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

It has long been assumed that bigger equipment means better sound. Not anymore. Bose® Lifestyle® systems allow you to enjoy better sound with less clutter, less equipment and less complication. Unlike conventional “components,” every part of a Lifestyle® system is engineered to work together as a whole. For performance, each element is acoustically matched. For simplicity, many controls are automatic, which means you can do just about anything by pressing only one button. And everything is smaller. * A single, 2½” high music center replaces an entire rack of electronics and includes a built-in CD player and AM/FM tuner. * Tiny Jewel Cube® speakers are about the size of a computer mouse. And hidden away out of view is the Acoustimass® module for purer, more natural bass. Your favorite music, movies and sports programs will come to life in a way you simply cannot imagine. * Home Theater Technology summed it up by saying, “Everything is included and carefully thought out... The performance is awesome.” * Please call for your complimentary guide to our Lifestyle® music and home theater systems, and for Bose dealers near you. Then compare the size of Bose sound to the sound of the biggest equipment you can find.
Or is it the size of the sound?

Is it the size of the equipment?

© 1997 Bose Corporation JN98107G  "From a review of the Lifestyle 12 home theater system

CIRCLE NO. 41 ON READER SERVICE CARD
MY CAR IS MY
MY LOVE
MAKER,
RACER
I WILL
DESECRATE
HOLY TEMPLE,
SHACK, MY DONUT
MY DRAG
OF DOOM.
NOT
ITS DASHBOARD
WITH AN ILL-
FITTING HEADUNIT.
Pioneer's new Custom-fit GM/Chrysler Headunits give you everything you're looking for in a car stereo without sacrificing the beauty of your dash. That's because they actually fit.

In the past, GM/Chrysler owners who wanted a CD player or an improved display had to buy a standard-size headunit and "force the fit" with extra installation kits. Frankly, they looked like hell.

Our custom-fit headunits are designed to look and work better than standard-size headunits in the larger dash opening common to most GM and Chrysler cars.

Plus, you benefit from the larger, state-of-the-art display and bigger buttons unique to these headunits. Not to mention the features and performance that have made Pioneer car stereos famous.

Don't let someone sell you something that doesn't fit. Not your pants. Not your shoes. Not your car stereo.
150 watts per channel

Dolby Digital Decoding

Dual-Room/Dual Source Operation

5 Video Inputs/S-Video Connection

K-STAT Discrete Audio Amplifier

Radio Data System

Graphical On-Screen Interface

Cool glowy buttons
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Four years creating a perfect receiver, and for what? Introducing the FutureSet remote. It comes with all of Kenwood's top AV receivers and, as hard as it is for us to admit, it is pretty remarkable. Besides having its famous red buttons, FutureSet can actually download operating codes for new components, like a new CD player or a DVD player, directly from a touch tone phone, eliminating the possibility of it becoming obsolete. So go ahead and buy our receivers for the remote. We just don't want to hear about it. For more information, visit the Kenwood website at www.kenwoodusa.com or call 1-800-KENWOOD.
A '67 Mustang also costs two months salary.

Take it easy.

Southern Comfort
Cover. Polk Audio RT1000p towers with built-in powered subwoofers flank the 36-inch Toshiba TV, and a Polk CS275 center speaker sits on top. The Bell'Ogetti B-740 A/V stand also holds a Philips Magnavox DVD400AT DVD player and a Sherwood R-925 Dolby Digital receiver. On screen: Mike Myers and Elizabeth Hurley in Austin Powers: International Man of Mystery, now on DVD from New Line Home Video. (Chair courtesy Sofa So Good.)

Photograph by Chris Gould

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See you in cyberspace!

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Virtual Reality
In Home Entertainment

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**LETTERS**

**DVD and THX**
I am close to upgrading to DVD, but so far I've encountered only one title with the THX logo. I've also noticed that most DVDs are in pan-and-scan format instead of widescreen. That's not cool. If the movie was originally filmed in widescreen, the disc should be in widescreen, and if the company decides to make pan-and-scan discs, the widescreen version should be included, too.

