph, just use the LFE output on your DVD player to feed a powered subwoofer. The sub would only work in Dolby Digital mode, of course, and you'd have to find a convenient way to control bass level (the controls on the subwoofers themselves are usually hard to reach), but it might well be worth a bit of experimentation.

#### **DAC Differences**

Recently I wanted to test the effect of feeding the coaxial digital output of my CD player into the coaxial input of my receiver. I was expecting that the digital connection would improve the sound, but I was surprised to find that the sound became much worse. Does this mean that the receiver's digital-to-analog converter (DAC) is far inferior to the one in the CD player?

#### Michael Lim Hong Kong

A Not necessarily — neither DAC may be inferior in any absolute sense. In fact, if the receiver's DAC is truly "much worse," I'd bet that the receiver is defective in some way (or some control you aren't aware of has been activated). Stereo Re-



*view*'s receiver tests have shown the differences between receiver and CD-player DACs to be small and, at worst, barely audible at normal playback levels.

### MiniDisc Editing

I am interested in transferring old records and tapes to MiniDisc, interspersed with microphone comments, and using the pause control to edit as I go. I don't want the recorder to create a new track number every time the record-pause control is activated, but my local dealers can't find a machine that will do what I want. Can you help? James Hohmann Ithaca, NY

A I can't pretend to have played with every MiniDisc recorder on the market, but all of the ones I have used will do as you say, create a new track every time you pause during recording. That doesn't matter most of the time, since the disc just continues playback regardless of what the readout says. If it is a problem for you, though, you should be able to use the deck's "combine" editing function to turn two consecutive tracks into one.

### VCR Inputs

I have owned a pair of hi-fi VCRs for some years, using one for TV and the other for FM, connected through an external-source input. I now want to buy a third recorder but have not been able to find one with such a connection, and salesmen I have asked don't seem to know about it. Where can I find a recorder with the proper input? Frank K. Edmondson Bloomington, IN

This may simply be a matter of terminology, because in more than 20 years of messing with VCRs, I've never encountered one - especially a VHS Hi-Fi model - that didn't have line inputs and outputs of some form. Not all have duplicate sets of inputs, switchable from the remote control, that would allow you to use the machine both for dubbing video and for recording from an FM tuner with minimum fuss, but many models do. Many also have a second set of jacks on the front panel to facilitate the connection of a camcorder for editing the vacation videos. This set can be used for other sources as well. If your dealers aren't aware of these facts, you might be putting your trust in the wrong places.



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# **Educational Truancy**

DAVID RANADA

I PLAYED HOOKY last night. Blowing off one of the myriad industry schmoozefests that take place this time of year (early November) — the kind of event where you stand around with a drink in your hand trying not to look as bored as the other people standing around with drinks in their hands — I went to what I might have to describe to my boss as a "listening-standards recalibration symposium." In other words, I went to a live concert.

It was the Juilliard Orchestra playing, in Avery Fisher Hall (named after one of the audio industry's founding fathers), an extremely ambitious program of 20thcentury masterpieces. It opened with Debussy's Jeux, continued with Ligeti's very beautiful Atmosphères (the music used in the Star Gate sequence of 2001: A Space Odyssey) and ended with Messiaen's spectacular Turangalîla Symphony, complete with enlarged percussion section, acres of heavy brass, fiendishly difficult piano solos and, just to send it over the top, the weirdly expressive cries of an Ondes Martenot, an early electronic synthesizer. The musicians, led by David Robertson, played these difficult pieces dazzlingly well, especially considering that they are still students.

As almost always happens when I go to a concert, I was reminded again both of how far audio has come since the birth of this magazine in 1958 and of how far it still has to go. Coming back to our offices right after the event, firing up the old reference system, and playing even the bestsounding recordings of the Messiaen (Tortelier's on Chandos, Chailly's on London) was a vivid reminder of precisely what is good and bad about the present state of the art in recording and reproducing music.

### Good

► Extremely low background noise. The blue-haired ladies sitting in back of me at the concert, with their seemingly interminable crackling of cellophane candy wraps, raised my noise floor, and my blood pressure, by at least 30 dB. The guy sitting to my right managed to get in a couple of digital-full-scale coughs at the worst possible moments (I could even hear their reverberant decay). In contrast, a good "20-bit" CD played at lifelike levels in an acoustically insulated environment like our sound room can have completely inaudible background noise and no coughs. Forty years ago, the best noise floor you could get out of an LP was not far from the blue-haired limit.

▶ Very low distortion. I heard short-term peaks of what I estimate to be slightly over 100 dB from my seat in the middle of Row K, and I could get equally loud peaks in our sound room without objectionable distortion. The maximum undistorted playback levels in 1958 were probably some 10 dB lower than live because tleties but with gross ping-pong effects. Record engineering has come a long way.

### Bad

Imaging, again. Last night's listening showed clearly that what most separates the sound of a home playback system from a live concert is that the concert is a complete and consistent three-dimensional sonic experience and stereo playback isn't. At Avery Fisher Hall sounds of significance were coming from all directions: the orchestra itself from left to right front, early reflections from further out on the sides and above, and reverberation from everywhere. Stereo at its best is little better than two-dimensional (left/right with some depth thrown in if you're lucky and some height by accident). While ambience enhancement using artificial re-

### Hearing a live concert provided a vivid reminder of precisely what is good and bad about the present state of the audio art.

of speaker limitations and the lack of high-power amplifiers. Live playback levels back then would also have annoyingly exposed LP noise.

► Long uninterrupted playing times. The performance of the Messiaen was interrupted halfway through by well-deserved applause after the rousing fifth movement. Conductor Robertson then turned to the audience and said, "It ain't over yet, folks!" That clearly didn't happen with my CDs, nor were they ever in danger of jumping a groove because of a scratch or dust particle. They also held the *Turangalîla* complete on one side.

▶ Imaging. In my orchestra seat, the woodwinds and percussion were hidden from view by the strings, the piano, and the conductor, and they sounded more disembodied and difficult to localize than other sections. This is not the case from some of the hall's balcony seats, where imaging can be very recordinglike. In fact, a modern recording can have better imaging (meaning clearer) than a live orchestra concert: more precise left-to-right localization, less recessed in depth. Many recordings from the early days of stereo were obsessed not with such sub-

flections can sound very lifelike, even the best of it doesn't blend with the original recording in a completely natural way.

Aside from the extremely complicated and related areas of recording techniques, speaker design, and speaker/room interactions, the reproduction of full acoustic space is the only area not yet mastered by a home audio technology. It's a problem that only a multichannel audio system can overcome. To emphasize: this is the only path audio can follow that is guaranteed to produce more lifelike sound reproduction. Extending the audio bandwidth by sampling at 96 kHz or the dynamic range by using 24-bit samples are trivial and psychoacoustically ridiculous affairs compared with the spatial challenge, which simply cannot be met with the two-channel delivery system called stereo.

The technology for the reproduction of music has indeed been heading in a multichannel direction for the last few years, a direction that offers great sonic and artistic potential. Despite developments in ambience enhancement and multichannel music from Dolby Digital DVDs and DTS CDs, a lot more can, and shortly will, be done to raise the fidelity of home audio even higher. The multichannel symphony ain't over yet, folks!

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DIGITAL HORIZONS

**KEN C. POHLMANN** 

# **Thrill Seekers!**

WHEN YOU WERE a child, did you stop and look both ways when crossing the street, or did you just dart out into traffic? When you were a teenager, did you enjoy driving your father's Oldsmobile, or was your driver's license permanently revoked by an outraged DMV? In your spare time, do you lounge beside the pool, or do you bungee-jump nude off the Golden Gate Bridge?

Most people, by definition, are normal. They tend to prefer a prudent risk/reward ratio, realizing small gains and pleasures in return for manageable jeopardy. Sure, they'd like to make a killing in the commodities market, or play golf with O. J. Simpson, or do other titillating things, but they are ultimately content with a safer, more predictable existence. Their lives are well planned and kind of boring.

Then there are the thrill seekers and risk takers for whom bravery and courage are qualities to be asserted, tested, and proved every day. They welcome the unknown. They enjoy flirting with danger. They don't want to calculate when they can guess. These daredevils don't invest — they speculate. Their lives are exciting!

Now, most people associate thrill seeking with exotic pursuits such as sky-diving and race-car driving. Little do they know that for many of us, some of the riskiest decisions, some of the most heartpounding moments, occur right in an audio/video dealer's showroom as we buy a new piece of gear. You think I'm exaggerating? Think again! Buying new A/V technology is a crapshoot.

When we buy a piece of A/V hardware, we fully expect that it will be useful for a while — say, ten years. Normal people look at the purchase price, divide by ten years, and figure that a \$400 DVD player will cost them \$40 a year, so it's a good investment. Thrill seekers, of course, have a different outlook. They don't care about amortizing their purchases. They only want to be first on their blocks to have the latest gear, and the devil with long-term outlooks. They don't mind blowing a bundle on a new product that may quickly become junk. The surprising thing is that even so-called "safe" A/V purchases are filled with risk, because obsolescence looms surprisingly large and can occur in the least expected places.

For example, what could be safer than buying a DVD player? DVD is the next big thing, so if you buy a DVD player, you're making a sound investment, right? Well, maybe not. If you read the fine print, you're not buying a DVD player, you're buying a DVD-Video player. And while it will indeed play back DVD-Video discs, it will not play back the imminently arriving DVD-Audio discs. That's right, thrill seekers! Can you feel your heart pounding? Do you enjoy the rush? I know I do!

The simple fact of the matter is that although DVD-Video and DVD-Audio are first cousins, they're not on speaking terms. The DVD-Audio discs slated to hit stores later this year simply will not play back on DVD-Video players. Bottom line: If you want to listen to DVD-AuDirect Stream Digital (DSD) format. Is it better than PCM? Who knows? But it sure is incompatible! And it might succeed in the market, so instead of buying a "safe" DVD-Universal player (note the irony dripping from the word "universal"), you might want to wait to buy an even more "universal" player that plays DVD-Video, DVD-Audio, and Super Audio CD.

Predictably, thrill seekers have nothing but pure disdain for conservatism in these matters. When I expressed mild support for the Divx feature, torch-carrying thrill seekers came after me the way the villagers attacked Dr. Frankenstein's castle. They spurn Divx because it hedges your bets. If you buy a regular DVD-Video player, it won't play Divx discs. If you buy a DVD-Video player with the Divx feature, it plays both DVD-Video discs (with all their perks) and Divx discs. Thrill seekers hate that kind of belt-andsuspenders technology! At least they can take comfort in the inability of Divx-

### **Some of the** most heart-pounding moments occur when we buy a new piece of A/V gear. How soon before it's obsolete?

dio discs, you'll have to buy a DVD-Audio player or a so-called DVD-Universal player — one that plays both DVD-Video and DVD-Audio discs.

Now, thrill seekers are very familiar with the scenario in which early-generation products don't match up with latergeneration products. In fact, when it comes to technology, it's like a law of nature. Cooler technology really does make the formerly cool obsolete. And because thrill seekers must always have the coolest, they are challenged by this obsolescence each time they whip out their plastic.

The interesting thing is that even a careful purchaser can experience this unique thrill because it is so engrained in technological evolution. For example, even if you wait until late this year to buy a DVD-Universal player, assuming one will be available, you will still face incompatibility. That's because the So-ny–Philips Super Audio CD is lurking out there. The SACD is very much like a DVD-Audio disc, but its audio data is encoded differently, using the proprietary

equipped players to play DVD-Audio discs.

Here's another aspect that I find interesting about A/V thrill seekers: the higher the cost, the bigger the thrill. Case in point: digital TV. This is a thrill seeker's dream come true. Imagine the excitement in hosting an HDTV block party next Super Bowl Sunday! Wow! The problem is that first-generation DTVs are half-baked; they lack a standardized way to connect to a digital cable box. Since over twothirds of U.S. households have cable well, oops!

In truth, I admire A/V thrill seekers. Without these early adopters willing to take a little risk, no new technology would ever succeed. It is their inclination to buy the newest products, and buy them more often, that makes it safe for coward-ly mainstream buyers. So I offer my hearty congratulations to you A/V thrill seekers! I salute your purchasing bravery! No matter what happens, you have my undying respect as I join you in marching forward, just one step behind you.

"When Velodyne announces a new subwoofer, the earth trembles—literally." Stereophile Guide to Home Theater, Fall 1997.

"The Velodyne subwoofer is one of those rare components I can recommend to almost anyone . . . I rank the quality, if not the magnitude, of this small California company's achievement up there with Dolby noise reduction and the compact disc." Audio, November 1987



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# test report



# Sony TA-E9000ES Dolby Digital/DTS Preamplifier

DAVID RANADA

ehind its handsome and mildmannered exterior, the Sony TA-E9000ES is simply seething with digital activity. It'll decode *three* types of multichannel signal — Dolby Digital, DTS, and MPEG — and perform all manner of ambience and spatial enhancement, even without surround speakers, all with the aid of a nifty interactive remote control. As if that weren't enough, the device has secret powers only some of which were coming to light as we went to press.

The heart of the preamp and one of the keys to its unusually good sound quality is a cluster of 32-bit digital signal processing (DSP) chips. One of these integrated circuits, a "floatingpoint" SHARC chip made by Analog Devices, can perform extremely complex audio calculations without running out of dynamic range. The SHARC chip is used for the preamp's three multichannel decoding modes. The resulting audio signals can have superior performance in such matters as distortion and noise, as demonstrated by our measurements (see "In the Lab," page 44).

Two more 32-bit DSP chips, made

### FAST FACTS

### **KEY FEATURES**

- Dolby Digital, DTS, MPEG, and Pro Logic decoding
- Multiple ambience-enhancement
   modes
- Virtual processing for surrounc effects withcut surround speakers
- Touch-screen remote control

Five digital inputs
 DIMENSIONS 17 inches wide, € inches high, 15<sup>1</sup>/<sub>4</sub> inches deep
 WEIGHT 28<sup>1</sup>/<sub>4</sub> pounds
 PRICE \$1,700
 MANUFACTURER Sony Electronics,

Dept. SR One Sony Dr., Park Ridge, NJ, 07653; phone, 800-222-7669; Web, www.sel.sony.com by Sony, are used for several ambienceenhancement modes, which usually work by generating artificial sound reflections fed to the front and surround speakers. But even if you don't have surround speakers, the preamp's DSP chips will generate multiple "virtual" surround speakers — or at least that is the claim. Several of the virtual modes also add ambience generation. A substantial portion of the manual is dedicated to the operation of the preamp's built-in three-band digital equalizer, which can separately adjust the response of every channel except the subwoofer. The equalizer's bass and treble controls use standard shelving functions, but the midrange control is parametric: you can adjust the width and the center frequency of the band it affects. (Just don't use the narrow band setting, which is so narrow as to produce really weird effects with music.)

In all, you can have five levels of DSP running simultaneously: surround decoding, virtual-speaker generation, equalization, ambience enhancement, and bass management with the bass crossover frequency variable between 40 and 200 Hz. No wonder three DSP chips are necessary!

Those chips are just the tip of a hightech iceberg. I could go on about the unusually wide dynamic range of the 1bit digital-to-analog converters (DACs),



### HIGH POINTS

Clean sound quality. Easily upgradable software. Very flexible bass management. Easy to use. Very good ambience enhancement.

### LOW POINTS

Rather tame virtual-speaker modes. A few remote-control lapses.

which are said to handle 24-bit/96-kHz data from certain DVD stereo sound-tracks. There's also the hybrid analog/ digital volume control, for accurately tracking channel balances, as well as the wide-bandwidth video-switching circuitry to discuss — if I only had the space.

The rear panel certainly doesn't have any space. It is fully stocked with hightech connections: five optical digital inputs, three of them duplicated with coaxial connections; an AC-3/RF input for Dolby Digital-capable laserdisc players; and full composite- and S-video connections for all six A/V inputs, which can include two VCRs. An external-processor loop is provided for video signals (for a titler or other video signal manipulation). For old time's sake, there's a moving-magnet phono input. Outputs include a single set of multichannel audio outputs as well as two sets of composite-/S-video monitor outputs. There's even a nine-pin computer RS-232c serial connector and a microphone input (labeled "analyzer"), neither of which are fully explained in the manual or mentioned in the product's color brochure. Tantalizing, to say the least.

Equally tantalizing was the preamp's really cool backlit touch-screen remote control. It arrived, without manual, separately from our preproduction sample of the TA-E9000ES. But even sans manual I was able to figure most of it out easily. In conjunction with remote commands stored in the preamp and downloaded via infrared link to the handset, the remote will let you command the main operating features of VCRs, laserdisc, CD, and DVD players, and a host of other components whether or not they are made by Sony. Of course, it provides full access to the preamp's own features and is by far the easiest way to operate them. I especially liked the remote's auxiliary jog dial, which quickly moves between options and sound-processing modes, and the

separate buttons for adjusting the preamp's volume setting.

For those whose fingers are too large to accurately hit some of the touchscreen controls, Sony has built a detachable pen-like stylus into the handset that you can use instead. It's a nice touch, but the pointer is so small that I give it no more than a week before it's lost in most homes. Also, signals are continually sent between the remote and the preamp, as well as from the remote to other components, so it is necessary to have both the preamp and the other controlled components in full infrared view of the remote simultaneously. This shouldn't be a problem in most systems, but if you want to locate the preamp very far away from the other components in your system, you may run into problems (the remote will beep in warning).

In case you misplace or damage the remote, the front-panel buttons and knobs will also easily operate every preamp function. One of the preamp's "hidden" powers (it's not documented in the preproduction manual I received) lies in the second knob from the left. Twist it while playing a digital audio source, and the front-panel display will tell you the type of multichannal signal being received (if any) and its channel format and bit rate. If the preamp is receiving a stereo digital signal, the display will show the audio sampling rate, the number of bits in each sample, the SCMS source code, and whether the bitstream requires de-emphasis. Totally cool — at least for those of us who want to know what's really going on.

Setup was quick and easy thanks to the remote's rapid menu-navigation abilities and the preamp's desirable half-decibel speaker-balancing steps. You can even optimize the virtualspeaker processing for where the virtual surround speakers are located (at the the sides or in the rear, at ear level or higher).

Since Sony makes such a big deal about the ambience processing of the TA-E9000ES in its promotional literature, it was the first thing I tried after hookup. I'm not generally a fan of adding ambience effects, even those as clean as the TA-E900ES's, to multichannel program material (in contrast to stereo music, which often requires such assistance for lifelike sound quality). Multichannel programs, movie soundtracks and music alike, already contain their producers' intended ambience effects. Adding more usually results in *worse* sound quality: less intellligible dialogue, clouded textures in music. The preamp's plain, unenhanced multichannel surround-decoding abilities are extremely good to begin with. Besides if I wanted a true movie-theater ambience in my listening room, the first thing I'd do is sprinkle stale popcorn all over the floor.

Nevertheless, the Sony's multichannel ambience effects are really quite good. That's because they are, for the most part, conservative and not exaggerated to produce a stunning showroom demonstration. Crucial to the processing's success with soundtracks was its lack of ambience processing on the center channel, which carries most of the dialogue in soundtracks. In those rare instances where dialogue is panned to one of the other channels, such as a scene with Sean Connery's dragon voice in Dragonheart, the Sony did produce inconsistent ambience effects in some modes. But this is inherent to the process, and at least with my favorite general-purpose mode, Cinema Studio A, the inconsistencies weren't nearly as annoying as with the comparatively overdone ambience processing offered in other components.

On acoustic music, such as classical and much jazz, the music-oriented ambience modes were also very good in fact, close to the best available (those come from Lexicon and Yamaha). The Opera and the less reverberant Stereo Movie settings, both good general-purpose modes, translated the excellentsounding Pappano/Alagna recording of Puccini's La Bohème (EMI 56120) out of Abbey Road Studio No. 1 where it was recorded and effectively placed it on stage. Richard Goode's sonically tasty series of Mozart piano-concerto recordings (Nonesuch) became all that more delectably lifelike with both the "large" and "small" Hall modes.

As usual, nonacoustical pop music was less well served by the ambience enhancement, often becoming a bit too distant and spacious for my taste with many recordings. Sometimes it was better served by the subtle effects of some of the virtual-speaker processing modes (the ones that don't also add ambience).

I used the word "subtle" deliberately, as the virtual-speaker modes often seemed to have little effect with twochannel material, and the effects they did produce depended greatly on the recording. This is in sharp contrast to the wild-and-woolly results one can get



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with such virtual surround processes as SRS and Spatializer. And, like all such processing, which utilizes acoustic cross-cancellation effects at your ears, you just about have to lock your head in a sweet spot in order for the virtual speakers to remain apparent. If I moved my head only a few inches to either side of the center line between the speakers, I lost the effect entirely. These modes are best suited for solo listening.

The virtual-speaker processing did produce some startlingly vivid effects with original multichannel material, such as the spectacular Dolby Digital soundtrack of Lost in Space (just listen to this movie — it's not worth watching). Here the Virtual Multi Rear and Virtual Multi Dimension modes helped give the illusion that more than two surround speakers were being used, generating a more theaterlike presentation, especially with normal monopole (not dipole) surround speakers. (Dipole surrounds were more effective in the nonvirtual modes.) The no-surround-speaker equivalents (Virtual Enhanced A/B and Virtual Semi-Multi Dimension) were, amazingly, almost as effective at this, but they were still no substitute for having actual surround speakers. I've heard even more impressive prototype demonstrations of surroundless surround systems, and this could be a fruitful area for the preamp's improvement.

I may eventually get my wish. Halfway through the testing process I received a package from Sony containing an RS-232 cable and a floppy disk. On the disc was a Windows program to upgrade virtually the entire operating software of the preamp. After connecting the lab computer to the preamp (so that's what the rear-panel RS-232 connector is for!), I ran the program, which worked flawlessly, and ended up with a clearly improved component.

The technical performance seemed unchanged, at least with the last-before-release software version I had installed. But what would have been several damning faults with the remote control had been entirely fixed. It still had trouble generating a full set of basic codes for some non-Sony equipment (including cueing and fast scanning with an older Yamaha CD player and a new Panasonic DVD player), but by then the point of the exercise had been forcefully made. This preamp is upgradable in a way unmatched by any other A/V component I've seen. No taking off the cover to delicately install a new memory chip, no hauling it in to

a dealer for insertion of additional costly circuit boards. I hope that future post-release upgrades — both from Sony and third-party software developers — will be easily downloadable from the Internet.

The TA-E9000ES obviously has a comparatively huge signal-processing memory — enough to hold three different surround-sound decoder programs simultaneously. Wouldn't it be neat to

replace the decoders that are relatively superfluous (MPEG, even DTS) with signal-processing programs that would be truly useful — like automatic speaker balancing and equalization, or click and pop removal for needle-in-groove discs? I can't wait to find out what Sony is cooking up for future software upgrades. That cryptic microphone input is still unused, and my mind seethes with possibilities.

### IN THE LAB

DOLBY DIGITAL (AC-3) PERFORMANCE All data obtained from Dolby Labs' AC-3 test DVD using dithered test signals, which set limits on measured distortion and noise. All channel-level controls and LFE attenuation set to 0. All speakers set to "large" except for subwoofer-output measurements. Reference input level is -20 dBFS' unless otherwise stated; reference output level is 200 millivolts. The resulting volume control setting was -17 dB. All are worst-case figures.

### Distortion at reference levels (THD+N, 1 kHz) right surround .....0.029% Noise (A-wtd) right surround .....-78.3 dB Excess noise (with signal) 16-bit (EN16) .....-78.3 dB Excess noise (with signal) 16-bit (EN16) .....+1.75 dB 18-bit (EN18) ....+9.49 dB Frequency response (20 Hz to 20 kHz) left front .....+0, -0.05 dB Channel imbalance (individual channels set at 0-dB gain) .....0.21-dB spread Subwoofer output frequency response 12 dB/octave rolloff above selected

frequency

High-pass filter frequency response 6 dB/octave rolloff below selected frequency

Maximum unclipped subwoofer output 9.1 volts

Subwoofer distortion (worst-case signal) output level set to -5 dB.....0.047%

### DTS PERFORMANCE

Test signals from DTS demo disc. These signals orignate in the analog domain and may limit measured performance. The reference input level was -16 dB; reference output level is the same as for Dolby Digital. Volume setting was -21 dB.

### **Distortion at reference levels**

(THD+N, 1 kHz) right front.....0.017%

Frequency response (20 Hz to 20 kHz) right surround .....+0.03, -0.04 dB

### STEREO PERFORMANCE, DIGITAL INPUTS

Reference input and output levels as well as volume-control setting were the same as for Dolby Digital. All test signals were dithered and of 16-bit resolution.

| Output level<br>(at reference settings)2 volts  |
|---|
| Distortion at reference levels<br>(THD+N, 1 kHz)<br>at 0 dBFS*0.0027%<br>at -20 dBFS0.024%      |
| Linearity error (at -90 dBFS)+0.25 dB   |
| Noise (A-wtd)74 dB  |
| Excess noise (with/without signal)<br>16-bit (EN16)+1.4/+1.4 dB<br>20-bit (EN20)+15.21/+15.2 dB |
| Noise modulation  |
| Frequency response<br>20 Hz to 20 kHz +0.09, -0.45 dB   |

\* decibels referred to digital full-scale

### TECH NOTES

Rarely do I measure (or hear) such clean performance from an A/V component as I did with the Sony TA-E900ES. Indicative of this behavior are the noise results for Dolby Digital signals. At normal volume settings, background noise in this mode was inaudible. In fact, the presence of better-than-16-bit DACs in the preamp encouraged me to take excess-noise measurements using Dolby Digital signals of 18-bit resolution, with impressive results. The usual results with these tests are at least 6 dB worse.

Background noise and distortion tests made through the digital inputs in stereo operation also show some of the preamp's capabilities with high-resolution digital signals. With signals of 16 to 24 bits resolution, the preamp's inherent noise levels bottomed out between 17 and 18 bits. Spectra indicated distortion performance substantially better than 20 bits. Our present test equipment doesn't generate signals at a 96-kHz sampling rate, unfortunately, nor could we test multichannel MPEG decoding.

The subwoofer output was also unusually clean, even with worst-case Dolby Digital test signals. Just set the subwoofer level control to -5 dB or lower, and it will never overload at the reference volume setting or lower. — D.R.

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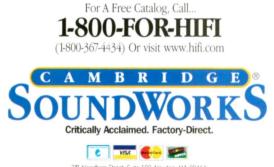
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# **test**report



# Mission 700 Series Home Theater Speakers

COREY GREENBERG

ission has long been one of England's largest speaker manufacturers. On this side of the pond, where the word "loo" is more commonly associated with Reed, the company's distinctly British hi-fi gear enjoys a lower profile. Mission's speakers generally have that classic British sound that you either love for its forgiving musicality or hate for its refusal to get down and bow-wow-wow-yippee-yo-yippee-yay. The tight though limited bass response, nicely open and musical midrange, and warm, slightly rolled-off highs add up to a sound that, to my ears, tilts more toward classical music and testosteronechallenged Euro pop than the rock, blues, and jazz I enjoy. But that hasn't stopped Mission speakers from finding favor with many hard-core audiophiles over the years. The company's Model 731 mini-monitor, in particular, has gone on to become a cult favorite of budgetminded audiophiles here in the U.S.

Now, with Starbucks making a play for the U.K., Mission's returning the serve with its 700 Series of budgetprice speakers designed with "an American sensibility for bass and dynamics," according to Howard Pleet, president of Mission North America. Many home theater owners are finding that as long as they plant a beefy, corn-fed subwoofer over in the corner, they can get away with using smaller, less obtrusive bookshelf-type speakers for the main channels and still rock the casbah. With that in mind, I asked Mission to assemble an affordable surround sound package based on the popular sub/sat format. For the front speakers, Mission sent a pair of Model 701 mini-monitors, each featuring a 6<sup>1</sup>/<sub>2</sub>-inch woofer and a 1-inch soft-dome tweeter. If you looked at the photo and wondered why we shot the speakers upside down, they're supposed to be that way -Mission claims that positioning the woofer above the tweeter improves imaging. The 701 sports a good pair of binding posts on its rear panel and, like the rest of the 700 Series, a black ash finish with an elegant and distinctly Sonus Faberesque faux-leather wrap on the front panel.

For the surround channels, Mission sent me a pair of Model 700 minispeakers. The 700 is a scaled-down version of the Model 701, with a smaller, 5<sup>1</sup>/<sub>4</sub>-inch woofer and two smaller-diameter bass ports instead of one big port. It's a good, economical choice for use as a surround speaker in a home theater system featuring any of the larger 700 Series speakers.

Mission's Model 70C2 center speaker marries two 5-inch woofers with the same 1-inch tweeter found in the Model 700 and 701 speakers. The cabinet is magnetically shielded to prevent the picture on your TV screen from turning purple.

The Model 70AS powered subwoofer features a ported 10-inch driver and a 100-watt amplifier. On the rear panel

| FAST F/                  | ACTS                        |                         |                          |                           |
|--------------------------|-----------------------------|-------------------------|--------------------------|---------------------------|
|                          | MODEL 701<br>(front)        | MOEEL 70C2<br>(center)  | MODEL 700<br>(surround)  | MODEL 70AS<br>(subwoofer) |
| TWEETER                  | 1-inch dome                 | 1-inch dome             | 1-inch dome              | -                         |
| WOOFER                   | 6 <sup>1</sup> /2-inch cone | two 5- nch cones        | 51/4-inch cone           | 10-inch cone              |
| ENCLOSURE                | ported                      | ported                  | dual ports               | ported                    |
| SIZE<br>(HxWxD)          | 18 x 85 x 12<br>inches      | 8 x 20 x 95/8<br>inches | 13¾ x 7½ x 10⅔<br>inches | 18 x 16½ x 16<br>inches   |
| FINISH                   | black ash<br>vinyl          | black ash<br>vinyl      | black ash<br>vinyl       | black ash<br>vinyl        |
| PRICE<br>(\$1,444 total) | \$375 a pair                | \$319                   | \$250 a pair             | \$500                     |

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### **test**report

### HIGH POINT

Much more detailed and extended treble than previous Mission speakers.

### LOW POINTS

The treble can sound a bit forward. Center speaker is a little brighter than the left/right front.

you'll find speaker-level inputs and outputs for hookup to an A/V receiver. Unlike the cheap spring-clip connectors found on many competing subs, the Mission sub uses gold-plated binding posts. It also has a stereo pair of linelevel inputs, also gold-plated, for use with an A/V surround preamp. Three rotary knobs control the sub's output level, phase (continuously variable), and crossover frequency. The solidly constructed 70AS isn't likely to dance across the room during serious lowbass workouts — it has four adjustable spiked feet that keep it solidly locked to the floor.

In a nice retro touch, all of Mission's 700 Series speakers except the 70AS feature white woofer cones. When I was just starting to get seriously into hifi in the late '70s, a speaker just wasn't a speaker unless it had a big, pulpy, lily-white woofer standing out like a sore thumb on the front of an otherwise dark wooden cabinet. Speakers like JBL's classic white-woofered Model 4312 meant solemn, serious business in the same way that the inclusion of Jim Brown in the cast of a blaxploitation film did.

I auditioned the 700 Series speakers in my reference system, which includes a Theta Casablanca surround preamp, a Bryston 9B five-channel 100-watt power amp, a Toshiba SD-3107 DVD player, and a Theta Data III laserdisc/CD transport. The center speaker sat atop a Pioneer Elite Pro big-screen TV, with the Model 701 front and 700 rear speakers raised 24 inches off the floor on stands.

Mission calls the 700 Series its "American-sounding" speakers, and I'll second that motion — as long as Mission's definition of "American" means an extended, detailed high end and an ability to play loud without severe distortion or even a smoked driver or two. I have to admit I've never been a fan of the classic "British" sound the muffled treble, anemic low end, and limited dynamic range of such British loudspeaker legends as the Rogers LS3/5A and Quad ESL. Even though the best of the breed, like the Quad, throw a lifelike, musical midrange, they sound so dull on top and limited in dynamic reserves that they just can't help but sound old-fashioned and tame when called upon to reproduce rock music and Dolby Digital movie soundtracks.

These new Missions, on the other hand, have less coloration than previous Mission speakers, including the Model 731. For starters, they actually have a high end — this system reproduced the treble range with a sparkling presence that gave it an open, upfront character about as traditionally British as a mustard-slathered hot dog on the Fourth of July. Fans of the classic British sound may consider the 700 Series speakers too bright, but they're much more suitable for home theater than past Missions I've auditioned. Favorite DVDs like Boogie Nights and Rollerball came across with all their recorded detail intact, and every line of dialogue clear and intelligible. Except for a bit of added treble wispiness from the Model 70C2 center speaker, the timbre match between the five Mission satellites was right on the money, making for a vivid, coherent sense of surround focus throughout the room.

Still, the Mission 700 Series system fell a bit short of the mark set by Paradigm's \$1,900 LCR-350/PDR-12 system, which has become my home theater speaker reference in this price range. In my comparisons, the Paradigm system scored in the areas of treble purity, midrange transparency, and deep bass extension, and it was able to play louder without strain than the Mission combo — for example, George Harrison's "Wah Wah" from the *All Things Must Pass* CD sounded more muscular and visceral played over the Paradigms.

That said, the 700 Series is a great improvement in all of these areas from past Mission speakers I've auditioned. The 70AS subwoofer, in particular, is as un-British a powered subwoofer as I've heard — that is to say, it's actually got some lead in its pencil. For some reason, even the most expensive British subs, with the lone exception of the serious butt-kickers from REL, have always sounded underwhelming to me. They seem to push a lot of air at you but don't really come together to make good, solid bass. Not the 70AS - its rumble was rich and satisfying, and tight and tuneful enough to do justice to music as well as movies. While it didn't quite plumb the depths of the infamous arc-light sound effects on the Apocalypse Now laserdisc - in truth, few \$500 subs can - it nevertheless sounded bigger and meatier than a 10inch driver and 100 watts usually sound in my listening room.

In aiming for a more typically American sound with the new 700 Series, Mission has come up with an affordably priced line of home theater loudspeakers that carry the family name into new waters. If you haven't heard a Mission speaker in a while, you're in for a treat.

### IN THE LAB

Mission's front and surround speakers produced the flattest results of any speakers we've tested since instituting our averaged "listening window" quasianechoic frequency-response measurements. Above 1 kHz, the Model 701 front speaker deviated from flatness by only ±1.8 dB and the Model 700 surround by ±2 dB, both figures representing unusually neutral sound quality. These results were obtained at listening angles that follow the manufacturer's recommendation not to aim the speakers at the prime listening position (they have a rising high end with such angling) but instead to aim them straight forward. The Model 70C2 center speaker measured less flat (±5.5 dB above 1 kHz) and suffered, as do all speakers with sideby-side woofers, from a large dip in the midrange response when heard from more than about 20 degrees horizontally off-axis.

The Model 70AS subwoofer could produce useful output at typical levels

### THE LAB

down to around 30 Hz. It had an unusually extended "high frequency" response that wasn't down by 3 dB until 170 Hz. It should be easier to get a flat subwooferto-satellite transition with the Mission 70AS than with other subwoofers that roll off lower down. — David Ranada

### SENSITIVITY

| (SPL at 1 meter, 2.83 volts input, 1 kHz) |
|---|
| Model 701 front                           |
| Model 70C2 center                         |
| Model 700 surround 87.5 dB                |
| IMPEDANCE (minimum/nominal)               |
| Model 701 front 4.5/8 ohms                |
| Model 70C2 center 6.8/8 ohms              |

### Model 700 surround ..... 4/8 ohms

### BASS OVERLOAD FREQUENCY

| (at 90/100 dB SPL)   |             |
|----------------------|-------------|
| Model 701 front      | none/63 Hz  |
| Model 70C2 center    | 50/80 Hz    |
| Model 700 surround   | . 80/100 Hz |
| Model 70AS subwoofer | none/50 Hz  |

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# test report



# NAD Model T770 Dolby Digital Receiver

DANIEL KUMIN

any of the latest-generation 5.1-channel A/V receivers are burdened by too many features, too many controls, and too many menus, displays, and readouts for user comfort. NAD, in contrast, has stripped the new T770 surround sound receiver to its essence: five powered channels rated at 70 watts each, Dolby Digital and digital-domain Pro Logic decoding, only one additional surround mode, and a rigorously limited collection of buttons and controls both on the faceplate and on the supplied system remote control.

This back-to-basics approach — an NAD tradition — is immediately obvious from the front panel, which contains just three modest sets of pushbuttons, sensibly grouped by function, plus tone and volume knobs. A wide display window lights up with blue readouts of source and mode data, but all except

### FAST FACTS

RATED POWER surround mode, 70 W x 5, all channels driven, into 8 ohms from 20 Hz to 20 kHz with no more than 0.08% THD; stereo, 80 W x 2 KEY FEATURES

- Dolby Digital, digital-domain Pro Logic decoding
- "impedance-sensing" power-amplifier circuitry
- 6-channel analog input for use with external 5.1-channel decoder

one general-purpose ambience mode
 DIMENSIONS 17% inches wide, 6¼
 inches high, 14 inches deep
 WEIGHT 37½ pounds
 PRICE \$1,699

MANUFACTURER NAD U.S.A., Dept. SR, 1600 Providence Hwy., Suite 286, Walpole, MA 02081; phone, 508-660-8300; Web, www.nadelectronics.com the selected input are really too small to be visible from more than a few feet. Labeling is white on NAD's hallmark dark-gray panel, but the relatively large type and bright-white ink make legibility a good bit better than the norm. Overall, I found the appearance quite attractive and the controls easy to use.

Around back, the T770 supplies a conventional set of inputs and outputs arrayed around a large vent for the internal fan. Interestingly, the fan is designed to come on only during highvolume surround-mode playback, so the odds of your hearing it are pretty slim. The receiver sports five A/V inputs, all of which support S-video as well as composite-video (RCA-jack) connections - even the front-panel Video 5 convenience input can handle S-video. Video 1, Video 2, and two of the four additional, audio-only inputs are also equipped with outputs for a cassette deck, VCR, or other recorder.

There's a set of six RCA jacks for 5.1-channel input from an outboard DTS or other non-Dolby Digital surround decoder, selectable either from the front panel or the remote control, as well as pre-out jacks for each of the six channels. Digital inputs include one optical, one coaxial, and one AC-3/RF for a laserdisc player. This should prove

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adequate for most systems today, but if you have a MiniDisc recorder or a satellite receiver with a digital output in addition to a DVD/CD player, it will seem far less so. Add future set-top digital cable boxes and next-generation video games to the devices competing for scarce data ports, and three digital inputs (effectively only two, really) simply will not suffice. A multiroom stereo audio output is endowed with independent source and volume control for twozone installations and NAD-Link jacks for interconnecting another NAD system - providing unified command from one or both zones.

The supplied remote control operates all of the T770's functions, of course, and incorporates basic-function control of NAD CD players and cassette decks. It is not preprogrammed or "teachable," however, so if you have a mixed-brand system you will find it less useful. The handset is quite solidly made, and I found the T770 itself to be nicely finished and well built, though not unusually so given its hefty price.

I set up the NAD receiver with my standard five-speaker array, which includes a full-range front left/right pair of average sensitivity and high-performance center and surround speakers. As always, I left out a subwoofer at the start so as to drive the T770's amplifiers as vigorously as possible. Speaker connection was eased by average-weight banana-type jacks all around (though U.S. dual-banana plugs don't fit).

NAD spotlights the T770's new Impedance Sensing Circuit amplifier design, which permits it to deliver clean, dynamic power, with safe current peaks of 45 amperes, into a wide variety of real-world speaker loads without straining the heat-sink capacity permitted by its sensibly sized chassis. I did not use speakers of unusually low impedance, but the T770 did produce punchy, smooth, impressively extended sound at levels perceptibly higher than its modest power ratings might have led me to expect. Certainly, the T770 gave up little if anything to most "100 watts x 5" receivers I've encountered either in dynamic, high-level two-channel use or in the five-channel surround modes.

The T770's surround performance was exemplary in most respects. It employs the Motorola 56000-family digital signal procesing (DSP) chip set for all its surround modes, and the designers appear to have done their circuitimplementation homework. The receiver was impressively quiet in all modes,



never vielding noise audible from the listening position at any conceivable real-life volume setting. Dolby Pro Logic (DPL) tracking was superb, with no audible channel leakage, and Dolby Digital sound was all I could expect: precise, dynamic, balanced, and always impressively intelligible. Even at true opera-house levels, the Don Giovanni scene from the Amadeus DVD (Warner Home Video) sounded deep, ambient, and defined — in short, spine-tingling. NAD says that the T770 employs highperformance 18-bit-resolution sigma/ delta digital-to-analog converters for all channels (and analog-to-digital converters for surround play of analog sources), which could well contribute to its fine sound. Whatever its source, musical detail and depth were amply evident both on two-channel CDs and on the few multichannel music DVDs currently available, such as Delos's *DVD Music Breakthrough* (DV-7002), which sounded fabulous.

NAD complements the T770's two Dolby modes with a single ambienceenhancement mode, dubbed EARS, for Enhanced Ambience Recovery System (a bit forced in my book). The process appears to send a full-band stereo difference signal (L - R) to both surround speakers and a dollop of unsteered mono to the center speaker.

EARS is said to add natural spaciousness to stereo sources, and in many cases I found this to be true. It often worked very well with natural-

### IN THE LAB

DOLBY DIGITAL (AC-3) PERFORMANCE All data obtained from Dolby Labs AC-3 test DVD using dithered test signals, which set limits on measured distortion and noise. All channel-level controls and LFE attenuation set to 0. All speakers set to "large." Reference input level is -20 dBFS" unless otherwise stated; reference output level is 1 watt into the specified impedance. All are worst-case figures.

Output at clipping (1 kHz, 8/4 ohms) one channel driven (front) .......100/108 W one channel driven (surround)....101/108 W five channels driven (8 ohms) ...about 67 W

Distortion at 1 watt (THD+N, 1 kHz) 8 and 4 ohms .....0.1%

Noise (A-wtd) left surround .....-70 dB

Excess noise (with signal) 16-bit (EN16) .....+2.2 dB

Frequency response (left surround) 20 Hz to 20 kHz +0.1, -0.2 dB

Channel imbalance (individual channels set at 0-dB gain)......0.3 dB spread or less

Subwoofer output frequency response about 12 dB/octave rolloff above 68 Hz

High-pass filter frequency response 12 dB/octave rolloff below 78 Hz

Maximum unclipped subwoofer output 7.75 volts

6 kHz.....±10 dB Frequency response

20 Hz to 20 kHz +0, -0.5 dB

### TUNER PERFORMANCE

All figures except frequency response are for FM only.

| Sensitivity (50-dB quieting)<br>mono<br>stereo       |         |
|--|---------|
| Capture ratio (at 65 dBf)                            | 1.5 dB  |
| AM rejection   | 58.4 dB |
| Selectivity<br>alternate-channel<br>adjacent-channel |         |
| Noise (at 65 dBf)<br>mono<br>stereo                  |         |

Frequency response

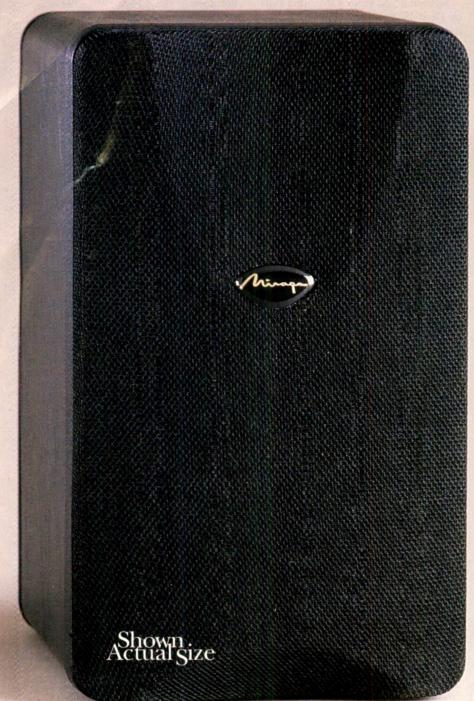
FM ......20 Hz to 15 kHz +0.09, -0.87 dB AM ......67 Hz to 3.09 kHz +0.3, -6 dB

\* decibels referred to digital full scale \*\* all six channels driven by 30 Hz at 0 dBFS

### **TECH NOTES**

Driving all five channels to clipping induced about a 5-percent AC power-line sag, from 120 volts to 114 volts, but this is typical for real-world home AC power supplies. Tone-control measurements are given at 40 Hz and 6 kHz rather than our usual 100 Hz and 10 kHz because, unlike typical receiver tone controls, the T770's bass control is confined to the deep bass and its treble control shelves over a wide treble region. The tuner's FM selectivity was rather poor, but the noise was very low, especially considering the so-so sensitivity.

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### **test**report

### HIGH POINTS

Excellent sound. Simple, easy layout, features, menus. Useful EARS mode for ambience enhancement. Superior tone controls.

### LOW POINTS

Only two digital inputs (plus AC-3/RF). No channel-level memories. Some bass-management limitations. Expensive.

acoustic recordings. I was impressed by the mode's ability to liven up the many good-but-unremarkable recordings that populate my collection. A favorite old Brahms CD by the Cantilena Piano Quartet (Arabesque Z6553) sounded notably deeper and more spatially detailed with EARS engaged. On this and many other chamber and orchestral CDs, I found the NAD processing to be quite benign with respect to timbre and spatially very attractive. It wasn't perfectly transparent, but then I've yet to find any ambience-enhancement mode that is.

EARS was less effective with typical studio-made pop recordings where separate tracks for each performer are mixed down to stereo, such as James Taylor's *Hourglass* (Columbia), which often sounded somewhat "flat." (The same is frequently true when such productions are played through a Pro Logic decoder, too.)

I'd have felt even more sanguine toward NAD's one-size-fits-all surround mode if the T770 provided a workable way to adjust relative channel levels on a routine basis. It doesn't, for EARS or either Dolby surround mode. You have to plod through the menu system and run the circulating-noise DPL calibration routine. Nor is there any way to store different relative channel levels by source, mode, or preset. That's too bad, because I frequently preferred EARS with the surrounds set 1 or 2 dB lower than "stock," and with all systems I use I routinely tweak the Pro Logic centerand surround-channel levels by a decibel or two from program to program. But making such adjustments was often too much trouble with the NAD T770.

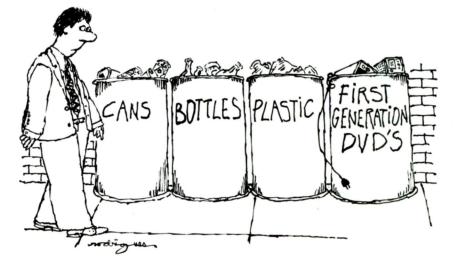
I did, however, discover a setup restriction that *could* affect some systems. The T770's bass-management includes only center (small/large/none), surround (yes/no), and subwoofer (yes/ no) options. With surround set to "yes" and subwoofer set to "no," bass is redirected to the main left/right speakers, which are presumably best able to reproduce it. That's all well and good except that it works only in the Dolby Digital mode. In the DPL or EARS modes, if you set the sub option to "no," the surround channels play fullrange, willy-nilly, and the surroundchannel bass is not sent to the left/right outputs.

So even if you wanted to exploit Dolby Digital's full-range surround potential with large surround speakers, it would do you no good with the T770, since in the digital mode the surround signals always cross over to the subwoofer output (or to the front speakers, if you have no sub): there is no "large" surround option. Conversely, it's possible that stereo programs with significant low-frequency content could suffer a slight loss of bass weight when played in the DPL or EARS modes if your surround speakers - like mine and most others - have limited bass response. However, Dolby Surroundencoded CDs and tapes almost never have surround-channel bass content. and these sounded outstanding played through the NAD's Pro Logic decoder.

The T770's tuner sounded just a bit better than usual with strong FM signals, delivering musical and dynamic sound on the best programs — few and far between, these days. But it rated no better than average at extracting weak or distant broadcasts. AM reception was barely better than average. The T770 offers seek tuning in FM only, manual tuning in both, and memory presets for 30 stations.