Most VHS titles that carry the THX logo are remastered versions of earlier releases, but the laserdisc versions I've seen were THX from the start. Why aren't DVDs being made the same way? Can we expect to find many THX DVD titles later on as well as selectable screen-format versions instead of pan-and-scan only? Why aren't companies taking full advantage of the capabilities that make the DVD format unique? If this keeps up, there would be no point in calling it Digital Versatile Disc.

ALBERTO LANDRON
North Wales, PA

Actually, the official name of the format is just DVD; the letters don't stand for anything. Whether to put widescreen versions on a disc or to follow THX standards (and pay the THX licensing fee) are marketing decisions. So far there are at least ten THX DVD titles, including Twister and Terminator 2. Let your purchases convey your preferences to the movie studios. Mastering a DVD is not a trivial process, and there is a steep learning curve. As software tools to help automate the process become available, more of the DVD format's capabilities will be exploited.

**Ambiophonics Revisited**
I appreciate Corey Greenberg's kind words about our book on the Ambiophonics sound-reproduction method in "The High End" in September. It is, however, unfortunate that he behaved like a subwoofer in a cinema shop when he chose to disparage, unheard and unseen, the one high-end element of the technique, namely, the use of a small absorbent panel placed on edge close to the listening position and extending a few feet toward the listening area. This technique makes super-realistic music soundstaging readily affordable.

Mr. Greenberg is too young to remember that it was Don Keele, Jr., the preeminent speaker reviewer for STEREO REVIEW's sister publication Audio, who first proposed the use of such a sound barrier to eliminate the comb-filtering and Head Response Transfer Function errors caused by crosstalk and the way the 60-degree stereo triangle interacts with a listener's outer ears. Mr. Greenberg neurotically hallucinates about press-busting "reality busters". I would have left it there. Mr. Keele's seminal AES paper included a formula (reprinted in our book) that showed you could sit 1 or 2 feet from the edge of the panel and still enjoy the resulting natural imaging and 120-degree soundstage.

Today, you can purchase an attractive, lightweight, folding panel designed for exactly this purpose, called a Reality Buster and available for about $400 from Echo Busters of Melville, New York. My own barrier was made for me ten years ago by Corey Greenberg's August "High End" column, "A Bridge to the Twenty-First Century," got me thinking about how I got into audio. I am 23 and bought my first copy of STEREO REVIEW in August 1980 when I was 7. (I still have it.)

My father did exactly the opposite of what his kids did. He never tried to tell me how good it was, and I was not allowed to touch it. He could sit with me in the evening and listen along with me. But I could not touch anything on those shelves, and I did not have any kind of stereo system myself.

Long evenings through my growing years spent with my dad listening to his music and his stereo made me an audiophile, now even more passionate than he is. It also exposed me to a very wide variety of music (I viewing a great high-resolution picture on an 8-inch LCD color monitor mounted in the ample space between the panel's end and my very comfortable reclining chair.

RALPH GLASGAL
Northvale, NJ

**Real-World Speaker Tests**
When you test speakers, why don't you also test them as they might be placed by the average, nonaudiophile home user? I would never consider placing speakers 3 feet out from any wall in any room in my house. For one thing, my wife would go ballistic if I even considered such a crazy thing.

I assume that you comply with manufacturers' speaker-placement recommendations in order to compare their specs with your results. But, hey, I want to know how the speakers will perform in my home. I really do not care how they sound in yours or the manufacturer's test labs. If a fine-performing speaker degrades radically when placed against a wall, I want to know about it. Conversely, if it still performs adequately, I want to know that, too.

OSCAR BOYAZIAN
Chino Hills, CA

Julian Hirsch replies: Like any other user, I cannot always install speakers in the "ideal" location, or even the way the manufacturer recommends. And neither I nor anyone else can tell you how a given speaker will sound in your environment. All I can do is compare each speaker I test with other speakers evaluated in the same manner and try to correlate what I measure with what I hear. If you are significantly more (or less) critical than I am, we may disagree totally. Ultimately, it is your choice, which is why I always recommend listening to speakers at home before buying them, or else buying them only from a dealer who will let you exchange them if they don't satisfy you.

**Getting into Audio**
Corey Greenberg's August "High End" column, "A Bridge to the Twenty-First Century," got me thinking about how I got into audio. I am 23 and bought my first copy of STEREO REVIEW in August 1980 when I was 7. (I still have it.)

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Philips DVX8000 Multimedia Home Theater is complete entertainment and manages all components in any home theater set-up:

- **Extraordinary Picture Quality**
  - Direct Digital Video Path
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  - LCD Displays as many as 32 Special Commands
  - Macro Keys Store up to 20 Commands
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SUBWOOFER OF THE YEAR!

Audio/Video International Grand Prix Product of the Year

Video Magazine’s 1997 Home Theater System of the Year

"...A DOWNRIGHT AMAZING PERFORMER."
— Tom Nowack on the PS-1200, Video Magazine

"...POWERFUL AND IMPRESSIVE."
— Andrew Marshall on the PS-1200, Audio Idea Guide

"ROCK SOLID AND DEEP AS A CHASM, BASS NOTES CAME THROUGH AS I’D NEVER HEARD THEM BEFORE."
— Tim Phillips on the PS-1000, Stereophile Guide to Home Theater Vol. 2, Number 2

Almost overnight, PARADIGM has become the new standard in high-performance subwoofers. As a world leader in speaker design, PARADIGM knows what it takes to make great sounding speakers - from best-value budget audiophile speakers right through to sensational PARADIGM REFERENCE high-end systems. PARADIGM has applied this comprehensive expertise to design and build the finest subwoofers available, at any price! And when it comes to price, PARADIGM’s value is unmatched. In fact PARADIGM has been rated #1 in price/value for 7 consecutive years in surveys conducted by the distinguished trade publication Inside Track.

Sophisticated bass driver technology utilizes AVS® diecast heatsink chassis for higher power handling and much lower distortion. Patented high current, high output amplifiers ensure full power delivery at all times. Add solid braced enclosures, full control features and what you have is the pure, clean, articulate and thunderous deep bass of PARADIGM’s sensational powered subwoofers.

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AudioVideo International Grand Prix Product of the Year

"...combines solid bass with uncoloured midrange, fine soundstaging, and a detailed, open top end... definitely give the Studio/100 a listen."
- Tom Norton, Stereophile Vol. 20, No. 8

"...state-of-the-art performance."
- Joseph C. Tanguay, Sensible Sound

"...an acoustically crisp, credibly realistic, and untiringly musical performance."
- Don Keats, Audio Magazine

"Phenomenal...Highly Recommended!"
- Don Keats, Audio Magazine

"Skin Tingling...Truly Topnotch."
- Julian Hirsch, Stereo Review

"Outstanding...I Surrender..."
- Greg Iran, Audio Adventure

"Extraordinary...Bravo Paradigm!"
- Andrew Marshall, Audio Ideas Guide

With years of design expertise and a state-of-the-art in-house R&D facility, Paradigm engineers and acousticians set out to build the world's finest speakers, regardless of cost! The result is Paradigm Reference...electrifying and eminently satisfying high-end speaker systems that bring you closer than ever to the live event!

And, while this stunning performance heightens the sheer enjoyment of music, it is equally important for the best in home theater sound, especially now with the arrival of digital AC-3 and DTS. We invite you to visit your nearest Authorized Paradigm Reference Dealer and experience this astonishing new reference standard in music and home theater sound for yourself!
"We are using an 'old' medium (print) to describe, discuss, and criticize a 'new' one (recorded sound)," wrote William Anderson in his November 1967 editorial. "I suspect that we are safe enough for a while — or at least until records are released with a musical performance on one side and a critique of it on the other."

An early videotape recorder, Craig's Model 6401, appeared in new products, priced at $1,035. Accessory equipment included a video camera ($248) and a 12-inch TV set ($197). Acoustic Research introduced its first electronic component, a solid-state 120-watt stereo amplifier ($225).

Features ranged from "Music of the Rococo" to "How Long Should 'Long Play' Be?" in which critic Richard Freed observed, "I suspect no one really insists on 30 minutes per side, and that nobody will kick about an occasional 15-minute side. Eight or 9 minutes, though, might reasonably be considered short weight."

Reviewing Marshall McLuhan and Quentin Fiore’s The Medium Is the Massage, Peter Reilly wrote, "As one who has been lulled to sleep from time to time by a 'good' book, I can appreciate on one level the (not bad) pun in the title of this disc."