Along with its fine surround circuits and excellent amplifiers, I found a number of things to like about the NAD T770. The on-screen display's restriction to just three "levels" makes it unusually navigable, and the remote's spacious layout gives it an easy feel. Placing the mute button way up top, far from the volume controls, is hardly optimal, though. The backward array of input buttons - from left to right: Video 5, 4, 3, 2, 1 - had me going, too. (The NAD design center is in London, and years of driving on the wrong side of the road have obviously warped the designers.) The receiver's remote volume control responds very quickly at the low ("soft") end of its scale but slows progressively as you change volume at higher settings, a nice touch. I also liked that it's calibrated so its 12 o'clock setting reads "0 dB" and, in a typical room, corresponds to a realistic concert level with well-recorded orchestral or chamber CDs played on average-sensitivity speakers or cinemalike levels from DVD movies. Finally, the T770's tone controls buck current trends by confining bass action to the truebass-only region, reducing unwanted (by me, anyway) midrange effects, and by "shelving" treble action lower than usual; both engender more effective program equalization.

The NAD T770 is one A/V receiver that should prove of interest to those who spend as much time listening to serious music as to waching films and who wish to avoid as much complication as possible. On paper, the T770 obviously doesn't win any "watts-perdollar" contests. And it would be disingenuous to ignore that several competitors offer similar power and features — on paper — for a good deal less. On paper. Serious listeners, however, as well as those with a "Zen" for simplicity, may well choose to disregard the paper and decide instead with ears, eyes, and hands trained instead on the thing itself.





**test**report



# Denon DVD-5000 THX-Certified DVD Player

KEN C. POHLMANN

he worth of a diamond can be determined by its weight in carats. Five hundred ounces of gold is much more valuable than five ounces. A heavyweight champion should have no problem handling a welterweight. And, airbags notwithstanding, if a 5-ton truck crashes into a sports car ....

Without a doubt, for a lot of things, weight *does* matter. How about audio/ video gear? Although the quality of A/V components is not strictly a question of mass, the Denon DVD-5000's hefty 36 pounds suggests that it doesn't skimp on goodies. In a world populated by lightweight DVD players, and one in which you could even build a damn good player that rests comfortably in your palm, a 36-pounder must be something special, right?

One thing is certain: the DVD-5000's construction is robustly solid. Its heavy-gauge copper-plated metal chassis is "bulletproof," as are its massive power transformers. In a contest between an atom bomb and this player, the bomb would lose. Literally building on its massive foundation, the player's front panel has the look and feel of high-end electronics. It eschews gaudy displays and excessive buttons to strike a satisfy-

ingly spartan pose. You'll find only the essential controls, and the few buttons and knobs have a silky-smooth feel.

There are a number of subtle touches. For example, after calmly waiting in the stop mode for 30 minutes, the player courteously switches itself to its power-off/standby mode. Nice. The display is understated. My only qualm: although the blue fluorescent look is clean, it's reminiscent of the display

### FAST FACTS

### **KEY FEATURES**

- Coaxial and optical digital inputs and outputs
- Component-video output
- Two S-video and two compositevideo outputs
- HDCD decoding
- 96-kHz/24-bit audio D/A converters

• Backlit remote control DIMENSIONS 17 inches wide, 51/4 inches high, 14% inches deep WEIGHT 361/4 pounds

### **PRICE** \$2,500

MANUFACTURER Denon America, Dept. SR, 222 New Rd., Parsippany, NJ 07054; phone, 973-575-7810; Web, www.del.denon.com used everywhere on lower-quality components. A more distinctive display would have been welcome. Another small gripe: the disc drawer is made of flimsy plastic. At this price, I'd expect a sturdier tray. Negative nuances aside, this is one impressive-looking player.

Of course, not only is beauty in the eye of the beholder, it is also skin deep. The more interesting aspects of the DVD-5000 lie inside, where you'll find a powerful array of signal-processing circuitry, including Denon's proprietary Alpha 24-bit digital filter, a separate digital filter and decoder for CDs coded with HDCD (High Definition Compatible Digital), and a set of topflight Burr-Brown digital-to-analog converters (DACs) providing 24-bit resolution and able to handle sampling frequencies up to 96 kHz. Moreover, the analog outputs feature a differential-mode configuration to further reduce noise. Clearly, the Denon engineers didn't skimp on the electronic design.

As if proof were really needed, the DVD-5000 proudly carries the THX Ultra logo, showing that it is certified by THX to meet its highest standards for video performance, MPEG-2 video decoding, audio performance, and userinterface design. Performance parameters such as picture distortion, color clarity, and motion artifacts were subjected to certification testing at THX headquarters. Moreover, the objective benchmark tests were supplemented by subjective evaluations of the picture, sound, and ease of operation. All in all, this player packs in all the high-end perks you'd want in a DVD player.

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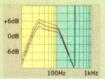
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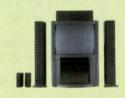
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The DVD-5000 reproduced the murky nuances of *Seven* (New Line) with near-cinematic quality.

panel reveals even more niceties. In particular, you'll find an optical and a coaxial digital input. Using these connectors (and a front-panel source-selector switch), you can plug in two external devices and run them through the Alpha filter or HDCD filter/decoder and the Burr-Brown DACs. For example, the bitstream from a CD player with an adequate transport but weak electronics could benefit from this feature. The rear panel also provides fixedand variable-level analog outputs, a coaxial and an optical digital output, two composite-video outputs, two Svideo outputs, and one set of component-video outputs. There are also control-bus in/outs. Can you think of anything missing? I can't.

Like most DVD players, this one moves front-panel complexity to the fingertip-accessible remote control. The remote's 39 buttons duplicate all the primary controls and provide specialized operating controls and access to and control of the on-screen menus. A side-mounted button lets you backlight the remote's 17 translucent buttons (for night viewing), and the lights even stay lit for 5 seconds after you release the button. Excellent!

It was with great anticipation that I hoisted the DVD-5000 into my electronics stack (being careful to lift with the legs, not the back). I started my evaluation with the music side of the equation. HDCD is a mature technology that has met with lavish praise as well as some skepticism. CDs encoded with HDCD are decoded by the hardware circuitry in a way that is said to reduce distortion and improve dynamic clarity and soundstage. After spending a considerable amount of time auditioning HDCD discs and hardware, I remain only mildly impressed by the processing.

Certainly a number of HDCD discs sounded absolutely terrific in this DVD

### test report

player (I particularly enjoyed Pat Benatar's *Innamorata* and Trisha Yearwood's *Songbook*). However, there was no awesome improvement in fidelity beyond what careful recording and mastering technique can impart. Really good recordings sound really good without HD-CD, and bad recordings still sound bad with it. In other words, against larger forces, its benefit is small. It's my opinion that HDCD was an interesting technology a few

years ago when designers were struggling to wring the utmost fidelity from the CD standard. But with the advent of DVD-Video and the imminence of DVD-Audio, the role of the playback electronics in terms of sound quality will recede, and the recording-studio side of the equation will dominate the quality of what we ultimately hear from a recording.

While the HDCD circuitry in the DVD-5000 will be welcomed by some critical listeners, I suspect that most others will be more impressed by excel-

lent DVD-Video music recordings such as those from Chesky. I enjoyed a number of new Chesky releases, including Sex Without Bodies by the jazz group Dave's True Story. These are wonderful recordings whose sound bursts from the speakers, providing a sense of realism exceeding that of many CDs. I suspect that the musical content above 20 kHz is tiny, but everything in the audible range sure sounded great. The 96/24 specs on these discs are a wonderful harbinger of what DVD-Audio will bring, and the DVD-5000 handled them beautifully. It's worth noting that, like other DVD-Video players, the DVD-5000 downconverts the 96-kHz audio signal to 48 kHz for digital output. Moving to still farther corners of my collection, I was disappointed to find that it could not play back CD-R discs, only CD-RWs.

Next, I turned my attention to movies. As you might expect, the DVD-5000 provides a plethora of perks, such as letting you select the soundtrack and subtitle languages or alternative camera angles (when these are encoded on the disc). You'll also find a marker function

### IN THE LAB

### **DVD VIDEO PERFORMANCE**

Measurements made from a variety of DVD test discs through the player's composite-video outputs.

| Setup level7.5 IRE*    |  |
|------------------------|--|
| Differential gain1 IRE |  |
| Differential phase1°   |  |

### Horizontal luminance frequency

| resp | oonse (re level at 1 Mhz) |         |
|------|---------------------------|---------|
| at 4 | MHz                       | 0.34 dB |
| at 5 | MHz                       | 1.05 dB |
| at 6 | MHz                       | 6.90 dB |
|      |                           |         |

Equivalent on-screen resolution 480 lines

### **CD AUDIO PERFORMANCE**

All measurements made from *Stereo Review's* test CD-RW through the player's fixed-level outputs. All signals contained dither, which sets theoretical limits on noise and distortion performance.

Maximum output level ......1.92 volts

### Frequency response 20 Hz to 20 kHz +0, -0.07 dB

### Noise

(A-wtd, re -20-dBFS\*\* input) .....-76.1 dB

### Excess noise (without/with signal) 16-bit (EN16) .....-0.25/+0.25 dB quasi-20-bit (EN20) ....+2.21/+3 dB

\* an IRE is a standardized unit of contrast \*\* decibels referred to digital full-scale 
 Distortion (THD+N, 1 kHz)

 at 0 dBFS
 .0.0019%

 at -20 dBFS
 .0.018%

 Noise modulation
 .0.7 dB

 Linearity error (at 499 Hz)
 .0.15 dB

 Defect tracking
 (Pierre Verany disc)
 .1,000 µm

### TECH NOTES

Nearly every audio and video

measurement I made on this DVD player showed performance ranging from unusually good to superb. Excess noise with quasi-20-bit signals (EN20) was by several decibels the best I've encountered to date, indicating that the player will give the best possible playback quality with any "20-bit" CDs. Distortion performance was close to theoretical perfection, and the noise level was actually lower than the theoretical limit of -75.7 dB. I attribute the latter result to the slightly too-small leastsignificant bit (LSB), which is also responsible for the tiny linearity error. (The distortion, noise, linearity, and excessnoise measurements are interrelated.)

On the video side, the player showed very fine performance. Its smoothly rolling off video frequency response didn't have any of the lower-frequency "peaking" I've noticed recently on other players, which can be responsible for an artifically "punchy" image quality. — David Ranada

to store up to five locations on a disc for quick access, an A-B looping function, chapter and title repeat, and a way to disable playback of a DVD to block playback by children or nosy neighbors. All of this and more is handled through on-screen menus that are relatively easy to navigate once you learn the basic iconic visual design and remember which buttons to push for which operations (some of the design choices for the menus are not particularly intuitive).

Like many other high-end DVD-Video players, the DVD-5000 uses 10-bit DACs to convert the 8-bit video signal to an analog output. To test its picture quality, I cherry-picked scenes from several movies. For example, the edgy thriller Seven (winner of the coveted Pohlmann Award for Best Opening Credits) includes many darkly lit scenes that can be tough to reproduce. The DVD-5000 provided an absolutely clean and crisp picture that was free of processing artifacts. Moreover, the picture properly reproduced all the murky and shadowy nuances of this film with nearcinematic quality.

Some players have a problem with reverse playback (MPEG-2 video encoding is inherently forward-moving). The DVD-5000 handled this quite well, providing smooth multispeed scans at all five forward/reverse speeds. Interestingly, at the first forward high speed, the player provides an audio output; although the soundtrack skips as it moves forward, it is very listenable, in part be-

### HIGH POINTS

Robust, solid construction. THX Ultra certification. Full variety of inputs and outputs. Topnotch audio and video performance. Good user interface.

### LOW POINTS Cannot play CD-R discs. Expensive.

cause it is pitch-shifted to sound like normal speed.

Throughout *Seven* and the other movies, the surround sound reproduction was topnotch through my reference Denon receiver, using either the coaxial or optical output from the DVD-5000. A quirk that I hope is limited to my review model: the disc transport made a very audible high-speed whirring noise when spinning DVDs.

The DVD-5000 is not Denon's first DVD player, but it is certainly its most impressive. Only a generation or two after the format's launch, wisely building on lessons learned from the CD era, DVD hardware has already reached a high level of sophistication. If you are looking for the best of the best, the Denon DVD-5000 will not fail to satisfy. It proves that high-end video and audio really can coexist in one chassis. Its picture sparkles brighter than any gemstone, and its sound is more mouthwatering than any sirloin. At \$70 a pound, it's worth every ounce. □



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# **test**report



# Monsoon MM-1000 Multimedia Speakers

TOM NOUSAINE

hat human pursuit other than audio uses the word "flat" to mean "good"? Nobody wants flat beer or flat tires. People use "flat" to describe the bland, the humdrum, or the monotonous.

But with loudspeakers we *love* flat. Flat frequency response is good — the flatter the better! More important, enthusiasts have always loved flat-shaped speakers. Large, sexy, flat electrostatic and planar-magnetic speakers have long been desirable audio art, and now new flat-panel technologies have been piquing the interests of audiophiles.

Unfortunately, these exotic speakers have always been plagued with problems. We love the shape, but their imposing size, poor sensitivity, and propensity to suck large quantities of flat green paper out of our wallets have limited their overall appeal. Now, however, Monsoon — better known as a car stereo brand — is bringing flat planarmagnetic speaker technology to multimedia applications at the affordable price of \$229.

The MM-1000 three-piece speaker

system includes a pair of planar-magnetic desktop satellites and a bass module. The bass module's enclosure is ported and contains all of the system's electronics, including a pair of  $12^{1/2}$ watt amplifiers for the satellites, a 25watt amp for the resident woofer, and a crossover specified at 18 dB per octave at 200 Hz. System frequency response is rated as 50 Hz to 20 kHz ±5 dB in a "workstation environment."

### FAST FACTS

DRIVER COMPLEMENT 4 x 8-inch planar-magnetic (satellites); 5¼-inch cone woofer RATED POWER 12½ watts each for satellites, 25 watts for bass module DIMENSIONS (HxWxD) satellite (including base), 9 x 4¾ x 5½ inches; bass module, 11 x 10 x 11 inches FINISH charcoal-gray PRICE \$229 MANUFACTURER Monsoon, Dept. SR, 47683 Avante Dr., Wixom, MI 48393; phone, 248-374-2200; Web, www.monsoonpower.com Planar-magnetic speakers can be made flat compared with a cone speaker because they use a membrane instead of a cone, small bar magnets instead of doughnut-shaped ring magnets, and a "voice coil" that is etched onto the membrane instead of wound around a former at the throat of the cone. Because of its shape and overall length, a cone speaker needs elastic suspensions at the outer edge and near the apex of the cone to keep everything lined up. The membrane of a planar-magnetic speaker is fastened only at its perimeter.

All else being equal, the basic advantages of a planar speaker are more consistent sound propagation over its operating range and, for use at a computer, a dipolar (figure-8) dispersion pattern with nulls directly to the speaker's sides. Each MM-1000 satellite attaches to a stand that angles the panel up toward the listener's ears. The bottom edge of the speaker is positioned near the desktop so that its forward radiation pattern merges as seamlessly as possible with the acoustic image reflected from the desktop.

Dipoles, of course, radiate sound to the rear as well as the front of the speaker. According to Monsoon, when the satellites are placed at least a foot from a wall behind them, the reflection will add spaciousness to the sound, but because of its delay, it will not mar the stereo image. Since these boxless speakers don't put out much bass, the crossover to the bass module had to be set at 200 Hz, which means that you'll want to keep it close to the satellites to insure a cohesive sound.

The MM-1000 comes with everything needed to install and use the system, including wires and cables. The bass module's inputs and outputs are located along the top edge of its rear panel. Connections include two minijack inputs (one cable is supplied), an input for a wired, mouse-shaped remote volume/mute control (not shown in photo), a jack for the "brick"-type AC power supply that's in line with the power cord, and spring clips for the speaker outputs. Speaker wires are permanently affixed to the satellites, which means you have to be careful not to vank them out.

Mounted on the front edge of the bass module is a volume knob (it's disabled when the remote volume control is connected), a bass-level control, and a Punch button — press it and you get a 2-dB bass boost below 100 Hz — that's intended primarily for game playing. The bass control has a generous 24dB range of adjustment, and I found the 2 o'clock setting a perfect match with the satellites. Hitting the Punch button added a little body to the overall sound, without obscuring the midrange. Because the button is on the bass module, I suspect most users will press it at one time or another and then forget to turn it off.

For my listening evaluations, I positioned the speakers on my desk to either side of the computer monitor and put the bass module under the desk. I used a variety of music and 3-D test tracks, ranging from Duke Ellington's "Take the A-Train" (*Digital Duke*, on GRP) to the popular Delos test CD Surround Spectacular.

The first thing I noticed about the MM-1000 was a pleasingly smooth sound with no obvious coloration, especially on vocals. After extended listening I found that male vocals sometimes had a trace of huskiness, which, while quite pleasant, isn't really accurate. Piano recordings, which are a difficult test for any speaker, sounded smooth and clean, too.

The system's sense of spaciousness was especially appealing. Sound got up and out of the speakers. Vocals appeared to come from the screen, and the overall image was not nailed to the desk surface as it can be with lesser multimedia systems. The apparent size

### IN THE LAB

### Frequency response 55 Hz to 12.5 kHz ±3.5 dB

Low-frequency extension 50 Hz with less than 10% distortion

Maximum output with program material ......105 dB SPL

Frequency response measured with the MM-1000 set up on a flat, 24 x 30-inch tabletop was remarkably smooth and flat up to 12.5 kHz, with a falling output above that frequency. The primary deviation was a smallish dip just below 200 Hz where the bass module and satellites don't quite meet. Remeasuring at a real computer workstation with a monitor, tower computer, and real desktop clutter produced nearly the same tolerance, verifying that the system's directionality is as restricted as it is intended to be.

Dynamics were also excellent. The system delivered 90 dB sound-pressure level (SPL) at 50 Hz with low distortion (less than 10 percent), and I was able to register 105 dB SPL at my ears using a particularly aggressive big-band recording. — *T.N.*  HIGH POINTS Excellent sound quality. Great dynamics. High-tech styling. Remote volume/mute control. Affordable price.

### LOW POINT In-line "brick" power supply.

of the image was also substantially larger than with typical multimedia speakers.

Soundstage width extended to just beyond the edge of the speakers with two-channel music, but the ambient field was relatively large and natural sounding. Center images, while stable, were somewhat vague and more diffuse than with a home theater setup.

The performance with computer software having 3-D soundtracks was excellent by multimedia standards, but not, of course, by the standard of a reference multichannel system. Although the MM-1000 produced a very good sense of spaciousness, sounds were never placed exactly as they would be in a surround-sound system with multiple speakers. But without an immediate reference for comparison, you'd probably think the Monsoon system provided an exceptional degree of realism. In short, it sounded impressive, perhaps the best speaker system that I've tested for multimedia applications. With the right 3-D software, it blows the pants off ordinary two-channel stereo in terms of spatial qualities.

The dynamics of the MM-1000 betray the car stereo heritage of the brand name. The system has enough kick and punch to shore up most pop music and is robust enough to laugh off the crashes and bangs of game soundtracks.

Naturally the 50-Hz bass limit prevents the system from delivering the full rumble of a good organ recording, but with pop, rock, jazz, and most orchestral music it will deliver enough oomph to satisfy even ardent enthusiasts.

In sum, the Monsoon MM-1000 is a three-piece speaker system with excellent timbre, imaging, and dynamics that doesn't have to be tied to a computer. Since it has its own built-in power, all you have to do is add a CD player or other source and you've got a great little music system. The MM-1000's flatpanel technology and styling are just frosting on a terrific-sounding cake. It's flat all right — flat-out good.

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# Cambridge SoundWorks Model 88

### The world's "best-sounding table radio"?



RECEIVER manufacturers boast about how many watts their products can deliver and how many features they offer. But when's the last time you saw one that claimed better than average tuner performance? Doesn't anyone care about radio reception anymore?

One person who has always had a love of radio is Henry Kloss, and he has a long, respected history of designing some of the best-performing radios in the business, starting with the KLH Model Eight back in the early 1960s. His latest, the Cambridge SoundWorks Model 88 (\$199), continues his tradition of making table radios that not only perform well but sound good. Is it "the best-sounding table radio in the world," as Cambridge claims? It just might be — at least it's the best I've heard.

The Model 88 is 14 inches wide, 4<sup>3</sup>/<sub>4</sub> inches high, and 8 inches deep. Its only cooling vent is on the front panel, which allows for great mounting flexibility. Two-thirds of its cabinet is taken up by a powered subwoofer in a bass-reflex sub-enclosure (its vent is also on the front).

Two other amplifiers power the 4-inch left and right main speakers.

The radio's front panel is clean, with a total of 19 pushbuttons. They're easy to use because all of them perform a single function (except the off button, which also engages the sleep mode when held down). They're labeled legibly and spaced for easy operation even by large, clumsy fingers. A tiny remote control supplied with the radio essentially duplicates the front panel's buttons.

The rear panel has an F-connector for an antenna, a set of RCA jacks for the CD input, a stereo minijack for the auxiliary input, and a DC input that allows the radio to be powered from a 12- to 16-volt source. There's also a set-and-forget subwoofer level control that lets you make the radio as boomy as you want — or achieve a very balanced, natural sound.

It seemed strange to me at first that the Model 88 doesn't contain a clock, but Kloss told me he deliberately omitted one to avoid "unnecessary complexity." Besides, he says, a clock belongs on a nightstand, while a radio belongs where it will sound best — which is almost never on the nightstand. (Cambridge Sound-Works is planning to offer an alarm clock/ infrared controller to turn the radio on automatically for between \$30 and \$40.)

Performance on the AM band will probably please casual listeners, but radio enthusiasts will be disappointed. AM sound was surprisingly good; the tuner's wide bandwith coaxed the most out of good AM signals. Interstation noise was practically nonexistent, which seemed almost eerie for AM, because the Model 88 is designed to deliberately reduce its audio gain when receiving weak signals. The circuitry acted too aggressively, however. When I had the radio about 35 miles east of New York City, many stations I would expect to hear on the cheapest portable radio were all but inaudible because of the Model 88's attempt to reduce the "noise."

FM performance, on the other hand, was very good. Kloss eschewed the offthe-shelf tuner chips used so commonly in underperforming receivers and instead went for a discrete-component design. Even without an external antenna, the tuner performed fine on local stations. Adding a dipole proved that the Model 88 could easily outperform most of today's receivers in FM reception.

On the FM band, the radio always defaults to stereo, but the stereo-blend circuitry effectively quiets weaker stereo signals by essentially switching to mono. The stereo blend was, however, perhaps too much of a good thing. It seemed to act even on relatively strong signals, which greatly reduced the effectiveness of the "wide" listening mode on radio programs. With a CD input, the wide mode (which puts some out-of-phase right-channel sound in the left speaker and vice versa) was impressively effective in widening the soundstage to far beyond the cabinet.

Quibbles aside, the Model 88 *is* a great radio. It might not look as sexy as some of the new minisystems coming on the market. But if you're looking for good sound in a small, convenient package, you'll probably not find a better combination than the Cambridge SoundWorks Model 88. — *Brian Fenton* 

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# Jukebox Heaven

From the local lounge to your living room: our comparison of five feature-filled, high-capacity CD changers shows that the jukebox has come a long way in 40 years. by DANIEL KUMIN

REOPHONIC

t's 1958, and you're standing at the controls of the sweetest little jukebox you've ever seen — Seeburg's first stereo model, all done up in immaculate chrome with what look like hood ornaments on the grilles. The girl of your dreams has firally said yes, and she's here with you now, dressed like pure heaven, the two of you waiting out the shank of a Saturday evening, wanting everyone to go home so you can have the place to yourselves.

But the lounge is crowded, that quiet little moment alone a long way off. Temporarily reconciled to the dancefloor mob, you punch in G&, take your date by the hand, and, as the first notes of the Flamingos' "Only Have Eyes for You" roll from the speakers, lead her into the teeming thrcng. The song is over much too soon, though. Some drunk with two left feet tumps into your girl and elbows you in the ribs, some joker's decided to play Lawrence Welk ... and the mood is gcne. If only there was some way you could take that gleaming new beauty home ...

Dissolve to 1998: You've got 200 discs at your fingertips, just like they did 40 years ago, but now you don't have to worry about crowded dance floors, obnoxious drunks, or Lawrence Welk fans with pockets full of quarters, because you're sitting in your own living room. Unlike that jukebox of yesteryear, your CD megachanger lets you instantly set — and change — the mood, and you can pick from your own favorite tunes without having to sit through

> FROM THE TOP: PIONEEF PD-F1007, KENWOOD CD-2260M, SONY CDP-CX260, TECHNICS SL-MC6, AND JVC XL-MC334

somebody else's. Only one thing hasn't changed — it isn't any easier to put the moves on your dream girl now than it was 40 years ago.

Megachangers have been a hot item since they were first introduced, and this continues to be the fastest growing segment of the CD player market. A "megachanger" is any CD player able to store 50 or more discs for playback in any order. The five reviewed here, for instance, can handle from 110 to a whopping 300 discs. The biggest advantage of a megachanger is that it allows you to house the most often played discs in your music collection in one place, without having to fumble with jewel boxes or load and unload discs.

Just about all current megachangers, including all those in our test group, let you enter disc and track titles via front-panel or remote-control keys. Most also let you identify, search for, and organize selections by title rather than cryptic disc or track numbers. The five models here can read CD-Text the album, track, and artist information stored in the previously unused subcode data area on some recent CDs. All five let you group discs by genre or other preferences. You can then extract "playlists" from these groupings by disc or track, or you can use them to edit out unwanted tracks or discs from shuffle-play sessions. And all five can use CD-Text titles in their playlist and search functions. That all of this does not begin to exhaust the programming



possibilities is a good indication of how sophisticated megachangers have become.

This year's models are bigger, faster, and offer better value than ever before. And though the manufacturers' tendency to pile on ever more features of dubious merit seems (thankfully) to have slowed, each of these five megachangers represents some innovative, truly useful thinking. But there's the rub: this quintet is so loaded with features that merely listing them all would fill these pages. Instead, I've focused on the five areas of performance that can make or break a megachanger - disc loading/ unloading, titling, music/disc/track access and organization, expandability, and ease of use.

JVC XL-MC334 Disc capacity: 200 discs Dimensions: 17<sup>1</sup>/<sub>4</sub> inches wide, 7<sup>7</sup>/<sub>8</sub> inches high, 19 inches deep Weight: 17<sup>1</sup>/<sub>4</sub> pounds Price: \$330 Manufacturer: JVC, Dept. SR, 1700 Valley Rd., Wayne, NJ 07470; phone, 800-526-5308; Web, www.jvc-america.com



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### JVC XL-MC334

▶ DISC LOADING/UNLOADING. The JVC changer stacks 200 discs on edge in the kind of slide-projector-like carousel common to most megachangers. Discspacing is a bit more generous than with most big carousels, however, and red backlighting within the compartment makes it easier to load discs precisely. It takes a while to select a disc slot using the front panel's jog-wheel (you have to spin it like crazy), but the remote lets you skip slots up or down ten at a time — a thoughtful feature. The front-panel Exchange button opens the wide loading door so that you can change discs during play, though only within the exposed arc of the carousel (about 25 slots, located 75 or so slots before the one for the currently playing disc). You cannot rotate the rack while the

door is open.

▶ TITLING FEATURES. The JVC can display CD-Text disc and track titles and use that data for search functions (it can also show other, much rarer CD-Text information, such as the songwriter or arranger). For CDs that lack this new feature, however, you'll have to enter your own information, either with the jog-wheel and keys on the front panel or with the four-way cursor and equivalent buttons on the remote. As is almost always the case with megachangers, data entry was laborious, requiring multiple button presses or wheel spins for each character entered. The character selectors on the remote were easier to use but still no fun. Pull up a chair and send out for lunch (and dinner) if you're planning on labeling a full carousel of CDs. Like all the megachangers here, the JVC associates titles with slot numbers, not CDs. If you move a disc to a different slot, the XL-MC344 will continue to display the title for its predecessor until you enter new info.

▶ MUSIC/DISC ORGANIZATION. The XL-MC334 groups CDs either by preset genres or customized User Files. The list of 28 genres includes such popular choices as Alternative Rock, Jazz, Classical, Reggae, and even — I kid you not — Erotic. Such core categories as Blues, R&B, Soul, and Bluegrass are nowhere to be found, however. Each CD can also be assigned to one or more User Files. You can create up to eight of these, and unlike the genres, you can name them whatever you want. You can search the loaded CDs by title or artist (entering just the first few characters of the name) or by genre. However, once you find the discs you want to hear, you have to program each one for playback. There's no way to automatically play only discs by artists beginning with "K," for instance, or all those assigned to the Rhythm Effects genre.

► EXPANDABILITY. JVC's CompuLink-3 "smart remote" intercomponent system provides auto source-select, auto power-on/off, and synchronized recording. Even better, Text-CompuLink passes disc and artist titles (CD-Text or userentered) to a compatible JVC A/V receiver for display on a TV. The information can even be dubbed to a JVC MiniDisc recorder for use by the MD titling system — cool. The optical digital output permits direct digital connection to an MD recorder, a digital A/V receiver, or a preamp/surround processor.

▶ EASE OF USE. The JVC's small goldon-black lettering was hard to read even in good light. The front panel provides a generous number of controls, logically laid out, but the jog-wheel, which you use to rotate the carousel for loading and unloading discs, spun the turntable too slowly for my taste. The changer's compact remote, though a bit cramped, has quite readable black-onsilver graphics. Its four-way rocker control moves in increments of ones and tens, substantially easing disc and character navigation.

### Kenwood CD-2260M

► DISC LOADING/UNLOADING. The sleek, gunmetal-gray chassis of the Kenwood CD-2260M breaks the black-breadbox mold of most megachangers. A sticker reading "DTS Multichannel Digital Out" strikes me as misleading — any CD player with a digital output could claim the same. DTS compact discs — unlike DTS DVDs — require no special output or protocol, just a standard digital audio output.

The Kenwood's disc door, a dropdown hatch that automatically suspends play whenever you open it, is another departure from the norm. The narrower-than-usual, deeperaccess 200-CD carousel made disc loading a bit tricky. However, once I resigned myself to pinching CDs by their edges — something I dislike doing, but which seems necessary with all such upright CD roundabouts — the chore



KENWOOD CD-2260M Disc capacity: 200 discs Dimensions: 171/4 inches wide, 7 inches high, 187/4 inches deep Weight: 171/2 pounds Price: \$300 Manufacturer: Kenwood, Dept. SR, P.O. Box 22745, Long Beach, CA 90801; phone, 800-536-9663; Web, www.kenwoodusa.com

became easier. The Disc Skip knob's small diameter made it impossible to spin the carousel with any zip. When I entered the slot number on the remote, however, the tray responded with some serious rpms — nice. The Kenwood is unique among the four carousel models here in that you can rotate its tray freely to exchange, add, or remove discs while another plays on.

Kenwood's \$500 CD-2280M (not ready in time for this comparison) is identical to the CD-2260M in almost every regard except that it has two discdrive/optical assemblies, one tucked in each back corner of its chassis, for multiroom operation. It can play two different discs simultaneously and output two separate stereo audio signals. You can also use the dual transports for no-pause playback within the same room from two different CDs, with tracks alternating in order, at random, or according to a programmed sequence. TITLING FEATURES. The CD-2260M can read CD-Text disc, track, and artist titles, and even the rarer messages giving the composer, arranger, and so on for each selection. You can store user-entered, 25-character disc titles for each slot as well as up to 20 track titles per disc — altogether a lot of information (105,000 characters, by my count). That's the good news. The bad news is that Kenwood's data-input method is beyond Byzantine.

Briefly, you enter the titling mode and select the disc via small keys on the remote. You then scroll through the characters using either the small forward and backward keys or the front panel's disc-skip wheel. Finally, you select each character via the remote's Set key. Oddly, this last operation has no front-panel equivalent. Odder still, the player's readout displays four

adjacent characters at a time —

D-E-F-G, for example — as you scroll. Because the selected character flashes only about once a second, you have to wait to confirm which character is really flashing, which means you have to slow down to avoid entry errors but I found these all too common

but I found these all too common anyway. Track titles are displayed during playback, but not disc titles, which are only displayed in stop mode (despite statements in the manual to the contrary). Because I doubt many people will make the effort to enter hundreds and hundreds of track titles, the disc title would seem a better default display. Oddest of all, Kenwood was the first to provide a PC-keyboard port for title entry on its megachangers a couple of years back, but there's none on the CD-2260M. Go figure.

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Extras Extras

Low-cost microprocessor and memory chips have made multicomponent interaction more and more practical. Kenwood's new top-of-the-line A/V receivers, the VR-2090 and VR-2080 (see test report last month), both feature a graphical LCDscreen system controller with two-way infrared communication. In addition to sending commands to the receiver and

source components, such as volume up/ down or disc play/pause, it can also receive data from the receiver, such as the currently tuned radio frequency or, when used with the CD-2260M or CD-2280M megachangers, CD disc and track titles. Downloading a lot of stored disc data can take up to several minutes, and it's best to place the tabletop-styled remote on a flat, stable . . . well, tabletop (rather than your lap) to insure a steady download. The remote's LCD gives you a nice,

legible bar with the disc title, below

which is a scrollable list of track names. You use the joystick to move to and select a track. I didn't have the time to enter 200 discs' worth of data, and *Stereo Review* wouldn't authorize the purchase of a couple hundred new-generation CD-Text discs (rats!), so I couldn't confirm the remote's ability to store a full

MUSIC/DISC ORGANIZATION. Kenwood endowed the CD-2260M with the capability of running one 32-step user-defined program. As best I could determine, each step can be an entire disc or a track from any disc (the manual was not at all clear on this). Each disc can also be assigned a Music Type category from a preset list of 26 that includes Rhythm & Blues but not Blues, Soul, Disco, Bluegrass, or - alas! - Erotic. Playback can be confined to a Music Type, with discs playing in order or with the tracks randomly selected. Finally, the 32-track Best Selection program can be stored as you go by hitting the appropriate remote key while a given track is playing. But that's it - no other user groupings are available. And given the extensive titling capabilities, it's surprising that you can't search by title to locate discs or tracks.

► EXPANDABILITY. In addition to its analog outputs the Kenwood includes a coaxial digital output and two different system-control jacks. An in/out set permits interconnection with most recent Kenwood receivers and tape decks for integrated "smart remote" functions, including automatic input selection and synchronized recording. The SL16-Text output lets the 2260M send title data to either of two late-model Kenwood A/V



carousel's worth of data. But I imagine this would be a genuinely useful feature with a substantial disc load.

The Sony CDP-CX260's two-way infrared remote allows it to do much the same things as the Kenwood. Adding a wrinkle to megachanger control, Sony also lets you use its new DVP-600D five-disc DVD/CD changer (shown) to operate basic com-

> mands — such as disc selection, stop/ play/pause, and track skip — on the CX260. A nifty device in its own right, the DVD machine's readout takes over the numeric display chores, while disc titles (and track titles for CD-Text discs) are displayed on the 200-disc carousel changer as before. Best of all, you can use the DVD player to display all numeric and disc-title text on your TV set pretty cool. (The JVC XL-MC334 can also do this last trick when hooked up to a compatible JVC A/V receiver.)

This isn't the sort of thing techno-pundits usually mean when they talk about "convergence," but these devices represent exactly that. Working with one of these is a whole lot easier and cheaper — than trying to get a desktop computer to work with your CD player, receiver, or multiroom controller. -D.K.

receivers for display on the LCD screen of its two-way infrared remote (see "Extras! Extras!" above). You can't daisy-chain multiple changers, though.

**EASE OF USE.** While the basic functions were straightforward enough, some of the commands were counterintuitive. For example, you use the remote's discskip up/down keys to cycle through certain modes, then select one with the Set key. This is easy enough to do once you learn how, but I wouldn't have gotten far without the manual. The remote is small and a bit crowded, with 34 small keys of identical size and shape. The bright-white lettering redeems things a bit. While it makes for a clean, sleek look, the front panel's lack of any controls beyond the most basic transport commands and a few options like random and repeat might prove inconvenient on occasion.

### Pioneer PD-F1007

▶ DISC LOADING/UNLOADING. The Pioneer PD-F1007 crams 300 CDs into a smaller chassis than any of the three 200disc designs. The trick is accomplished by spacing the discs very close, even tighter than in the Technics changer, and by locating the drive mechanism inside the carousel's hub rather than in a corner of the chassis. You might expect the result to look like a Rube Goldberg contraption, but the mechanism is actually quite simple. Loading and, especially, *un*loading discs takes sharp eyesight and nimble fingers — a fair price, I suppose, for the Pioneer's exceptional disc capacity.

Fortunately, a single-load slot buffered by half-inch spacers maintains easy access even if every other slot is packed. This excellent feature, which simplifies occasional play, seems especially broad-minded when you consider that Pioneer could have shoehorned in another ten slots instead. You can open the loading bay to change discs in the exposed 30 or so slots while another CD, located 40 or so spaces along, continues to play. You can't spin the carousel to reach other slots, however. The Pioneer is the only one of these five changers with a headphone jack.

► TITLING FEATURES. You can enter text, in the usual cumbersome fashion, either with the front-panel jog-wheel or the remote's numeric keypad. The well-designed wheel is clearly faster and easier to use than the remote, however. Disc and artist titles can be up to 12 characters long, and you can enter a disc's title while it's playing. The PD-F1007 reads and displays CD-Text disc and track titles (and automatically scrolls them if they go beyond 12 characters), but not CD-Text artist, composer, or other names. (Oddly, the changer permits retitling a CD-Text disc, but only if you begin with a leading space.) You can also enter names for Custom Play disc sets (see below).

MUSIC/DISC ORGANIZATION. You can create up to ten Custom Play sets, with each including from one to 300 discs. The PD-F1007 then plays through the Custom-set discs in their entirety, in order. You can also keep an easily programmed, continuous-rotation Best Play list of up to 50 tracks from any or all loaded discs. If you add a track to a Best Play list that's already full, whatever title was entered first is deleted to make room. (You can also store a single 36-step sequence.) Previous Scan backs through the 20 most recently played tracks - useful, I suppose, for hunting down a song or artist you can't quite recall. You can also search for a disc by using the first character in the title or artist's name. You then use the remote's plus and minus keys or the front-panel jog-wheel to step through the results according to disc number. This is somewhat useful, perhaps, but could become a real headache if you have, say, 150 different Mozart CDs to sort through.

► EXPANDABILITY. The Pioneer design offers many expansion options, including an optical digital output for surround sound decoding or outboard digital-toanalog (D/A) conversion, and a CD-Synchro micro-plug to connect a compatible Pioneer cassette deck for automated analog-tape dubbing. Smart-remote in/out minijacks allow components to be interconnected for one-key system turn on/off and source selection. The niftiest option lets you use the analog audio inputs and "master/slave" minijacks to connect another PD-F1007, creating a 600+2-disc changer, with doubling of the Custom Play lists and other specialized functions.

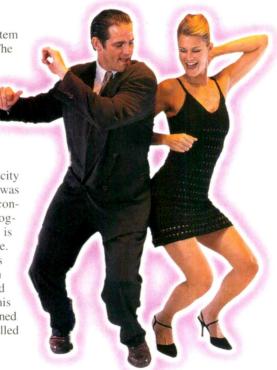
► EASE OF USE. Considering its capacity and breadth of features, the F1007 was easy to operate. The front-panel controls are well laid out, and the jogwheel, with its central Enter button, is fast, responsive, and intuitive to use. The remote, on the other hand, is relatively pokey and crowdec with black keys of the same shape and size. Colored lettering mitigates this somewhat. My thumb eventually learned its way about, but I was never thrilled by the exercise.

### Sony CDP-CX260

DISC LOADING/UNLOADING. Sony invented the 200-disc format and has stuck with a winner: The layout of the CDP-CX260 is mechanically similar to its first, 100-disc megachangers some five years back, though with much refinement, including a two-way infrared remote that displays disc and track numbers, and even user-entered and CD-Text titles, on a small LCD. The carousel loads discs on-edge. Disc handling isn't too fussy thanks to the generous slot spacing, but there is no exchange capability. To load or extract a disc, you must stop playback. A nicely responsive front-panel jog-wheel locates the desired slot. Pushing in the wheel, how-

PIONEER PD-F1007 Disc capacity: 300+1 discs Dimensions: 16½ inches wide, 7% inches high, 17 inches deep Weight: 17½ pounds Price: \$425 Manufacturer: Pioneer, Dept. SR, 2265 E. 220th St., Long Beach, CA 90810; phone, 800-746-6337; Web, www.pioneerelectronics.com





ever, activates commands for playback or other functions, depending on the mode. I repeatedly executed unwanted commands while spinning the wheel in search of discs.

> TITLING FEATURES. Text entry is restricted to a 13-character Disc Memo title for each slot. This is displayed on the front-panel readout in stop mode and on the remote's LCD screen during playback. You can assign a title to each Group File (see below). The CX260 displays CD-Text artist, track, and title info on both its front panel and the remote's LCD, automatically taking a CD-Text disc's title for its slot's Disc Memo. Entering text was quickest using the front-panel wheel and keys, but entry via the remote's keys and rocker was nicely implemented, too, and on the whole a bit more comfortable.

Better still, Sony provides a jack for a PC-standard keyboard. This method is so superior that it might be worth the \$25 or so for an inexpensive keyboard just to be able to enter the titles for all 200 discs. (Permit me to note modestly that I proposed this feature when the first changers with title memory appeared a decade ago.) The titling features are well conceived, but a single 13-character name is hardly enough to distinguish among 200 CDs. I again offer the 150-disc Mozart collection as an example.

► MUSIC/DISC ORGANIZATION. You can create up to three 32-step programmed sequences. (A step can be an entire disc

| The Numbers  | JVC<br>XL-MC334 | KENWOOD<br>CD-2260M | PIONEER<br>PD-F1007 | SONY<br>CDP-CX260 | TECHNICS<br>SL-MC6 |
|--|-----------------|---------------------|---------------------|-------------------|--------------------|
| Maximum output   | 1.9 volts       | 2.2 volts           | 2.1 volts           | 2 volts           | 2.2 volts          |
| Frequency response<br>(20 Hz to 20 kHz, de-emphasis off) | +0, -0.3 dB     | +0, -0.5 dB         | +0, -0.5 dB         | +0.13, -0.03 dB   | +0, -0.1 dB        |
| Channel balance (re 1 kHz)                               | 0.06 dB         | 0.2 dB              | 0.06 dB             | 0.02 dB           | 0.05 dB            |
| Channel separation (re 20 kHz)                           | 72 dB           | 69 dB               | 64 dB               | 73 dB             | 64 dB              |
| Noise (A-wtd, de-emphasis off)                           | -74.5 dB        | -74.1 dB            | -75.5 dB            | -72.1 dB          | -74.6 dB           |
| Distortion (THD+N, 1 kHz) at 0 dBFS*                     | 0.004%          | 0.005%              | 0.003%              | 0.005%            | 0.005%             |
| Distortion (THD+N, 1 kHz) at -20 dBFS                    | 0.02%           | 0.003%              | 0.03%               | 0.04%             | 0.04%              |
| Linearity (at -90 dBFS)                                  | +0.6 dB         | +1.2 dB             | -3.2 dB             | +2 dB             | -1.3 dB            |
| Excess noise EN16 (16-bit, without/with signal)          | +1.25/+1 dB     | +2.15/+1.25 dB      | +2/+0.25 dB         | +4.25/+3.5 dB     | +1.75/+0.5 dE      |
| Pitch error  | -0.18 cent**    | +0.02 cent          | +0.11 cent          | -0.05 cent        | -0.04 cent         |
| Defect tracking (Pierre Verany test CD)                  | 1.5 mm          | 1.25 mm             | 1 mm                | 1.25 mm           | 1.5 mm             |
| Cueing time (nearest/most distant disc)                  | 13/17 seconds   | 15/18 seconds       | 12/16 seconds       | 18/23 seconds     | 9/12 seconds       |

\* decibels referred to digital full-scale \*\*1 cent = one-hundredth of a musical semitone

If five megachangers performed very well indeed on the test bench. In fact, there was little to set them apart other than disc-access times — but that may be the single most important spec for many consumers in the megachanger market. The Technics came up big here thanks to its speedy lateral mechanism, about 50 percent faster than nearly all the others. Given its 300-disc capacity, though, the Pioneer's times were more than respectable. All five performed a bit better than adequately on the data-dropout disc-defect test. Though I've seen considerably better results from a number of single-disc CD players, there wasn't a single stutter or mute in actual use. All five changers employ variations on 1-bit D/A conversion. Their performance in our excess-noise "acid test" (EN16) varied only within a comparatively small range. In short, all proved to employ accurate, quiet, low-distortion D/A designs. -D.K.

or a single track.) A Delete Bank memory can be appended to any disc, in any play mode, that will automatically instruct the player to skip specified tracks each time it loads that disc — a powerful feature I've long thought of as the "Revolution #9" memory (it's overridable, of course). Hit List stores onetouch-entered tracks from any discs in an ongoing roster of 32 tracks, lets you title each track, and automatically deletes the oldest entry when filled. You can also create and name eight Group File sets, each comprising any number of discs, with overlap permitted. You can play back a Group File using any of the CDP-CX260's four basic modes: all-discs, one-disc, all-discs-shuffle, and one-disc-shuffle. Finally, the CX260 can search for titles by the initial letter.

SONY CDP-CX260 Disc capacity: 200 discs Dimensions: 17 inches wide, 7% inches high, 19 inches deep Weight: 21 pounds Price: \$660 Manufacturer: Sony, Dept. SR, One Sony Dr., Park Ridge, NJ 07656; phone, 800-222-7669; Web, www.sel.sony.com



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You can then scroll through the resulting list via the front panel or the remote's Easy Scroll rocker (titles scroll on both the remote and the front-panel displays).

**EXPANDABILITY.** The CDP-CX260 offers all the key expansion options. Plugging a second 200-disc Sony CD changer into the CX260's line input and Control-A1 jacks increases the capacity to 400 discs, creating a master/ slave pair that responds to basic commands like a single, larger changer. Sony's Advanced Mega Control system allows you to do cross-fades between tracks from discs in the separate changers or to program continuous, no-pause playback. (You can also use the Control-A1 jacks to join the CX260 to a Sony smart-remote system for auto-on/ off, input-selection, and synchro-recording functions.) There is an optical digital output for connection to another digital audio component. Also supplied is a calculator-sized black box, meant to sit atop the changer or on a nearby shelf, that contains the infrared transceiver for the two-way remote.

► EASE OF USE. The front-panel controls were simple and generally effective, aside from the jog-wheel's pushbutton control troubles already mentioned. Besides the backlit LCD screen, the remote features a flip-up panel concealing secondary keys and an Easy Scroll push-to-enter rocker control - all of which will feel familiar to owners of late-model Sony TVs. The handset was a pleasure to use. Because the remote can show a scrollable, selectable list of all discs and titles along with Disc Memo and CD-Text data, finding music was a snap. I wasn't crazy about having to open the remote's door to enter track numbers, though. You have to update the remote's memory via the infrared link every time you add new CD-Text or Disc Memo data, or if the remote fails to update the track name due to a blockage in infrared communications. A progress bar appears on the LCD during this 13-second operation.

#### **Technics SL-MC6**

DISC LOADING/UNLOADING. Unique among the changers reviewed here, the 110+1-disc SL-MC6 stores CDs onedge in a horizontal "dishrack" tray whose disc slots are only 1/8 inch apart. The tight spacing and smaller overall capacity make this by far the most compact machine, with the fastest disc access. Behind the flip-down front panel, which runs the full width of the chassis, a clever loading "sled" slides across the rack, registering the selected disc number in a notch. A disc placed in the sled is then rolled into the selected slot. When you want to remove a disc, a lever catapults it out of its slot and into the sled. It's simple, effective, and considerably easier than trying to load the tiny slots directly. A "+1" slot in the far-left edge of the rack allows for single-play operation.

▶ TITLING FEATURES. The SL-MC6 reads CD-Text artist, disc, and song-title information at the full scrolling length of 10 characters. You can manually enter the information for other discs, up to 32 characters for each entry. You can use the ten-key pads on the front panel or the remote to enter the characters, but (as usual) entering the titles for a full rack would take all day. And you can only enter data in the stop mode (if you like music while you work, listen to the radio). Like most megachangers, the Technics remembers user-stored disc information by slot number.

▶ MUSIC/DISC ORGANIZATION. You can arrange discs in five groups, labeled A through E, each comprising from one to all 110 discs (a disc can be included in multiple groups). You can't customize



**TECHNICS SL-MC6 Disc capacity:** 110+1 discs **Dimensions:** 17 inches wide, 65% inches high, 15½ inches deep **Weight:** 15½ pounds **Price:** \$300 **Manufacturer:** Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094; phone, 800-222-4213; Web, www.panasonic.com

the group names, but you can choose a name from a fixed palette of 14, including Blues, Classic, New Age, and more. (What, no Erotic?) Setting up groups is easy, requiring just a couple of keystrokes once a disc is selected. It's also easy to confirm group contents, but only by disc number, unfortunately, and only in stop mode. A single 32-track sequence can be stored.

**EXPANDABILITY.** None. The SL-MC6's rear panel has stereo RCA-jack analog outputs and a power cord — period.

► EASE OF USE. The efficient design of the Technics changer makes it simple to use. The lateral-stack layout and small capacity (compared to the 200- and 300-disc behemoths) gave the SL-MC6 by far the fastest access time of the five changers. It could find a single disc in no more than 12 seconds. The remote is compact, with acceptable spacing for its 37 keys. Unfortunately, the keys are all of the same size, shape, and color (contrasting background and label colors help a bit).

#### **Jukebox Jury**

There are a lot of ways to evaluate megachangers, but ease of use is probably the biggest factor in the long run. When you're trying to set a mood, swaying slowly with your baby to soft music by moonlight, the last thing you want is to have to throw on the lights to figure out why the changer has suddenly decided to play "Whoomp! There It Is."

Fortunately, all five changers have their own ergonomic advantages. There are things I dislike about each

one — for instance, there's got to be a better way to enter disc titles — but none of them presents any insurmountable challenges.

The Pioneer PD-F1007 is the most ambitious of the bunch, cramming 300 discs into a chassis considerably smaller than the average microwave. And its access time, surprisingly, was faster than all but the smallest and simplest of its brethren, the Technics, which itself wins my least-intimidating award. The Pioneer's performance, features, and not too lofty price make it a solid contender.

Top honors, however, access speed aside, go to Sony's CDP-CX260. Its superior titling capabilities and disc organization, keyboard port, two-way remote, and wealth of expansion options all add up to a dazzling little jukebox gem.

# When was the last time your speakers made you look twice?



Gekko<sup>™</sup> Flat Speakers, a visual revolution in sound.

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NCT Audio Products. Inc. One Duck Street. Suite #300. Stamford. CT 06902

# Dealer's Choice

pecialty audio/video retailers understand real people. They're on hand when customers squeeze in a visit after a long day at the office or during precious weekend time. They know people are searching for a good entertainment value. The profiles vary — the customer may be a video buff or a jazz fan, a single person or an entire family — but the bottom line is almost always the same:

THREE EXPERTS SHOW HOW TO SURVIVE A \$2,500 HOME THEATER SHOPPING SPREE by REBECCA DAY and lifestyles. Give three dealers the same budget and they'll find three different ways to put together a home entertainment system. And that's just what happened when we gave three seasoned A/V retailers \$2,500 each in nonnegotiable *Stereo Review* funny money and asked them to design home theater sound systems for hypothetical customers priced as close as possible to that total. Then we

People want systems that perform well, but they don't want to spend a lot of money.

The ways different dealers choose to reconcile those opposing desires for excellence and economy vary as much as their customers' personalities asked each dealer to suggest a big-screen TV to complete the system as well as other ways to upgrade it. Turn the page to see what they recommended. (Note: all prices are "manufacturer's suggested retail." Actual dealer prices may vary.)



# **\$2,673** номе тнеатев

**GRAMOPHONE** Timonium, MD

| Sony STR-DA30ES<br>Dolby Digital/DTS receiver         | .\$800 |
|---|--------|
| Pioneer DV-414 DVD player                             | .\$525 |
| Definitive Technology<br>Pro Monitor 100 speakers (4) | \$700  |
| Definitive Technology<br>Pro Center 100 speaker       | \$199  |
| Definitive Technology<br>Pro Sub 100 subwoofer        | \$449  |



# A **MOVIE** BUFF'S STARTER **SET**

YOU KNOW THE TYPE: He can visualize every Hitchcock movie frame by frame and recite the cast backward and forward, but he doesn't know a woofer from a tweeter. He thought home theater was for tweaks until he experienced DVD and Dolby Digital at a friend's house. Now he's gotta have it. We sent our home theater novice to Brian Hudkins at Gramophone, a specialty dealer in Timonium, Maryland.

Hudkins centered the system on a Sony STR-DA30ES A/V receiver. Even though Dolby Digital is the standard surroundsound format for DVD, he recommends this receiver, which also provides DTS decoding, to avoid any chance of the customer's being caught in another Beta vs. VHS format war. Even if significant DTS DVDs never hit the market, the STR-DA30ES will be a solid performer, delivering 80 watts each to five channels. That's plenty of power for dynamic soundtracks, says Hudkins, and there's an output for easy hookup to a powered sub.

One cool feature that will really grab any couch spud is the two-way Sony remote control, Hudkins says. The remote's LCD readout shows the status of the equipment, so that you can see, for example, which radio station is playing or which surround mode is selected without having to squint to read the front-panel display from a distance. Getting a status report is especially important with a receiver like the STR-DA30ES, which offers 29 simulated acoustical environments, three movie modes, and additional acoustic effects. Hudkins also likes the remote's uncluttered look. Unlike remote controls that simply duplicate function keys for different components, the Sony remote doesn't; its stop and play buttons, for example, do double or triple duty for a CD or DVD player or a VCR. That means fewer buttons without a loss in functionality. The remote comes set to operate Sony equipment and is preprogrammed for other brands as well. It can also learn codes from other remotes.

The other bonus with the receiver is its limited five-year warranty, which means "you don't have to think about an extended warranty," Hudkins adds.

He jumped to Pioneer for the DV-414 DVD player since only the most expensive Sony DVD model can pass along a DTS signal. Whether the movie buff ends up siding with DTS or Dolby Digital on DVD doesn't really matter, Hudkins says, but his VHS collection will probably take a hit. "After he experiences movies and music from DVD in digital surround sound, I doubt that his VCR will see much action." With a going "street" price of \$399, the DV-414 is one of the least expensive DVD players, but it still packs 10-bit video digital-to-analog converters and component-video outputs.

Definitive Technology speakers have long been favorites at Gramophone because of their trademark bottom-end prowess. "The bass is remarkable," Hudkins says, "but they don't overdo it. They don't sacrifice musical performance to produce airplane crashes with realism." The compact size of the Pro Monitor 100 is a dealmaker, too. "The problem these days is how to fit six speakers into a family room and keep everyone happy," Hudkins says. At 10 x 6 x  $5\frac{3}{4}$  inches, the Pro



Monitor 100 is easy to place, and Hudkins recommends putting one in each of the four corners of the room. The speaker comes with a pivoting stand, swiveling wall-mounting hardware, and a keyhole for maximum placement flexibility.

To preserve timbral consistency all the way around, Hudkins matches the Pro Center 100 speaker with front and surround Pro Monitor 100s. He notes the exceptional clarity of the speaker's two 4<sup>1</sup>/<sub>2</sub>-inch cast-basket woofers and 1-inch aluminum-dome tweeter, which helps the speaker articulate dialogue as well as other important center-channel information. Since all that clarity can easily be lost if the center speaker directs sound too far above or below the seating position, the Pro Center 100's contoured cabinet can be adjusted to angle it up or down toward the listener.

The ProSub 100 includes a continuously variable low-pass filter that allows you to set the high-frequency rolloff from 40 to 150 Hz, depending on the acoustical characteristics of your room and your listening preference. The sub's signal-sensing auto on/off circuit enables the amplifier to power up with the rest of the equipment and to power down after the system is turned off. Like the other speakers in the Definitive Pro line, the sub is offered in black or white. Black remains more popular than white, Hudkins says, but it's nice to be able to offer the option. "The Definitive Tech speakers are easy to live with, and the sound quality is exceptional," he assures us. "Add to that the flexibility of a DVD player that can double as a CD player, and you've got a terrific little system."

Still, it could be better, and Hudkins has a few ideas in mind for when the customer comes into more discretionary dollars. A movie on DVD will look good on any TV, but the bigger the better. Hudkins chose the Sony KV-32FV1 as a logical upgrade to this system because of its high-end video features: a componentvideo input that will insure the highestquality video from the Pioneer DVD player, color-temperature adjustment, and the Wega flat picture tube, which delivers uniform brightness and sharpness from the center to the edges of the screen.

Once the customer has gotten used to digital video from DVDs, he's going to want it for TV programs, too, so Hudkins is ready to write up a ticket for the new Sony SAS-AD4 Digital Satellite System, which is equipped to pass along a Dolby Digital signal. To cap off the system, he recommends upgrading with premium audio and video cables and a Panamax surge protector.



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AFTER YEARS OF LISTENING to pintsize hi-fi out of a low-end minisystem, this upwardly mobile sales manager was ready for a music system that sounded natural rather than overly bright or tinny. She listens to pop, jazz, and alternative music in the living room of her townhouse and values convenience as much as she covets good sound. She'd like to be able to play music in the bedroom, too, and a big-sound/big-picture home theater is on her wish list as well, but she wants to settle the musical score first. We gave her requirements to Michael Gallant of Hillcrest High Fidelity in Dallas and asked him to build the foundation for a solid home theater system with a musical bent.

Gallant is a big believer in Yamaha's proprietary processing circuits. "Yamaha makes its own signal processors, and they can deliver a smoother sound," he says, particularly Yamaha's dedicated Dolby Digital chip, which only does Dolby Digital decoding, unlike typical multifunction chips that have to divide their duties. The Yamaha RX-V795 five-channel receiver also boasts a DTS decoder for DTS-encoded CDs as well as movies on DVD. Of course, it also has a Dolby Pro Logic decoder for surround sound from videotapes and TV broadcasts. At 80 watts per channel, it delivers plenty of power for both music and movie surround sound. And its trademark Yamaha DSP programs can recreate the acoustical properties of such real-world venues as the Village Gate in New York and the Roxy Theater in Los Angeles.

The Yamaha receiver's remote is like having two remotes in one. The stream-

lined titanium handset has a row of source buttons down the right side, system power buttons, volume and mute, and function keys that double as directional keys. Most basic functions can be operated from this backlit control without ever opening the front cover, but if you want to go under the hood, more sophisticated control options await. The remote is both a learning type and preprogrammed to operate Yamaha components. It can also store up to 13 macro commands, each of

which can include up to seven functions.

Yamaha got the nod for the carousel CD changer as well. At \$269, the CDC-665 offers the best bang for the buck, according to Gallant. "It's got a nice, accurate digital-to-analog converter, and it's a good-sounding machine." On the convenience side, the CDC-665 rates high thanks to its Play Xchange feature. It may sound like a small thing, Gallant says, but being able to swap out four CDs while a fifth is playing is the clincher for many folks who are in the market for a CD changer. And since it's a Yamaha changer, its remote-control codes are already programmed into the receiver's remote.

Gallant selected Paradigm speakers for this system because of their clean, flat response and small footprints. For the front left/right he chose Paradigm Phantom V.2



| \$2,423<br>HOME THEATER                           |
|---|
| HILLCREST HIGH FIDELITY Dallas, TX                |
| Yamaha RX-V795<br>Dolby Digital/DTS receiver\$799 |
| Yamaha CDC-665 CD changer\$269                    |
| Paradigm Phantom V.2 tower<br>speakers (2)\$3399  |

| Paradigm CC-170             |       |
|-----------------------------|-------|
| center-channel speaker      | \$199 |
| Paradigm Atom surrounds (2) | \$179 |
| C-70 speaker stands (2)     | \$79  |
| Paradigm PS-1000 subwoofer  | \$499 |

tower speakers, but he reassured the customer that floor-standing doesn't have to mean big or bulky. The two-way bass-reflex speakers measure roughly  $33\frac{1}{4} \times 7\frac{1}{2}$ x 12<sup>3</sup>/<sub>4</sub> inches. The 22-inch-wide CC-170 center speaker is a perfect match.

Since the system has no Dolby Digital program sources, Gallant selected Paradigm's tiny Atom surround speakers, which can do justice to the bandwidthlimited surround channel in TV broadcasts or CDs with Dolby Surround encoding. At \$179 a pair they came in on budget, too.

A Paradigm PS-1000 powered subwoofer rounds out the speaker array. Its 130-watt amplifier lets it roll out convincing thunder in a movie soundtrack and contribute to the overall balance on music sources, too. "The variable crossover on the subwoofer allows you to let the sub take over on the lower frequencies, and that reduces the strain on the main speakers," Gallant says. "Then the main system amp is able to reproduce a cleaner midrange with more depth and imaging." A power-saver feature turns on the sub's amplifier but puts it into energy-saving standby mode after it no longer sees a signal, he notes. Measuring 163/4 x 17 x 19 inches, the sub won't make it as a design statement, but "she can place it under a table or behind the furniture," he says.

a great value," Gallant says. "She's getting twice the performance she's paying for, and she'll enjoy it for years to come."

To elevate the system to home theater status, Gallant recommends the Yamaha DVD-S700 DVD player as the first upgrade. It matches the other components and is operable from the receiver's remote. Of course, the next step is to move up from her 20-inch TV to a 32-inch ProScan PS32600 TV. He likes the convenience of the set's Guide Plus electronic program guide, the (potential) 765 lines

of resolution, and the brightness of the picture; there's also an S-video input to get the most out of a DVD.

Upgrading this system to 5.1-channel sound requires surround speakers with greater power handling, so Gallant would replace the Atoms with a second pair of Phantoms and relegate the Atoms to the bedroom, where they'd take the feed from the main system. He'd add a Niles SPS-4 speaker selector to turn the remote speakers on and off and a Niles volume control for the bedroom.





**DEFINITIVE AUDIO** Bellevue, WA

| Marantz SR-585<br>Dolby Digital receiver | \$649 |
|--|-------|
| Marantz DVD-810 DVD player               | \$699 |
| B&W DM 302<br>bookshelf speakers (4)     | \$500 |
| B&W CC3 center-channel<br>speaker        | \$179 |
| Rock Solid PB100 subwoofer               | \$449 |



# A FAMILY SYSTEM WITH ROOM TO GROW

HAVING A 14-MONTH-OLD daughter himself, Craig Abplanalp, vice president of Definitive Audio in Bellevue, Washington, understands the challenges a young family faces when making an investment in home entertainment. When we gave him a \$2,500 budget and told him to assemble a system for a young family with room to grow, he didn't have to stretch his imagination. "You have to address the needs of today without becoming obsolete tomorrow," he says.

With that in mind, Abplanalp selected the Marantz SR-585 receiver as his control center. "Marantz's philosophy is to give customers more performance and simpler operation," he notes. "A lot of people take the cost of a receiver and divide it by the number of features to come up with a feature-per-buck ratio," he says. "Marantz puts more emphasis on the audio/video quality than on knobs and gadgets."

At the same time, he says, the SR-585 can deliver everything this family needs to enjoy their home theater. There's a basic assortment of digital signal processing (DSP) modes to create Theater, Church, Stadium, and Hall ambience effects from the multichannel speaker array. Abplanalp appreciates that all of the processing is done in the digital domain. "That allows for better fidelity and separation," he says. The Dolby Digital Night Mode reduces the dynamic range for quieter listening, which will come in handy during nap times.

Five A/V inputs accommodate the TV, VCR, and DVD player, leaving a couple to spare, and front-panel A/V jacks are ready and waiting for baby's first steps to be captured on the camcorder. Three more audio inputs are available for a cassette deck or other audio-only analog program source, and there are coaxial and optical inputs for digital components.

The Marantz DVD-810 DVD player eliminates the need for a separate CD player, which simplifies fitting this system on the shelves under the TV stand.

Being able to operate everything from a single remote control is also a must for this family, which is likely to have enough trouble keeping tabs on just one. The learning remote supplied with the receiver is preprogrammed to control both it and the DVD player, and it can learn the codes of the existing VCR and TV.

Sonically, the DVD player is true to the Marantz philosophy, Abplanalp says. The enhanced power supply and audiophilegrade capacitors used in the analog stage insure good performance even from a budget-price machine, he says. The company didn't skimp on the video side either, with 10-bit video D/A converters to provide a high-resolution picture with minimal video noise. The icing on the cake is the Marantz three-year parts-andlabor warranty on both the DVD player and the receiver, which gives these cus-





tomers the kind of insurance they're looking for.

On the loudspeaker side, Abplanalp plucked four B&W DM 302 speakers from inventory. He considers the compact  $(12^{1/2} \times 7^{1/4} \times 8^{1/4}-inch)$  speaker to be among the best values on the market.

"B&W speakers are used a lot as recording monitors because they're

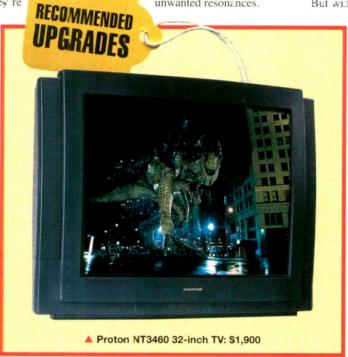
known for being extremely accurate," he says. "A lot of speakers that are accurate are unforgiving, but these are smooth and musical." The wedge-shaped back panel of the DM 302's cabinet was designed to reduce resonances, he says, a construction detail that's typically found on speakers costing a whole lot more.

The vented, magnetically shielded B&W CC3 center speaker was designed to match the DM 302. The horizontally oriented CC3 boasts two 4-inch fibercone woofers and a 1-inch soft-dome tweeter. The rubber feet that come with the speaker let users adjust its tilt angle for the best line to the sofa.

Abplanalp went to Rock

Solid Sounds, B&W's sister company, for the PB100 powered subwoofer. Its 10inch driver and 70-watt amplifier will deliver all the bottom end this family needs, he says. The vented enclosure uses the company's Flow Port system. The downfacing port allows the air to move

freely through it without unwanted resonances.



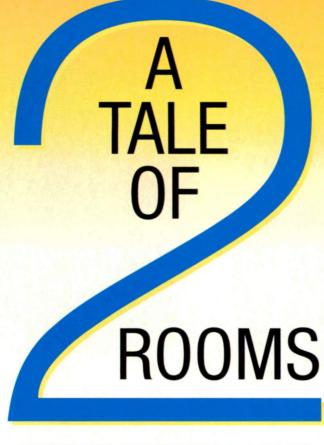
When you're shopping for a system in this price category, you have to decide what's important, Abplanalp says. "In this system we have a strong speaker package and a receiver that gives you excellent sound quality without being too gadgetoriented. Best of all, it offers a lot of flexlightly for the future."

But without a good-size TV to serve as

a canvas for DVD, this family is getting only part of the total picture. Therefore, the first stop on the upgrade path is a 32-inch Proton NT3460 TV set.

"It's a great picture for a conventional (nondigital) TV," says Abplanalp. The set's regulated power supply allows it to produce better black level and definition than a lot of other TVs, he says, which is important for reproducing color accurately, especially during the darker scenes in movies. "If the black level is poor, then you can't tell the grays from the blacks. With the Proton, you can differentiate every shade of gray," he notes. Great for watching those old Shirley Temple movies.

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WHEN YOU'RE TRYING TO COAX MAXIMUM PERFORMANCE FROM YOUR SUBWOOFER, WHERE YOU PUT IT MAKES ALL THE DIFFERENCE. BY TOM NOUSAINE

If you're anything at all like me — and since you're reading *Stereo Review*, I assume we have a few things in common — then you want your home theater to sound as good as it possibly can. No doubt you've played with different speaker placements to get optimum imaging. But what about the subwoofer? Did you find the right place to put it to deliver the kind of smooth bass that brings music and movie soundtracks to life?

Unfortunately, finding the right subwoofer location by ear is difficult at best. I turned to speaker-placement software for assistance. But even that didn't help — none of the software that I ran was able to predict actual in-room response below about 100 Hz. In real life, not all rooms are shoeboxes that lend themselves to easy analysis. They have door openings, furnishings, and different kinds of walls to complicate things.

I turned to a brute-force approach and measured the subwoofer response at all possible locations in my room to see which ones worked best. In other words, at which locations were the sub's rumbles as low and loud and smooth as they could possibly be? The equipment I used to measure the subwoofer response included a MLSSA analyzer and an Audio Control sound-level meter. The primary subwoofer was a Velodyne F-1500R.

As you might have guessed from my previous articles for *Stereo Review*, I found that corner placement of the subwoofer delivered the best bass performance in my listening room. To convince myself that my room wasn't special in some way, I "mapped" several other rooms — with the same result. I also conducted a similar study using multiple subs. Conventional wisdom says that multiple subs pumping out bass at different locations will smooth the in-room response. To my surprise, I discovered that this is completely wrong. A single sub in a corner blew away two, three, four, or even five subs located near other speakers in a surround system.

When I moved to another home, my new listening room had nearly the same floor space as my old room but almost three times the volume. The old room was a basic  $12 \times 22^{1/4}$ foot shoebox (I still wonder why those speaker-placement programs didn't work better), with a single 5-foot-wide doorway and an 8-foot ceiling. My new room has a similar rectangular floorplan (13 x 23 feet) but adds a foyer, two doorways, three open archways, an 18-foot cathedral ceiling, and an open staircase, all of which make it much larger and very unshoeboxlike. The irregular layout, tall ceiling, and overall size (7,500 vs. 2,150 cubic feet) make it a vastly different space (see diagrams on facing page).

I worked up a subwoofer placement map as soon as I arrived — what else would a bass freak do when moving into a new space? The best subwoofer location again proved to be a corner, the only one with no adjacent openings. No surprises there. But I discovered other interesting differences that both defy and confirm conventional wisdom.

Conventional wisdom holds that larger rooms give better, smoother bass. Supposedly, bigger rooms can "support" low frequencies better because the longer dimensions more closely approximate low-frequency wavelengths. A 20-Hz tone has a wavelength of about 50 feet, and the theory goes that you need a wall that's at least a half-wavelength long to produce 20 Hz in any room. No rationale for the notion that a larger room also has smoother bass is ever given, but the reasoning probably goes something like, "You can't have smooth bass unless you have deep bass."

If the conventional wisdom were true, we would expect to get deeper bass extension in the larger room, right? That ain't what happened. Measuring the frequency response with a reference 85-dB sound-pressure level (SPL), I found that the subwoofer's output was down 3 dB at 20 Hz in my old room, but in the bigger new room, it was down 3 dB at 27 Hz. That's a big difference!

Obviously, just because a sound wave doesn't fit in a room doesn't mean it can't "excite" the air in the room. Think about it — if it were true that a space must be long enough to hold a half-wavelength, then people would never hear sounds below 2,000 Hz with closed-back headphones. In fact, in a small space we get *reinforcement* at low frequencies. That's why your voice sounds so deep when you sing in the shower.

I also compared the maximum SPL obtained in each room at a 10-percent distortion limit. The smaller room had 8 dB *more* clean output at 20 Hz than the larger room! It is clear that a sub-woofer can play not only deeper but also louder in a smaller room. Obviously, the conventional wisdom is wrong, but why? That's trickier to explain.

In any room, there are resonances, or "standing waves" - also called "room modes" - between each pair of opposing boundary surfaces, whether a pair of walls or the floor and ceiling. The frequency of a room's lowest mode is normally equal to half the speed of sound (565 feet per second) divided by its longest dimension. Other modes occur at integral multiples of that frequency, but the higher the frequency, the weaker the resonance. Thus, my new listening room's lowest mode is at 25 Hz (565 divided by its length of 23 feet). A room only 12 feet long would have its lowest mode at 47 Hz.

I plotted SPL as a function of time and frequency in both my old and new listening rooms. In the resulting "waterfall" spectral-decay graphs, I could see the effect of their room modes from the onset to the extinction of the test sound. As the test signal's frequency increased, the room modes it excited became denser and the sound pressure was more evenly distributed.

Comparing the graphs for the two rooms, I could see that while the overall frequency response was similar, the

Although the basic width and length of my original room (below) are within a foot of my new room's dimensions, the open archways and cathedral ceiling of the larger room (right) make it a vastly different space.

larger room had a much smoother decay. The room modes also became denser and more evenly distributed at lower frequencies than in the smaller room, and everything was smoother.

Finally, I measured frequency response at three different listening positions in both rooms: at the center of the main listening couch, at one end of the same couch, and at another seat placed far off the center axis (set against a wall at about a 45-degree angle). The response differences between these positions were far smaller in the larger room. In other words, the sound was more evenly distributed. Because both rooms are quite similar in construction, the improvement seems to be related to the greater density of the room modes.

What can we conclude from all this? Well, on the one hand, at frequencies below a room's lowest mode, the bass response *rises* by 12 dB per octave because there are no room modes. That really helps at subwoofer frequencies, and the smaller the room, the *more* it helps, because the range between the lowest room mode and the bottom of the audible range is wider. On the other hand, bass response *is* smoother in a big room, because the primary room modes occur at lower frequencies and there are more modes above them.

So part of the conventional wisdom turns out to be true, but for the wrong reason. And there's a related theory that a room with stiff concrete or similar walls provides better bass because it keeps more energy in the room that's also wrong. In fact, bass is smoother in an acoustically absorbent room than in one with stiff, reflective surfaces. While it's true that more energy stays in the room if the walls are stiff, at lower frequencies that just makes the standing-wave effects worse: stiff walls exaggerate room resonances. Half-inch drywall on regular 2 x 4-inch studs is better than solid concrete.

Remember that these conclusions apply to subwoofers placed in optimal locations. The main problem with room modes is that they tend to be widely spaced in frequency, creating peaks and valleys in the room response. A sub in a corner can excite room modes in all three dimensions; in a noncorner placement, it can excite the modes in only one or two dimensions, so the peaks and valleys are more obvious.

No room is perfect for bass. My old and new rooms both have flat bass response at the sweet spot as long as the subwoofer is properly placed. The smaller room let me get loud, deep bass without a huge sub or amplifier. The larger room gives me smoother response over a wider area. Which is better?

Neither! We have to play the hand we're dealt. A big room gives smoother, more even response at off-center seats. But it doesn't come cheaply — you need a big woofer and a lot of power to compensate for lower undistorted SPLs at 20 Hz. Life is a series of tradeoffs, so why should audio be any different?



# SYSTEMS

# Achieving Sonic Nirvana

#### IT'S EASY TO PUT TOGETHER A

home theater system that goes crash, bang, boom, but what if your taste in films ranges beyond action movies? *Stereo Review*'s classical music editor, Robert Ripps, wanted a home theater where he could enjoy films by everyone from Bergman to Bey. What he got — to his surprise — was a system that also does justice to his extensive, and eclectic, music collection. Robert had been eying the large (23 x 18-foot) downstairs room of his new house in Fairfield County, Connecticut, as a home theater space ever since he moved in last June, but he was daunted by the prospect of installing a system from scratch. "I finally made the decision while watching Martin Scorsese's film on the life of the Dalai Lama, *Kundun*, at a local movie theater," he says. "It was primarily

a musical decision. I knew that the Philip Glass score would be better served by a good home theater setup than by the movie theater's mediocre sound system."

Most people have the installer recommend the components when opting for a custom system, but Robert chose almost all of the equipment himself. He then relied on the skills of Jim Young and Wayne Tomblin of Audio Video Environments in Stratford to make the installation a reality. The result is a refined and flexible system that still has the muscle to bring even the most over-the-top DVD movies to life.

At its heart lies a set of Paradigm Reference speakers: LCR-450s for the front trio and ADP-450s for the surrounds, with the bass supplied by a Servo-15 powered subwoofer. "I chose the Paradigms partly on the strength of Corey Greenberg's reviews and partly on their reputation of be-



ing equally good at home theater and music reproduction," says Robert. "I'm thrilled with the sound. I would have been happy with a good home theater setup. That it is also an excellent music system is a real bonus. I'm beginning to do more and more of my critical listening here, instead of on the system in my study.

"I've been surprised by how much I've enjoyed listening to my CDs on it," he continues. "They don't sound at all gimmicky in five channels. The feeling of space and depth is attractive."

The other key element is a Marantz PV-5470 rear-projection TV. The room is more than big enough for a front-projection system with a 6- or 8-foot screen, but Robert felt that such a large image would dominate the space too much. Going with a 54-inch screen helped maintain the proper proportions between image and sound. "The sharpness and the color reproduction are impressive," he says. "The picture looks more like the one from a direct-view TV than I would've expected."

All of the components are new except Robert's tried and true Pioneer CLD-980 laserdisc player. Like many movie fans, he has embraced DVD, but it will be years before most of the films, much less the opera and concert performances, in his laserdisc collection are released in the new format.

Everything is driven by a five-channel Sunfire Cinema Grand amplifier. Many systems this big employ two or more amplifiers for a broad dynamic range some use a separate amp for each channel. According to Robert, however, the Cinema Grand has had no problems keeping up with the considerable demands he places on it.

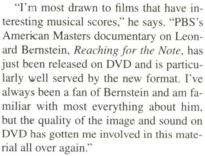
On the recommendation of installer Young, Robert chose Sony's SAS-AD3 digital satellite system. "The quality of the picture from both satellite broadcasts and DVDs has been stunning," he says.

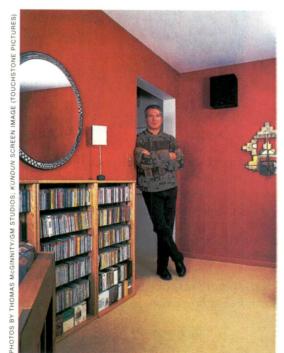
All of the components and speakers are connected with Monster Cable. M1000v Silver interconnects are used for the video sources and M550i for the audio, with S14-4R CL cables for all of the speakers.

Rounding out the system are a Marantz MV 830 VCR, AV 550 preamp/tuner, and DVD-810 DVD player. By opting for rear over front projection and relying on Marantz electronics, which are known for both high performance and reasonable prices, Robert was able to assemble a reference-quality system for about half the cost of similar showcase setups.



Marantz also had a lot to do with the system's being easy to use as well as an impressive performer. Instead of a profusion of separate remote controls, everything is controlled through one Marantz Mk II "learning" remote. "The remote was intimidating at first," says Robert, "but as I get used to it, I find that having all of the component controls integrated into one unit makes it more pleasurable to use the system.





The odds are against getting all of the elements in a system this complex right coming out of the gate. When you're using many of the components for the first time, in a new space. it's difficult to predict how they will interact with each other and with the room. In the weeks since the photos on these pages were taken, Robert has begun to have second thoughts about using dipoles for the surround speakers. "It was my decision to go with dipoles, not Jim Young's," he says. "Now I'm thinking that direct-radiating speakers might sound better in my room."

That issue aside, Robert feels he has achieved his goal. "Experiencing *Kundun* at home has taken me several levels higher in my audio/video evolution," he says.

— Michael Gaughn

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# popmusic



Hitchcock with director Jonathan Demme

# BEST OF THE MONTH Robyn Hitchcock/Storefront Hitchcock

obyn Hitchcock has been mistaken for an oddball, an alternativerock godfather, and Syd Barrett. That's what you get when you deal in vivid images and surreal wit and when you conjure the spirit of psychedelia as surely as Hitchcock does. The late '60s usually turn up somewhere in his songs as do sex, death, and amphibians - but he has long passed the line that separates the artists from the trendies. And although he has gone in and out of style a few dozen times by now, his catalog includes an embarrassing number of overlooked gems.

Storefront Hitchcock: Music from the Jonathan Demme Picture (Warner Bros., 62 min), recorded in December 1996 in New York for Demme's concert film, is about half new material and half retrospective, and it reaffirms Hitchcock's status as a classic-model British pop writer. "I'm Only You," originally on 1985's Fegmania!, is a reminder that he was writing lost Beatle songs long before Oasis was. And his loopier side turns up in "Freeze," where he reveals who wrote the Book of Love - and who should have done it instead. The new songs continue the

writing trend of his previous album, Moss Elixir, meaning that he's getting warmer and less macabre, more concerned with universal topics like romance (the giddy "Let's Go Thundering") and aging ("1974," one of the few "veteran rocker looks back" songs worth a second listen). The one borrowed entry, "The Wind Cries Mary," has to be the best Jimi Hendrix cover in years as Hitchcock connects with the song's gorgeous melody and melancholy.

But wait, as they say in infomercials, there's more! Anyone who's seen Hitchcock perform will know what's been missing from the studio albums: his betweensong intros, flights of free association that take wild leaps and resolve with a bizarre image as easily as with a good joke. That's what Demme apparently set out to capture in the concert film, which features Hitchcock with minimal staging and backup (violinist Deni Bonet and guitarist Tim Keegan both make tasteful cameos). The soundtrack includes a few prime examples of Hitchcock's wordplay, each given a separate track number (the vinyl version has an entirely different batch of intros and a few different songs as well), and they're alternately creepy and hilarious. Most telling, perhaps, is a bit of post-concert chatter at the end of the disc, where Hitchcock does some brilliant verbal riffing over falafel. Yes, he can probably do this in his sleep.

There's more good news. When he first signed to Warner Bros., Hitchcock said that his electric rock days were behind him. But he has since had a change of heart and completed work on a forthcoming band album, Jewels for Sophia, which may include an overdue reunion with his old Soft Boys guitarist, Kimberley Rew. For all the low-volume pleasures on Storefront Hitchcock, I still miss the sound of him doing heavier pop. And if the Jewels songs he has played lately are any indication, we're looking at two career peaks in a row. Brett Milano

#### ALANIS MORISSETTE

#### Supposed Former Infatuation Junkie (Maverick/Reprise, 72 min) \* 1

Because Alanis Morissette built a career out of romantic angst, she's in an odd position now: as a billion-dollar industry mobilizes behind her new album, she's out to prove she still has the same problems as the rest of us. It's not an impossible job, but it's one that this commercially savvy, creatively limited singer/songwriter just isn't up to.

Starting with the title — which sounds heavy enough, but what the hell does it mean? — Supposed Former Infatuation Junkie is a set of diary scribbles dressed up as major statements. Nearly half the lyrics amount to a rhyming list of some sort. In "Thank U" she throws together a bunch of spiritual buzzwords, begins every line with "Thank you" or "How 'bout," and comes out with a barely coherent jumble. "So Pure" makes promising offers --- "Let's discuss things in confidence / Let's be outspoken, let's be ridiculous" - but of course the song ends before she gets close to doing so.

It doesn't help that her coproducer, Glen Ballard, pulls out a ridiculous amount of sonic gimcrackery to prop up Morissette's increasingly shrill vocals. On "Are You Still Mad" alone, there are toy pianos, earthquake drums, and what sounds like a library

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# Top 10 Reasons Why the Music Business Went Nuts in 1998

10 CROSSOVER NIGHTMARES Or, "sure, I can do that": Cybill Shepherd sings the blues, Aretha Franklin sings Puccini, Vincent LaGuardia Gambini (a.k.a. Joe Pesci) "sings just for you,"



Phil Collins plays big band, violinist Vanessa-Mae plays "Hocus Pocus," Jewel publishes poetry, and Paul Simon flops on Broadway.

9 IS THERE AN EDITOR IN DA HOUSE? P.M. Dawn calls its new album Dearest Christian, I'm So Very Sorry for Bringing You Here. Love, Dad.

8 SPRINGTIME FOR PRODUCERS "Elvis: The Concert," "Bacharach: One Amazing Night," "Teen Idols Tour" with Peter Noone, Davy Jones, and Bobby Sherman, "The Christmas Angel Tour" with Dorothy Hamill and Mannheim Steamroller on ice, and *A Christmas Carol* starring Roger Daltrey as Scrooge.

7 MORE CROSSOVER NIGHTMARES Or, "sure, we can crossbreed music and sports": *Music of the World Cup, Greatest Sports Rock & Jams* (Vol. 3!), and *Extreme Championship Wrestling: Extreme Music*, not to mention Alexi Lalas's *Ginger* and Shaquille O'Neal's *Respect*.

6 MARILYN MANSON, GO HOME Michigan proposes a bill to ban minors from certain concerts. (The bill fails.)

5 GO AHEAD, CONFUSE ME! Was that album by Block or Bloque? Crumb or Crumbox? 12 Rods or 12 Rounds? Suncatcher or Pitchshifter? Perfume Tree or Porcupine Tree? From Good Homes or Far from Home or Far Too Jones or Farmer Not So John?!

**4 EVEN MORE CROSSOVER NIGHTMARES** Or, "sure, we can make a soundtrack of that." Tired of *Titanic*? Try soundtracks of computer games (*Myst, Riven*), comic books (*Songs of the Witchblade*), and even dolls (*Beyond Pink* with Barbie, Teresa, and Christie).

**3 A QUOTABLE HOOT** Atlantic's Val Azzoli in *Billboard* on Hootie and the Blowfish: "The band made the right decision to release *Fairweather Johnson* when they did. It did 400,000 the first week, so those people who are moaning and groaning should just stick it up their ass."



Nest with "Singer"

2 COVER GIRLS *Spin*, supposed alternative to *Rolling Stone*, puts Natalie Imbruglia on the cover. Not to be outbabed, *RS*, in four consecutive issues, unveils model Laetitia Casta, country crossover-and-out Shania Twain, TV jailbait Katie Holmes, and breast-beater Janet Jackson.



Editor and Publisher: Jann S. Hefner

1 THE ULTIMATE CROSSOVER NIGHTMARE I've been dying to do something all day, and I think maybe we can take care of this. . . . Peabo: Barney: Barney: Peabo. . . . I feel much better.

PREVIOUSLY UN-THOUGHT-OF, TWO-BIT-REMASTERED BONUS REASON! A year ago, Rhino joked that we'd better be on the lookout for a boxed set called *Hanson: The Prenatal Years*. Lo and behold, out pops an actual CD called *Hanson: 3-Car Garage, The Indie Recordings '95-'96*. Art imitates parody! Ken Richardson

of Led Zeppelin string samples. Too many tracks rely on overload when a simple hook would have sufficed, though nothing approaches the catchiness of "You Oughta Know." Which is probably why Morissette resorted to putting a naked picture of herself on the disc. Brett Milano

#### SHERYL CROW The Globe Sessions

(A&M, 59 min; enhanced CD)  $\star \star \star \star$ 

Sheryl Crow's third album is heavy on breakup songs, but the real news is how sharp and complex these breakup songs are, alternating between honest self-evaluation and lacerating putdowns. And the unlisted closing track is a breakup song of an entirely different sort: the first real deflation of the Clinton/Lewinsky/Starr hysteria to turn up on a rock album so far.

For those of us who had pegged Crow as a smart but inoffensive mainstream rocker, The Globe Sessions comes as a major surprise. In fact, she's now a lot closer to the creative cutting-and-pasting of an Aimee Mann or a Liz Phair, going less for the radio-ready hooks of "If It Makes You Happy" and more for subtler tunes, rougher arrangements, and sonic twists. The two-part "Am I Getting Through" is an experiment that works; the first part builds and broods, and the second is a manic rocker lasting barely a minute. When Crow gets an unreleased Bob Dylan song ("Mississippi," reportedly a Time Out of Mind outtake), she goes against type by turning it into a close cousin of "Raspberry Beret."

The multimedia content isn't special, but it delivers the videoclip for "My Favorite Mistake," a screen saver, lyrics that could as easily have been printed in the booklet, and access to a Web site promoting the album you've already bought. Brett Milano

#### ALLISON MOORER Alabama Song

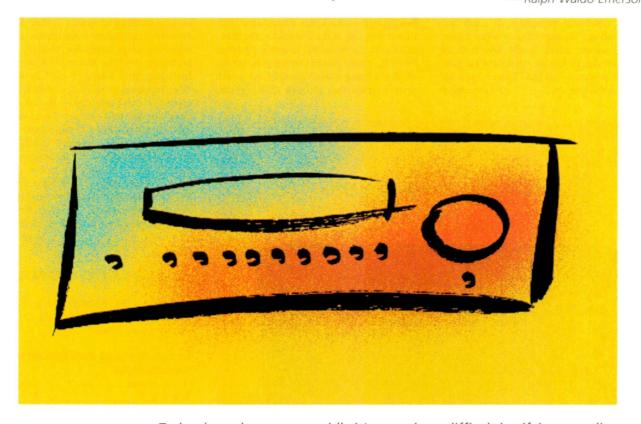
(MCA Nashville, 41 min)

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Newcomer Allison Moorer first separated from the pack when her song "A Soft Place to Fall" became a hit from the soundtrack to *The Horse Whisperer*. Now her debut album, *Alabama Song*, proves there's a lot more sultry soulfulness where that came from, but also plenty of sass, strength, and vulnerability. And it showcases one of the most arresting and solid talents to hit Nashville in a decade.

Moorer's unforgettable voice, so knowing and emotionally resonant, is put to the best test in her heartbreaking version of Walter Hyatt's bluesy "Tell Me Baby." But she also makes her mark as a writer, crafting songs that simultaneously evoke every deeply held and regal emotion of the Old South yet expand on modern values and sensibilities. It isn't every woman, for example, who can reverse the sexual stereo-

more simple than great Ralph Waldo Emerson



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types — she's the one dropping in for a night when things get lonely - and still pull off the spurned-female act with aplomb.

From her Buck Owens-ish "The One That Got Away" to "Is Heaven Good Enough for You," a personal meditation on death and redemption. Moorer defines what mainstream country music should have been all through the 1990s but seldom was: raw, earthy, powerful, and real. There's hope for the new millennium. Alanna Nash

#### TONIO K.

Rodent Weekend '76-'96 (Approximately) (Gadfly, 72 min)

\*\*\*\*

ong-time readers of this magazine will doubtless recall that some years back I described Life in the Foodchain, the debut release by iconoclastic singer/songwriter Tonio K., as the greatest album ever recorded. Was I being ironic? Possibly, but I have since awarded that accolade to every sub-

all theater. no gimmicks.



Funny, with all the synthetic effects and gimmicks available on today's A/V receivers - no one is talking about what really counts - delivering the best sound for the dollar. The NAD T770 surround sound receiver's unique design provides everything you need to enjoy a great movie or music. And, as with all NAD products, it maintains a reputation for true value, performance and simplicity.

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800.263.4641 www.NADelectronics.com NAD Electronics of America, 6 Merchant Street, Sharon, MA 02067 Lenbrook Industries, 633 Granite Court, Pickering, ON L1W 3K1 Dolby Digital and Dolby Pro Logic are trademarks of Dolby Laboratories Licensing Corporation. sequent Tonio set. In any case, Tonio no longer being quite the angry young man. it's nice to have Rodent Weekend, a collection of mostly funny/pissed-off early outtakes and vault plunderings. In its ahead-ofits-time punk/metal fusion, it feels like the Foodchain sequel he never made. Several legendary songs finally see the light of day, including the long-rumored "Everything, Including You, Disgusts Me" as well as "I'm Supposed to Have Sex with You" (recorded - don't ask why - for the soundtrack to the Carl Reiner flick Summer School) and the first CD appearance of the classic "Mars Needs Women," still the coolest putdown song of the millennium. And don't miss the liner-note list of songs left off the album, including "What's So Terrible About Heroin?" and "F -- k the Whales." Ah, those were the days. Did I mention that this is the greatest album ever recorded? Steve Simels

#### COLLECTIONS

#### **RED HOT + RHAPSODY:** THE GERSHWIN GROOVE

(Antilles/Verve, 70 min) \*\*\* BY GEORGE (AND IRA): RED HOT **ON GERSHWIN** (Verve, 73 min) \*\*\* HERBIE HANCOCK Gershwin's World

(Verve, 67 min) \*\*\*

mong the many releases marking the A George Gershwin centennial in 1998 are three potpourri homages served up by Verve, primarily a jazz label but here courting the pop market by focusing on Gershwin the composer of standards. Red Hot + Rhapsody is the most varied of the trio in terms of quality. With a cast of contempo performers, it offers, at worst, pastiches that just don't jell, such as Spearhead and Ernest Ranglin's hip-hop through "I Got Plenty o' Nuthin'." But with 17 cuts, you're bound to hit the mark now and then: Sarah Cracknell and Kid Loco's "The Man I Love" gets the mix of new-doom atmospherics and oldfashioned torchiness just right, and Luscious Jackson does an affecting "I've Got a Crush on You." Also more than just a game attempt is the collaboration by Angelo Badalamenti and David Bowie, "A Foggy Day (in London Town)," with the former's arrangement being portentously ethereal and the latter sounding almost human.

In comparison, By George (and Ira), a sampling from an earlier generation, sounds definitive. It's not just that the disc collects singers and musicians more comfortable with the idiom but that on a lot of these cuts you get them in their prime. Three versions of "The Man I Love" might seem a bit much if they weren't from Billie Holiday in 1939, Lester Young in 1946, and Miles Davis in 1954. And listening to Bill Evans's solopiano version of "I Loves You, Porgy" backto-back with Janis Joplin's "Summertime" is to gain a fresh appreciation of Gershwin's emotional range.

Herbie Hancock's Gershwin's World is almost as much of a stew as the two compilations, given disparate guest stars like Joni Mitchell, Kathleen Battle, and Stevie Wonder. And because this is Gershwin's "world," it includes compositions by influences Maurice Ravel, Duke Ellington, and James P. Johnson. Hancock is in an impressionistic mood, providing bright colors for Battle's wordless vocalizing in "Prelude in C-sharp minor" and essaying stark abstractions behind saxophonist Wayne Shorter's expressive smears in Duke's "Cotton Tail." Mitchell, sticking to the smoky low end of her register, sounds strained in her role as torch singer in "The Man I Love" and "Summertime," and Stevie Wonder sounds like . . . well, like he always does. Which isn't bad, but there's a gratuitous aspect to bringing in these big names; more Hancock (and Shorter!) would have made for a more coherent and satisfying disc. Richard C. Walls

JAZZ

#### JOE LOVANO

Trio Fascination, Edition One (Blue Note, 66 min) ★★★★

he archetypal trio album of saxophone, bass, and drums is Sonny Rollins's A Night at the Village Vanguard from 1957. and the drummer on that date was Elvin Jones - still as fierce now as he was 40 years ago and a key factor to the success of Joe Lovano's Trio Fascination. In the absence of piano, Jones is frequently called upon to fill a semimelodic role, which he does with confidence. And behind Lovano's solos, he's an elegant demon, as he was with John Coltrane in the '60s. This instrumentation places an added burden on a bassist, too, requiring him to supply some of the missing harmonic detail but not so much that he creates clutter. Dave Holland walks this fine line with determination and grace, and his solo in "Villa Paradiso" is as inventive as we have come to expect from him.

What about the leader? *Trio Fascination* is Lovano's ninth Blue Note CD, and each has been different. He seems to delight in meeting new challenges, and this may be the most demanding he has yet set for himself. But whether on tenor or on one of his other horns, Lovano turns the program into a tour de force, moving through eight of his ambitious originals and the standard "Ghost of a Chance" with a winning combination of brains and brawn. *Francis Davis* 

# QUICK FIXES

#### DAR WILLIAMS, LUCY KAPLANSKY, AND RICHARD SHINDELL Cry Cry Cry

(Razor & Tie, 50 min)  $\star \star \star \star$ The singer/songwriters turn a fun side project into an event. The blending of voices is miraculous, and the choice of material is magnificent, ranging from R.E.M.'s "Fall On Me" to Greg Brown's "Lord, I Have Made You a Place in My Heart." The trio sings of the driving force in us all: to make a meaningful connection. This album does that. In spades. Alanna Nash

#### moe. Tin Cans and Car Tires

(550 Music/Epic, 58 min)  $\star \star \star \star$ Emerging as one of the more vital of the Baby Dead bands, moe. has attained an impressive studio polish on its second major-label release without sacrificing the integrity of its edgy jams. The band flirts with styles from the complex insanity of "Spaz Medicine" to the simple balladry of "Letter Home," but the songs never lose an engaging zaniness. Andrew Nash

#### RAY BROWN Some of My Best Friends Are . . . Singers

(Telarc Jazz, 59 min) ★ ★

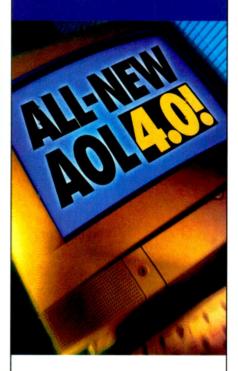
The latest in the bassist's *Best Friends* series features six vocalists, including Diana Krall, Dee Dee Bridgewater, and Nancy King (who fare well) as well as Kevin Mahogany and Marlena Shaw (who do not). And the sixth? Well, because she sings rings around the others, Telarc should have scrapped the herd-them-all-into-the-studio concept and given us *One of My Best Friends Is... Etta Jones.* Chris Albertson

#### BETTER THAN EZRA How Does Your Garden Grow? (Elektra, 58 min) ★★↑ DISHWALLA And You Think You Know What Life's About

(A&M, 51 min) \*

If this were still the Seventies, bands like Dishwalla and Better than Ezra wouldn't be up to their second and third albums, respectively. They'd be recognized as the quintessential onehit wonders they probably are. The more credible of these two albums is Better than Ezra's, balancing new sonic ambitions with catchy if insubstantial tunes in the first half but giving in to pretensions in the latter half. Dishwalla spends part of its second album (Continued on page 92)

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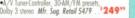


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# popmusic

#### (Continued from page 89)

whining about the success of its first one. Ultimately, the loudest thing here is the unmistakable sound of marketing. B.M.

#### FIRESIGN THEATRE

# Give Me Immortality or Give Me Death (*Rhino*, 46 min) $\star \star \star \star$

The late '90s may be strange and surreal, but the Firesign Theatre is up to the task of making them even stranger and more surreal. In fact, the original comedy foursome has done the near impossible by making a vintage Firesign album (in the form of a radio broadcast during the final hours before the new millennium), complete with headphone effects, blurred layers of reality, and multiple levels of wordplay. And, they've brought back their satiric bite. B.M.

#### DAVID S. WARE Go See the World

(Columbia, 68 min) ★ ★ ★

Avant-garde tenorman Ware finally makes his major-label debut, opening with a blues and also including "The Way We Were." Is he selling out? Hardly. Columbia bought the session from the tiny AUM Fidelity label. The blues is frantic. And "The Way We Were" is drawn and quartered over 14 minutes. Ware's eruptions are backed by pianist Matthew Shipp, bassist William Parker, and drummer Susie Ibarra. Worth a try even if you aren't a devotee of uncompromising free jazz. If you are, it's essential. *F.D.* 

#### WILLIE NELSON Teatro

#### (Island, 48 min) ★ ★ ★

After triumphs with Emmylou Harris on *Wrecking Ball* and Bob Dylan on *Time Out* of *Mind*, producer Daniel Lanois brings the same atmospheric aesthetic to this collaboration. His studio tricks work beautifully as he taps Harris to harmonize on most songs. Only one problem: of the 11 Nelson-written songs here, half are remakes dating back to the early '60s, and the new material suffers in comparison. In the end, *Teatro* is less a career statement than an illuminating trip through Nelson's back pages. *B.M.* 

#### EMMYLOU HARRIS Spyboy

(Eminent, 62 min) \* \* \* \*

No garden-variety live album, *Spyboy* is equal parts reinterpretation, reinvention, and reinvigoration. Although *Wrecking Ball* producer Daniel Lanois wasn't directly involved with *Spyboy*, his influence is evident in that Harris carried forward his understated, ambient approach from studio to stage. And she toured with his band: guitarist Buddy Miller, bassist Daryl Johnson, and drummer Brady Blade. This is where chemistry comes in: the combination of a folk/ country singer with a roots-oriented guitarist and a black New Orleans rhythm section makes for an inspired symbiosis.

Parke Puterbaugh

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# NOW ON CD

#### **OASIS** The Masterplan

(*Epic*) This gathers 14 U.K. B-sides and EP tracks — although Noel Gallagher has already called it a "ripoff," despite the fact that it was assembled by the band with the help of fans. Who loves ya, Noel?

GANG OF FOUR 100 Flowers Bloom

(*Rhino, two CDs*) Retrospective from 1979 to 1995: 40 tracks plus liner notes by *England's Dreaming* author Jon Savage.

#### NIGHT TRAIN: CLASSIC RAILROAD SONGS VOL. 3 (Rounder) TRAIN 45: RAILROAD SONGS OF THE EARLY 1900s (Rounder) HOT TRACKS:

TRAIN SUPER HITS (Epic)

The first "presents some of the best railroad songs recorded by African-Americans since 1929." The second draws from both Anglo- and African-American heritages. The third is a contemporary set with Johnny Cash, Willie Nelson, Waylon Jennings, etc.

#### **NICO** The Classic Years

(PolyGram/Chronicles) MARIANNE FAITHFULL A Perfect Stranger: The Island Anthology

(Island, two CDs) Two ladies. The years of the first are 1965 to 1974; the second haunts 1979 to 1995.

#### ALICE'S RESTAURANT

(Rykodisc, enhanced CD) FOOTLOOSE

(Columbia/Legacy)

Two soundtracks. The first celebrates the 30th anniversary of Arlo Guthrie's tale and includes the movie trailer. The second, just in time for the Broadway version, salutes the 15th anniversary of Kevin Bacon's, er, tail and includes four bonus tracks.

#### SONGS AND BALLADS OF AMERICAN HISTORY AND OF THE ASSASSINATION OF PRESIDENTS

(Rounder) From the Library of Congress: "Booth Killed Lincoln," "Mr. Garfield," "Charles Guiteau," "Zolgotz," and more.

#### **JOSHUA REDMAN**

### Timeless Tales (for Changing Times) (*Warner Bros.*, 64 min) $\star \star \star$

The saxophonist's quartet takes ten 20thcentury American pop songs — five from the classic era, five from the rock era and recasts them as vehicles for the group's well-thought-out, loose-limbed brand of mainstream jazz. Melody-rich tunes like "Summertime" and "Love for Sale" work fine. Not so the rock stuff, which owes its identity more to unique aspects of arrangement and vocals (the jabbing strings of "Eleanor Rigby," the homely sincerity of "The Times They Are a-Changin'"). Here, Redman & Co.'s clever arrangements are homogenizing and, in most cases, distant from the original spirit. The solos, though, are very good. R.C.W.

#### YOU AM I You Am I's #4 Record

(Ra/Wasabi, 38 min) ★ ★

Bad luck streak in American dancing school: After having their #3 (and best) record, *Hourly, Daily*, delayed by Warner Bros. in the U.S., Aussie heroes You Am I saw their new album delayed, too — and then, on the eve of its release, killed. Kudos to Wasabi for picking it up; if only it were as dropdead smashing as the previous disc. Still plenty of Jam punch but not enough Kinks pop. This band is worth investing in for the long haul, however. *K.R.* 

# **ROBERT EARL KEEN** Walking Distance (Arista, 50 min) **\* \* \* \***

On the best album yet of his spooky Texas poetry, Keen returns again and again to the subject of outsiders: those outside of the law, outside of love, and outside of themselves. If Keen hadn't found solace in the power of songwriting, he just might have been one of them. That's a key to emotional survival, but it's also a path to music that makes a difference. Recommended for the desperadoes in us all. *Alanna Nash* 

#### AUDRA McDONALD

### Way Back to Paradise (Nonesuch, 49 min) $\star \star \star \star$

When a semi-unknown like McDonald (who won Tonys for her appearances in *Carousel*, *Master Class*, and *Ragtime*) makes her solo debut, we expect the producers to compensate by placating the listener with, say, the Cole Porter Songbook. Yet McDonald has instead collated an adventurous program of "art songs" from various sources. That her voice is a very proper, not to mention stunning, soprano seems less important than her determination to fully inhabit these stories, transforming each into a moving slice of reality set to notes. *Will Friedwald* 

#### JOHN PATITUCCI Now

#### (Concord, 70 min) \* \* \*

### **THE CHRIS POTTER QUARTET Vertigo** (Concord, 63 min) **\* \* \* \***

John Patitucci, a good bassist and an interesting composer who has played in decidedly commercial milieus, says in the liner notes to *Now* that his thinking today goes more in the direction of John Coltrane and Ornette Coleman. That sounds good to me, but he's sometimes drowned out by guitarist John Scofield's AC-drenched work. Tenorist Chris Potter's playing here is engaging, however — and he's heard to even better advantage on his own album, *Vertigo*. His dialogues with fellow tenorman Joe Lovano on three tracks are the stuff that jazz should be made of. *C.A.* 

# **DON WILLIAMS I Turn the Page** (Giant, 43 min) $\star \star \star \star$

Six years after his last appearance on the charts, Williams returns with an album that

resonates truth, beauty, and, for the most part, commerciality. His style, a passionate embrace between country and folk, remains the same. And in his always relaxed baritone, he reminds us to slow down and take stock of what matters. *Alanna Nash* 

#### SPHERE

#### (Verve. 56 min) ★ ★ ★

With pianist Kenny Barron, bassist Buster Williams, and drummer Ben Riley all re-



### popmusic

# THE KINKS

A rdent fans of the Kinks (is there any other kind?) will find ample reason to deplete their savings with a cornucopia of exemplary CD remasters from both sides of the Atlantic. In England, Castle has regally retooled the early catalog, a treasure of punchy beat music, wry social commentary, and literate pop miniatures from Ray Davies, rock's finest songwriter. Castle's ten reissues represent the band's tenure on Pye (Reprise in the U.S.) from 1964's *Kinks (You Really Got Me* in the U.S.) to 1971's *Percy* soundtrack (unreleased here). As my parentheses imply, the U.K.

and U.S. discographies differed early on, making the first two Castle reissues indispensable. The debut LP had 14 songs in the U.K. and 11 in the U.S. The CD appends 12 bonus tracks for a 26track Kinksathon! And the CD for Kinda Kinks, their second U.K. album (their third here, after the

cobbled-together *Kinks-Size*), adds 11 tracks, among them "See My Friends," pivotal in Davies's maturation as a writer.

Thereafter, beyond another slapdash Stateside LP, *Kinkdom*, the U.S. and U.K. catalogs became congruent. So why shell out for these import CDs? Because each title has sparkling sound, rare artwork, serviceable liner notes, and bonus-track bounties. Witness *The Kinks Are the Village Green Preservation Society*, which pairs the 15-track U.K. mono version with a wildly differing 12-track stereo lineup that Davies originally submitted but shelved. *Live at Kelvin Hall* has been greatly improved; whereas the vinyl had muddy sound, the CD is much clearer. Something Else, their greatest collection of songs, is extended with eight extras. Also available: *The Kink Kontroversy, Face* to Face, Arthur or the Decline and Fall of the British Empire, and Lola versus Powerman and the Moneyground, Part One. More from the Castle goldmine: *The EP Collection*, a box of vintage European sides, and *The Singles Collection*, a 25track primer plus a bonus disc, *Waterloo Sunset: The Songs of Ray Davies*.

Enter Velvel, the U.S. label that's reissuing the Kinks' RCA and Arista catalogs. Velvel is eight deep so far, from 1971's Muswell Hillbillies to 1978's Mis-

> fits. Formerly, Rhino reissued the RCA LPs; comparisons reveal the Bob Ludwig-remastered Velvel HDCDs to be brighter and crisper, whereas Bill Inglot's equivalents on Rhino display more tonal balance. Velvel's booklets are filled with photographs and informative liner notes, but bonus-

track outlays vary. Ripe for rediscovery: Sleepwalker, an unheralded classic that holds its own with earlier masterworks. Five bonus tracks, including "The Poseur" and "On the Outside" (both unreleased), should have you sleepwalking to the store. Also available: Everybody's in Show-biz, Preservation Act 1 and Act 2, A Soap Opera, and Schoolboys in Disgrace. Still to come in '99 from Velvel: 1979's Low Budget through 1984's Word of Mouth plus new compilations, including a two-CD set devoted to Dave Davies's solo work. Currently available from EMI/Capitol: The Storyteller, a document of Ray's recent show of "musical words and spoken song." Parke Puterbaugh

The "hillbillies," circa 1971, with brothers Ray and Dave Davies at far left and right



turning and with alto/soprano saxophonist Gary Bartz replacing the late tenorist Charlie Rouse, Sphere still pays homage to Thelonious Monk, this time in "We See" and "Hornin' In." Also here are a handsomely delicate version of Billy Strayhorn's "Isfahan," a brace of originals by Bartz and Barron, and an uptempo "The Surrey with the Fringe on Top." *R.C.W.* 

#### JONNY LANG Wander This World (A&M, 53 min) ★ ↓

When labels like Fat Possum and Rounder are releasing scads of good blues records, you have to wonder why anyone would settle for a teenage hot dog like Lang. He can play flashy licks but not much else, and he sings like John Belushi imitating Joe Cocker. The album is homogenized further by the generic material and the arena-esque production. Recommended to anyone who really misses Pat Travers. *B.M.* 

#### RON CARTER TRIO So What (Blue Note, 47 min) ★ ★ ★ ★ ★ CHRISTIAN MCBRIDE A Family Affair (Verve, 66 min) ★ ★

Ron Carter has become — as he described himself to me several years ago - "the Mercedes-Benz of bass players." He doesn't just walk; he dances and moves through melodic lines with polished, unconscious grace. You can hear it in every track of So What, a trio album that also gets much of its strength from Carter's two long-time cohorts, pianist Kenny Barron and drummer Lewis Nash. Christian McBride is the current wunderkind of bassists, but A Family Affair is a mixed bag of jazz, R&B, and things verging on pop. Why would he stoop to trite material? The explanation comes in a press release: "to pull in some young fans" and "show them what they've been missing out on!" Huh? McBride may not yet be a Mercedes, but he has the potential. So why play Yugo on this album, eh? C.A.

# **LOVEMONGERS** Here Is Christmas $(b^2 Music, 36 min) \star \star \star$

SARI AND MARI KAASINEN Can We Have Christmas Now? (NorthSide, 38 min) \* \* \* \* VÄRTTINÄ Vihma

#### (Wicklow/BMG, 47 min) \* \* \*

BARRY

WENTZELL/VELVEL

I've checked my list twice, and there's still time to mention two more Christmas albums, each blending traditional carols with original material. The Lovemongers feature Ann and Nancy Wilson, continuing their resurgence outside of the confines of Heart. The Kaasinens are Sari of Finland's Värttinä and her sister, Mari, enchanting us in their native tongue. Värttinä's new album, by the way, is another traditional treat but lacks some of the modern edge that made me cuckoo for *Kokko* (Best of the Month, March 1997). *K.R.* 





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# **classical**music



# BEST OF THE MONTH Nielsen's Greatest Symphonies from Jukka-Pekka Saraste

n the last 45 years or so I have probably heard every recording of each of Carl Nielsen's six symphonies, and have treasured several. But the new recording of his two greatest symphonies, Nos. 4 and 5, by Jukka-Pekka Saraste leading his Finnish Radio Symphony (Finlandia/BMG 21439, 72 min) absolutely sweeps the field in every respect. Particularly in No. 4 ----The Inextinguishable, the Nielsen symphony most frequently presented in our own concert halls - Saraste, the orchestra, and the production team surpass themselves and, to my ear, all previous recordings of the work. Saraste's understanding of the magnificent score is profound and his commitment to it intense - you might even call

it ferocious, except that that term might suggest an abandonment of control. Together with the fire there is at every point a reassuring sense of balance and proportion, which avoids excess while allowing Nielsen's inspiration to flame unfettered.

In the Fifth Symphony, too, Saraste not only meets Nielsen on his own terms but again has his troops fired up with the inspiration of fresh discovery, of something like creation itself, which is what this music, like the Fourth, is all about. Whatever its customary ranking, the Finnish Radio Symphony as recorded in these two works is one of the world's great performing bodies, and Finlandia's superb recording manages to convey all the power and drama in the

VER MUSIC GRC

music without neglecting the warmth in Nielsen's expressive language. While this CD quite understandably encourages anyone with working ears to hope for the remaining four Nielsen symphonies from the same source, it is in its own right irresistible and indispensable — and my "record of the year" for 1998. *Richard Freed* 

#### BRUCKNER Symphony No. 1; Helgoland

Male Choirs; Berlin Philharmonic, Daniel Barenboim cond. (*Teldec 16646, 61 min*)

Only the Symphony No. 2 and the socalled "No. 0" remain to complete Daniel Barenboim's Berlin Philharmonic cycle of the Bruckner symphonies. The First, composed ten years before Brahms released his own Symphony No. 1, has a special character: no cathedrals in sound here but rather a youthful rumbustiousness that reveals itself most openly in the footstomping scherzo and in the brilliant fanfare figures that dominate much of the finale. The very opening bars predict the marchlike tread of Mahler's Sixth.

As in his other Bruckner performances, Barenboim offers a resolutely lyrical and rugged account of the work, using the somewhat raw-textured original score, and he is accorded excellent sound by the Teldec production team working in the Berlin Philharmonie. He has filled out the CD with the late and seldom-heard symphonic chorus *Helgoland*, a dramatic retelling of a mythic Roman invasion of the strategic island stronghold of true-believing Christians. The choral work is altogether splendid — powerful, dead on pitch, and handsomely enunciated. *David Hall* 

#### HANDEL Concerti Grossi, Op. 6

Academy of Ancient Music, Andrew Manze cond. (Harmonia Mundi 907228.29, two CDs, 157 min)

#### \*\*\*\*

t took Handel an entire month in 1739 to write his twelve Concerti Grossi, Op. 6 an average of two whole days per concerto! — not that these wonderful and varied works show any sign of haste. Although perhaps not as deep as the Bach *Branden*-

| STAR S    | YSTEM |
|-----------|-------|
| Stellar   | ****  |
| Excellent | ****  |
| Good      | ***   |
| Fair      | **    |
| Poor      | *     |

*burgs*, they show at least as much technique and even greater range. The variety displayed by their fugues and concerted movements, dances and arias, allegros and largos is nonstop. These works were in the repertoire of the original 18th-century Academy of Antient Musick and, fittingly, are staples of its latter-day successor, of which violinist and conductor Andrew Manze is director and concertmaster.

Manze is the rising star of early-music performance, and these readings — which he leads from his concertmaster's desk of works that are at the heart of the late-Baroque instrumental repertoire confirm his reputation. As varied as the music itself, the performances overflow with nuance, freshness, exuberance, and tender expression while maintaining a big line, pacing, phrasing, dynamic contrast and balance.

St. John's Church in London, which dates from the same period as the music, is one of the uglier examples of the late, eclectic, derivative British Baroque, but with decidedly beautiful acoustics. It is the perfect locale for the recreation of late, eclectic music that is the very opposite of ugly and derivative. *Eric Salzman* 

#### RAVEL

Rhapsodie espagnole; Menuet antique; Ma Mère l'Oye (ballet version); La Valse (Philips 454 452, 59 min)

Alborada del gracioso; Le Tombeau de Couperin; Valses nobles et sentimentales; Boléro

(Philips 456 569, 63 min) Boston Symphony, Bernard Haitink cond.

ernard Haitink's recording of Ravel's Baphnis and Chloe with the Boston Symphony, issued only eight or nine years ago, was no great shakes sonically and appears to have been withdrawn. These two new discs, however, recorded as far back as 1995, are gorgeous sonically (although in several works the principal flutist is given too much prominence), and the performances themselves are more fetching. Haitink has lived with this music for a long time, and so has the Boston orchestra, dating back to when the incomparable Pierre Monteux was its conductor. The playing is distinguished in virtually every respect and -particularly in such works as Le Tombeau de Couperin, where the winds cover themselves with glory, and the full ballet version of Mother Goose (Ma Mère l'Oye) - luminously evocative on a level that bespeaks utter conviction.

While Haitink's approach seems to exemplify the idea that if all the instructions in Ravel's scores are followed meticulously the interpretation will take care of itself, other conductors manage to do a bit more than that without getting in the composer's way. Haitink's readings are eminently sound,

# A Window on Rachmaninoff

Sergei Rachmaninoff's first recording, of his famous C-sharp Minor piano prelude, was made in 1919 for Thomas Edison, and in the same year he cut the same work on Ampico piano rolls for playback on that firm's reproducing piano. For disc recording he quickly switched to the Victor label, for which he recorded until 1942, the year before his death. But he also continued to

make Ampico rolls until 1929, by which time the technology had become passé.

A reproducing-piano roll, as distinct from a "player piano" roll, was encoded to include dynamic nuances and *rubato*, and playback on a properly maintained and adjusted instrument afforded a convincing facsimile of the original performance. Even the best reproducing pianos, though, were

no match for the Steinway and Bösendorfer concert grands favored by virtuosos, so for roll-to-disc transfers there was developed a device called the Vorsetzer, which could be rolled up to a concert grand and "play" on the keyboard from the reproducing-piano roll. In the late 1960s the British Argo label produced some notable LPs using this technology.

The new Telarc CD of Rachmaninoff piano-roll performances from 1919 to 1929 is a comparable achievement. It uses a new computer technology that transfers the information from an elec-

but in some of these familiar pieces they seem a tad perfunctory compared with other recorded versions. *Richard Freed* 

#### SHOSTAKOVICH Quartet No. 8 WEBERN Langsamer Satz BURIAN Quartet No. 4

Rosamunde Quartet (ECM 21629, 47 min)

Shostakovich's grimly autobiographical Eighth Quartet is currently represented by at least a dozen recordings. The distinguishing aspect of the Rosamunde Quartet's reading is its emphasis on the lyrical element, with much less of a hard edge than in most other versions. tronically reconstructed piano-roll master directly to a Bösendorfer 290SE reproducing piano. As with the 1960s Argo LPs, the piano is recorded in an ideal acoustic surround. The results are stunning. All the majesty, uncanny velocity, and tenderness of the composer's playing are there, together with enormous dynamic range.

The repertoire includes a dozen Rachmaninoff originals,

starting with the Csharp Minor prelude, delectable transcriptions from Schubert, Kreisler, Bizet, Mussorgsky, and Rimsky-Korsakov, and a singularly imposing version of "The Star-Spangled Banner." Rachmaninoff also recorded all but three of the 19 pieces for Victor discs, and these performances can be heard in an RCA Victor CD set of his

"complete recordings." The Telarc versions are superior from the sonic standpoint save for a certain hardness of attack and release that does not occur in the disc recordings with their genuine human touch. It should also be noted that Rachmaninoff used Steinway pianos, not Bösendorfers. Those cavils aside, the Telarc CD is a fascinating listening experience. David Hall

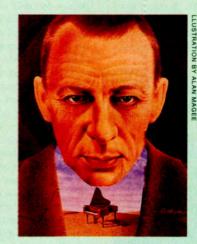
#### A WINDOW IN TIME

Sergei Rachmaninoff, piano rolls (Telarc 80489, 65 min)

Webern's Langsamer Satz ("slow movement") dates from 1905, prior to the composer's espousal of "atonal" expressionism. It is, in effect, an exquisite tribute to the cousin who eventually became his wife. Think of Schoenberg's Verklärte Nacht condensed to something like 10 minutes. This performance is a well-considered one, but not quite as fine-grained as that by the Carmina Quartet on Denon.

Most interesting here is what appears to be the first appearance on CD of music by the Czech composer Emil Frantisek Burian (1909-1959), a warm and convincing performance of the somber Fourth Quartet (1947). I hear some Shostakovich in the

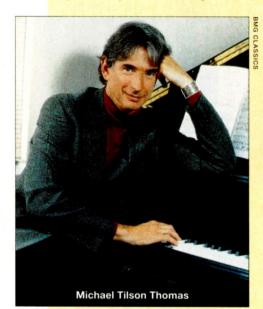
JANUARY 1999 STEREO REVIEW 97



### **classical**music

# **Gershwin and All That Jazz**

Jazz at the Philharmonic! Between Hindemith's loud, bouncy, neo-Bachian *Ragtime* of 1921 and John Adams's loud, bouncy *Lollapalooza* of 1995 lies three-quarters of a century in which symphonic composers were time and again tempted by forbidden fruit. Is the result jazz? Of course not: jazz is a performers' art, and symphonic music belongs to the composer. But all of the pieces on Michael Tilson Thomas's new CD with the young New World Orchestra, titled *New World Jazz*, are marked by the vitality and the color of jazz as it



came to inflect and even change the European symphony orchestra.

Darius Milhaud's brilliant and moving 1923 La Création du monde is one of the most successful and moving of the early European attempts to jazz it up. George Antheil, an American in Europe and probably the first symphonic composer to incorporate elements of jazz, is represented by a real rediscovery: the neat, unjustly forgotten, and truly jazzy Jazz Symphony of 1925. Both Leonard Bernstein's Prelude, Fugue and Riffs (bigband jazz hot) and Stravinsky's Ebony Concerto (Neoclassical non-jazz cool) are Woody Herman commissions from the 1940s. The last piece on the CD, David Raskin's theme from the 1952 film The Bad and the Beautiful, is a bit of schmaltz that seems to have nothing to do with the rest.

When it comes to mixing jazz and classical music, George Gershwin was

there almost at the beginning. The George White Scandals of 1921 included (at least briefly) a one-act "blues opera" by the 23-year-old prodigy. Rhapsody in Blue appeared in 1924 and the Concerto in F (originally called "New York Concerto") only a year later. Other big pieces — An American in Paris, the socalled Second Rhapsody (originally called "Rhapsody in Rivets"), Porgy and Bess — followed in the next ten years.

Since Bernstein's death, Thomas has assumed a special role as the Gershwin interpreter for our time. *New World Jazz* features *Rhapsody in Blue* and offers the very Bernsteinian spectacle of a dynamic conductor directing young musicians from the keyboard. In another new release, Thomas, now music director of the San Francisco Symphony, features that orchestra in a big (two CDs' worth) Gershwin centennial program put together with his typical panache.

Gershwin's own Porgy and Bess suite, published after the composer's death under the title Catfish Row, has here been amplified and turned into a major overview of the opera by the insertion of actual scenes (beautifully sung by Audra McDonald and Brian Stokes Mitchell). The Second Rhapsody's original orchestration was presumed lost after the composer's death. Thomas found it, and he inspires the San Francisco players to hit it hard, taking the solo part himself at full tilt, crossing clangorous virtuosity with a rhumba beat, a big modern-music sound, and cocktail party pianism; he even adds a piano cadenza, as Gershwin himself is known to have done. The result is completely fresh to my ears. The second disc offers equally satisfying performances of An American in Paris - for once, it's not the least bit kitschy but firm, listenable, exciting, and entirely believable — and the Concerto in F. dynamically played by an inspired Garrick Ohlsson. Eric Salzman

#### NEW WORLD JAZZ

New World Symphony, Michael Tilson Thomas cond. (*RCA Victor 68798, 68 min*) ★ ★ ★

#### GERSHWIN

#### The 100th Birthday Celebration

Audra McDonald, soprano; Brian Stokes Mitchell, baritone; Garrick Ohlsson, piano; San Francisco Symphony, Michael Tilson Thomas piano and cond. (*RCA Victor 68931, two CDs, 111 min*)

\*\*\*\*

two final movements, possibly stemming from the Russian composer's visit to Prague. The recorded sound is more intimate than in other ECM releases I've heard, having a warm theater ambience rather than a church acoustic. David Hall

#### COLLECTIONS

#### **RENÉE FLEMING**

I Want Magic! (American Opera Arias) Metropolitan Opera Orchestra, James Levine cond. (London 460 567, 58 min)

+++ W hat a gorgeous CD! Here is the first recording of Blanche's aria from André Previn's new opera based on the Tennessee Williams play A Streetcar Named Desire. There's more: two songs from Gershwin's Porgy and Bess and a pair of arias from Carlisle Floyd's Susannah, sumptuous performances of arias from Stravinsky's Rake's Progress, Samuel Barber's Vanessa, and Bernard Herrmann's Wuthering Heights, the "Letter Song" from Douglas Moore's Ballad of Baby Doe, "Monica's Waltz" from Menotti's Medium, and Bernstein's "Glitter and Be Gay" from Candide. What could be wrong? Why award it only three stars?

Maybe it's all just too consistently gorgeous. Blanche Dubois, the inhabitants of Catfish Row, Susannah without the Elders, Anne Trulove, Vanessa, Emily Brontë's tragic heroine, the worldly-wise Baby Doe, the girlish Monica, and the set-upon, ever-innocent Cunegonde - these are vastly different characters, and their musical voices, often close to the American vernacular, are equally wide-ranging. But soprano Renée Fleming is never less than the great diva, and she has what is basically a single grand, tragic manner, which is truly appropriate to perhaps two and half of these arias. You will never hear a better-sung "Summertime," but it has nothing to do with Porgy and Bess. Rather than lifting all these characters up to grand operatic heights, the vocally (and orchestrally) thrilling performances seem almost condescending. Eric Salzman

#### **BEN HEPPNER** Dedication

Craig Rutenberg, piano (*RCA Victor 63104, 68 min*)

\*\*\*\*

Tenor Ben Heppner's uncommonly fine recital, an imaginative program executed with care and insight, reveals new dimensions of an artist known heretofore mainly through his outstanding operatic performances. The all-German program begins with a brisk and straightforward rendering of Beethoven's youthful "Adelaide" that avoids excessive sentiment. It ends with a reading of the mature Beethoven's "An die ferne Geliebte" in which the five interlinked poems are subtly unified, benefitting from pianist Craig Rutenberg's skillful management of the transitions.

The four songs of Richard Strauss's Op. 27 are excellent in their different ways. The alternating pensive and stormy moods of *"Ruhe, meine Seele"* are effectively contrasted. *"Cäcilie"* has dramatic fervor and firm climaxes, and *"Heimliche Aufforderung"* is suitably ecstatic. *"Morgen,"* perhaps the least suited to Heppner's dramatic voice, is nonetheless sensitively sung and involving. There are some individual touches in his rendition of the seven songs of Schumann's *Myrthen*, Op. 25. *"Widmung,"* for instance, is unusually fervent rather than tender.

The most provocative selection is Liszt's three Petrarch sonnets. The varied and wideranging vocal parts are partly helped and partly hindered by Liszt's original pianistic concept for these works. If Heppner's readings do not exhibit a *bel canto* smoothness, the musical demands are fearlessly met, the artist's technique triumphing over some difficult passages across the register break.

George Jellinek

#### **HEI-KYUNG HONG Arias**

Orchestra of St. Luke's, John Fiore cond. (RCA Victor 68881, 60 min)

n this recital of eleven familiar, mostly French and Italian opera arias, Hei-Kyung Hong, a gifted Korean-born, Juilliard-educated soprano, displays a warm and rounded tone, confident ease in the upper register up to a secure E-flat, and agility in passage work. She meets the diverse challenges of Mozart's "Dove sono" and "Ach, ich fühl's" with as much poise and security as she does the contrasting character studies of Gounod's perky Juliet and Bellini's melancholy Giulietta. Her "Caro nome" comes off with a pearly coloratura, and her Norina (Don Pasquale) sparkles with the requisite sauciness. Her otherwise reliable intonation is marginally impaired in the extended Traviata sequence, but not enough to detract from the overall satisfaction of this CD.

The soprano gets fine orchestral support, but in two cases ("*Depuis le jour*" and "*Ruhe sanft*") a broader tempo and more expansive phrasing would have enhanced the emotional effect. *George Jellinek* 

#### JACARAS!

#### 18th Century Spanish Baroque Guitar Music of Santiago de Murcia

Paul O'Dette, Steve O'Brien, Steve Player, Baroque guitars; Andrew Lawrence-King, harp and psaltery; Pedro Estevan, percussion (Harmonia Mundi 907212, 78 min)

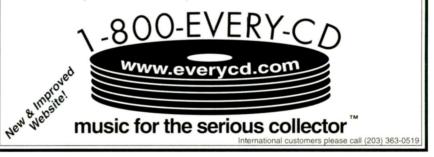
Santiago de Murcia was master guitarist and guitar master to the Spanish royals as well as composer and arranger of the sensational new dances that were com-



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ing into favor: *jotas, gallardas, zarambeques, passacalles, fandangos, cumbées, canarios*, and so on. *Jácaras* are here defined as "a group of scamps and high-spirited people who walked around at night making a racket and singing in the streets" something like the *majos* and *majas* painted by Goya a few decades later.

The one-time liveliness and boisterousness of Spanish public life, from the royal court to the streets, is almost forgotten today, but rich, colonialist Spain was the point of entry for the scandalous and sexy new dances from Africa and the Americas. There was a kind of street-chic alliance between the rough and tough lower classes, who sailed the ships and loaded the cargo, and the young bloods of the upper classes, ready to pick up the latest craze from Latin America or Africa via the slums of Madrid and Naples. De Murcia, who seems to have traveled to Mexico and Italy, is one of those shadowy historical figures who have long been overlooked but whose influence on music history is probably greater than that of many more famous musicians.

Paul O'Dette and Andrew Lawrence-King here continue their work in uncovering the traces of many a forgotten past. This is not dry musicology but lively recreation featuring dancing guitars, harps, castanets, and tambourines. Much of this surprisingly contemporary-sounding material needs no musicological excuse at all for being released on CD, although it is all based on authentic 18th-century sources. Here are some early roots of world music in the form of a very enjoyable, perfectly modern earlymusic album. Eric Salzman

#### LOST MUSIC OF EARLY AMERICA Music of the Moravians

Boston Baroque, Martin Pearlman cond. (Telarc 80482, 65 min)

he Moravian Brethren's settlements in colonial Pennsylvania and North Carolina created an abundance of music for their religious services and also some chamber music of more than passing interest. In this stunning Telarc collection, the Boston Baroque performs no fewer than 32 fascinating pieces from this rich but neglected treasury of early American music, most of them choral and most of them new to recording.

Director Martin Pearlman has grouped the 29 choral pieces into three "Lovefeasts," for Christmas, Lent, and Thanksgiving. Some numbers are more or less in the tradition of Bach's chorales but simpler in construction and earthier in their musical language; the period-instrument players in Pearlman's ensemble make the most of the intriguing accompaniments. The fine trombone choir is shown off in two brief numbers without voices, and the program concludes with an extended rondo for fortepiano solo by John Gambold.

It's all done as winningly as we would expect from the musicians who have given us such inspiriting accounts of the *Brandenburgs* and *Messiah*, the sound is beautifully tailored to the music, the documentation is first-rate (with full texts and translations), and there's a 22-minute bonus CD on which Pearlman discusses the music and its composers, illustrating his remarks with examples from eight of the pieces. A uniquely valuable rediscovery. *Richard Freed* 

#### **CHRISTINE SCHÄFER**

#### Mozart Arias and Strauss Songs

Berlin Philharmonic, Claudio Abbado cond. (Deutsche Grammophon 457 582, 65 min) ★★★★

Christine Schäfer's light lyric-soprano voice seems to be the ideal medium for this program. Mozart's "*Nehmt meinen Dank*" (KV 383) is neatly ornamented, and the two "insert arias" (KV 416 and KV 418) exhibit all the virtuosity needed, including the altissimo high Fs. The surefire "*Ch'io mi scordi di te?*" (enriched by the pianism of Maria João Pires) is delivered with a classic poise, the ravishing "*Ruhe* 







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# QUICK FIXES

#### HAHN La Belle Époque

Susan Graham, mezzo-soprano; Roger Vignoles, piano (Sony 60168, 62 min) ★★★

A transplanted Venezuelan who studied under Massenet, Reynaldo Hahn composed highly refined art songs that epitomize the perfumed aestheticism of the salons of *fin-de-siècle* Paris. His particular genius was his sensitivity for the language of poetry, which seems to give birth magically to his melodies — sometimes lilting, at other times melancholy. Graham's vibrant, amber-hued voice and fine French diction are ideally suited to this material, and she is ably accompanied by Roger Vignoles in a warm, intimate recording. Jamie James

#### **HOLST** The Planets

Atlanta Symphony, Yoel Levi cond. (*Telarc* 80466, 49 min) **\* \* \*** 

Levi shows an instinct for natural phrasing and an overall belief in this big, colorful suite that recall such great interpreters of the past as Adrian Boult and the undervalued Walter Susskind. The orchestra comes through brilliantly, and Telarc's splendid surround-encoded recording is still splendid in two-channel playback. I miss the usual organ glissando in "Uranus," and you might expect a second work on a full-price CD, but in every musical and sonic respect this is definitely top-tier. *R.F.* 

#### LISZT Sonata in B Minor; Deux Légendes; Gretchen

Jeno Jando, piano (*Naxos 8.553594*, 69 min) ★ ★ ★

Jando gives a cogent, clarifying, if not outstanding account of the B Minor Sonata. The disc is well worth its modest price for his poetically illuminating *Two Legends* and for Liszt's own piano version of "Gretchen" from *A Faust Symphony* — not a mere transcription but a thoroughly pianistic piece built on the same materials. Jando gives it his all, which is considerable. The recording is realistic and well focused. *R.F.* 

# **RAMEAU** Suites from "Platée" and "Dardanus"

Philharmonia Baroque Orchestra, Nicholas McGegan cond. (*Conifer/BMG 75605*, 75 min) \* \* \*

McGegan has made orchestral suites out of Rameau's *Platée*, a Baroque French musical comedy in drag, and *Dardanus*, one of his earlier and deadly serious lyric tragedies, by putting together each work's overture, dances, and some of the scene music. These strings of gems glitter even if they don't always hang together well. The performing style is vigorous and biting, the Skywalker Ranch sound even more so, with an edge to it that is profoundly un-Baroque. *E.S.* 

#### SCHUBERT Lieder

Ian Bostridge, tenor; Julius Drake, piano (EMI 56347, 69 min) ★★★★

In addition to precise diction and tonal beauty, Bostridge brings unusual sensitivity to the texts of 22 of Schubert's best-loved songs. His effective, idiomat-



ic performances display considerable emotional variety, ranging from lyrical happiness ("*Seligkeit*") to chilling drama ("*Erlkönig*"). This CD ranks with the best issued during the 1997 Schubert bicentennial. *William Livingstone* 

#### VIVALDI The Four Seasons PIAZZOLLA The Four Seasons in Buenos Aires

Jolanda Violante, piano; I Solisti Italiani (Denon 18036, 70 min) ★ ★ ★

Lilt and verve characterize this chamber ensemble's stylish performance of Vivaldi's *Four Seasons*, Baroque depictions of the bucolic lives of jolly Italian peasants. In a stunning contrast, I Solisti show equal virtuosity in Piazzolla's modern, jazz-inflected, dissonant, and rather melancholy view of urban life in Buenos Aires in the course of a year. *W.L.* 

#### JOHN WILLIAMS The Guitarist

Orchestra, William Goodchild cond. (Sony ASK 60586, 63 min) ★ ★ ★

This album of sweet, modal guitar music features Williams's own alternately serious and determinedly jolly *Aeolian Suite*, solo works by Mikis Theodorakis (*Three Epitafios*), Carlo Domeniconi (*Koyunbaba*), and Philip Houghton (*Stélé*), arrangements of music by Satie, and a trio of medieval tunes. The Houghton has some bite, but most of the rest is high-brow background music, though played and recorded with skill and affection. *E.S.*  *sanft*" from the opera *Zaide* with neat, unexaggerated sentiment.

The Richard Strauss songs require a different kind of virtuosity. "Wiegenlied" calls



for a long, winding legato arch, as does the breathtakingly beautiful "Morgen." "Das Rosenband" and "Liebeshymnus" are rarely heard, and the 1933 "Das Bächlein" is even rarer. These three are not among his greatest songs, but delivered with the tonal purity, security of attack, and soaring line evident here, they reward listening. Claudio Abbado and the orchestra provide masterly support throughout. George Jellinek

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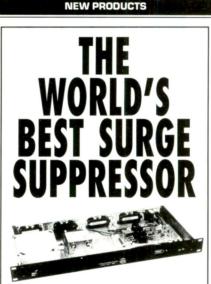
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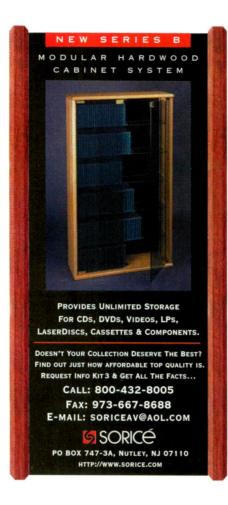




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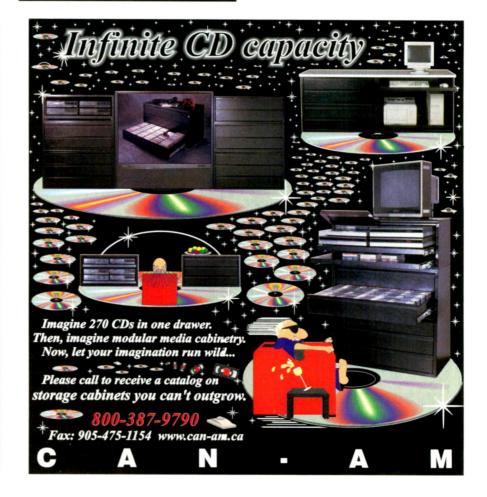
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#### STEREO REVIEW

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# **Dylan '66 Revisited**

I JUST BOUGHT the best CD I heard in all of 1998, Bob Dylan's two-CD set *Live* 1966 (Columbia Legacy). This is the official release of the most infamous live rock bootleg of all time — the May 17, 1966, set Dylan played in Manchester, England, for an audience of horrified, squinch-faced folkies who rejected his new electric rock songs so totally that he blew a gasket and angrily mowed them down with one of the most hateful, glorious displays of distorted rock & roll ever scorched onto magnetic tape.

If you're a Dylan fan, you were probably standing in front of me in line at Best Buy with your copy already in your eager mitts. If you don't have this CD set yet, by all means go to the store and plunk down your \$22, because I promise that you didn't hear anything new even half as good in 1998, the worst year for rock music since 1997.

I've been reading about this mythical Dylan performance for years without ever hearing a lick of it till now. To be sure, I could've ponied up the 50 bucks or so years ago for one of the many "genuine" bootlegs of this concert that have been floating around, but I didn't. Not out of any kind of misguided sense of right and wrong, mind you — I'm just cheap!

Hell, I *love* bootlegs. They can be the best recordings of an artist you'll ever hear. Just last month I burned a CD-R of my brother's copy of George Harrison's *Beware of Abkco!*, a notorious bootleg on the Strawberry label that features the solo vocal and guitar demos for the classic *All Things Must Pass* album. I don't know how this stuff escaped from the studio, but it did, and any fan of *ATMP* will freak out just as bad as I did when they get to hear this bootleg.

Most boots have pretty crappy sound, as they mostly originate from a dub of a copy of a dupe of a stolen cassette, but I swear this Harrison bootleg CD sounds like it was mastered in real time from the mixing desk. Just George's haunting voice alone with his magic guitar circa 1971, sounding cleaner and clearer than most recordings circa now, banging out all those great songs that made *ATMP* by far the best of the Beatle solo albums, without any of that murky, tinny glaze Phil Spector hamstrung these songs with in the final mix. I swear, I think I like the bootleg even more than the original record! No matter what some grownups tell you, bootlegs are a good thing, and if you love music you should check out as many as you can.

The performance captured on *Live* 1966 came during Dylan's pivotal European tour of that year, where he would come out with just an acoustic guitar and a harmonica and play a solo acoustic set for his purist folk fans. That's what you hear on the first CD of the two-disc set, and even though I'm not a huge fan of Dylan's early folk stuff, I have to say that this disc is a treat to hear. Dylan's in peak form, and he weaves his way through such signature songs as "Visions of Johanna" and "It's All Over Now, Baby Blue" with such mastery of the form that you can hear the sound bounce off the

and you can actually hear it thud against his noggin and drop him flat on his back — ah, the miracle of high fidelity). Dylan and Robbie Robertson crank their guitar amps all the way up to drown out the boos as they plow through new songs like "Leopard Skin Pillbox Hat" and "Tell Me Momma," and the mood gets uglier and uglier till finally some selfrighteous folkie cries out, "Judas!" between numbers, and the crowd laughs and applauds him.

Now, Dylan had been faced with loud and unpleasant reactions all through this tour, from audiences and critics alike, to his new marriage of folk lyrics and loud electric rock — original drummer Levon Helm had even quit the tour before it went to Europe because he couldn't handle the vicious, overwhelmingly negative reaction Dylan's electric band set had been receiving. But when that kid calls Dylan by the name of the traitor of all traitors, you can practically feel, even  $33\frac{1}{3}$  years later sitting in front of your stereo, a chill suddenly sweep across the

# **Music historians** have called this Dylan performance the most confrontational rock concert ever recorded.

back wall of the hall without so much as an interruptive cough from the spellbound audience.

Then, after about 40 minutes of this acoustic bliss, the roadies wheeled out the big guitar amps and drums, to the utter dismay of the folkies who saw Dylan as their own Woody Guthrie. Dylan came back on wearing a mod black suit with pitch-black Ray-Bans wrapped around his face and an electric Fender Telecaster guitar resting on his hip, followed by a backing group of hot Canadian rhythm & blues musicians who would later become The Band. This is the infamous set captured on the second disc of *Live 1966*, and this is where all hell really and truly breaks loose.

Music historians have called this performance the most confrontational rock concert ever recorded (although I'd give that honor to a bootleg I've got of the last Iggy and the Stooges concert, where Iggy drunkenly baits the crowd till someone finally chucks a beer bottle at his head, stage. Dylan menacingly shoots back with, "I don't believe you!" and then, "You're a liar!" as the band starts to tentatively fall in behind for the last song. Then Dylan turns away from the mike and yells to the band, "Play it f---in' loud!" and the next sound you hear is either Lee Harvey Oswald's bolt-action rifle cracking across Dealey Plaza or drummer Mickey Jones's apocalyptic rim shot that kicks off the loudest, meanest, most awe-inspiring version of "Like a Rolling Stone" Dylan or anyone else has ever laid down. Dylan spits the words at the crowd as if he's swearing at them, the band pounds their instruments as if they want to break them in half before the end of the song, and you can thank whatever god you pray to that Columbia's recording engineers had a tape machine rolling to capture these sounds that have never been made before or since.

It's dirty, 1.0-channel non-surround sound, and you won't hear anything better in 1999, either.

# "Do you really need new speakers?"

#### Matt Polk, Speaker Specialist

aybe you don't need new speakers. Maybe you do. Here are some tips on how to know whether or not it's time for a change.

#### Do they work right?

The first thing to check is the woofer surround – the rolled edge of the driver. If it's made of compressed foam and more than 5 years old, it may be shot. Are there any holes or tears? Gently touch the surround, if it feels brittle, stiff and ready to crumble, you need new woofers. If the surrounds are rubber they're probably perfect.

The next thing to check is whether all the drivers are making sound. Play the speakers with the grilles off. Lightly touch all the drivers to feel if they're moving. Cup your hand over the tweeter, remove it. Does the sound change? If not, the tweeter is dead. Play a solo piano recording at a moderate loud level. If you hear scratchy sound or a buzz, the midrange or tweeter may be damaged.

If you have any doubts, bring the speakers in to a local audio store and ask them to check them out. Most dealers will be happy to help.

#### Are you happy with the sound?

Do they sound great with all the kinds of music you're listening to today? Some speaker companies voice their speakers to sound good with certain types of music (a bad policy in our opinion). If your musical tastes have changed since you bought your current speakers, it might be time for something better. But if you're really happy with the sound – stick with what you've got.

#### www.polkaudio.com

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#### Do they look good? Do you care?

Do your current speakers look appropriate and fit comfortably in your room? Has your significant other banished them to behind the couch? Don't laugh, I know a household where that happened. Today's speakers are generally smaller and better looking, with better performance than speakers of ten years ago.

# What will you do with the money you save?

If looks and size are not an issue, if everything's working OK and you like the sound, save your dough. Buy some new CDs or a DVD player or some flowers for your partner.



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find that it's a lot more complicated than buying a pair of speakers. But the rewards are greater, too. Call (800) 627-7655 ext. 101 for your free copy of the Home Theater Handbook. It's full of practical, unbiased advice on how to select and get th∈ greatest performance from a home theater system.

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