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Kate and Anna McGarrigle, who won a 1976 Record of the Year award for their self-titled debut album, told us that their mother was ‘more serious’ about their career than they were. Said Anna: “Yes, she knows who all the critics are. . . She had Kate’s Stereo Review award on her wall…” Kate: “. . . but I took it down and put it on my wall.”

Suzanne Vega was interviewed in the wake of her success with “Luka,” and two country singers were praised by Alanna Nash: Patty Loveless, “one of the most promising names” in new traditionalism, and Rosanne Cash, whose King’s Record Shop, “a stunning mix of the traditional and the progressive,” was featured in Best of the Month.

Old formats never die? “I don’t ever foresee getting rid of my turntable,” mastering engineer Bob Ludwig said in an interview. And tape expert Craig Stark, in the feature “Open-Reel Recording,” predicted that “until digital editing devices become economical enough for non-professional users . . . the open-reel format will continue to survive.”

New products included Meitner’s AT-2 turntable ($1,500) and Yamaha’s CDV-1000 combination CD Video/laser-disc/CD player ($800). Julian Hirsch tested NAD’s 150-watt Model 7600 stereo receiver ($1,498), then the most powerful on the market thanks to its dynamic output of 400 watts per channel and its bridged-mono continuous output of 480 watts. "If any compromises were made in its design," said Hirsch, "we didn’t find them."

Steve Simels called In the Dark “the first Grateful Dead record you don’t have to be a Deadhead to enjoy.”

— Ken Richardson
This is the **DVD player** that brings the **MOVIE EXPERIENCE HOME**...
Now, owning your own movie theater has become a reality. Pioneer Advanced Home Theater combines the power, surround sound and big screen excitement of the theater with the advanced, all-digital performance of DVD (Digital Video Disc) and the huge selection of laserdiscs. Pioneer knows there are those who want more from home entertainment than just a TV hooked up to a pair of speakers. That's why Pioneer offers complete Advanced Home Theater systems (like the one pictured to the right) that are engineered to bring the impact of the movie experience home.

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**DVD/LO/CD Player**
- 9-bit DAC
- 500/425 Lines Horizontal Resolution

**Audio/Video 6-Channel Receiver w/ Dolby Digital Surround**
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**55'' Projection Television**

**Subwoofer—200 watts**
There's nothing like an all-out action flick at the theaters. Or is there? Because now you can get the experience at home—without the sticky floors. For less than you'd expect for true home theater, this system will put you smack in the middle of your favorite scenes and have you gripping at your chair. Pioneer's DVD/CD player gives you the impressive, all-digital source quality of DVD. Pioneer's receiver with Dolby ProLogic, five speakers and a serious subwoofer, create surround sound that's rich, deep and detailed. So you don't miss any of the subtle nuances in explosions and machine-gun fire. This Pioneer projection TV features a super contrast, fine pitch screen which dramatically improves horizontal resolution, detail and realism. The result? This 50-inch, high-resolution television will bring the helicopters home and keep friends running for cover. It's all part of the Pioneer Advanced Home Theater Experience. And you can bring it all home now!
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- Dolby® ProLogic Surround
- DSP (Digital Signal Processing)
- Pioneer Programmable SMART Remote™
- DSS/DVD Remote Operation Control
- CD Control Capability: Disc +/-, 10-Key Access, Best Selection, Random

VSX-0506S

A/V Receiver With Digital Signal Processing

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- Pioneer "Heads Up" SMART Remote with Preset Codes and Learning Capability
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- CD Control Capability: Disc +/-, 10-Key Access

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- Twin Driver, Bass Reflex Passive Subwoofer using 6" Linear Power Response Drivers
- Maximum Power Handling: 160 Watts
- Complete System Video Shielded

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5-Piece Home Theater Speaker System

- Front Speakers
  - 12" Cone Woofers, 4-3/4" Cone Midrange, 2-1/2" Cone Tweeter
  - Maximum Power: 120 Watts
  - Magnetically Shielded
- Center Speaker
  - 6" Cone Woofer x 2, 2-1/2" Cone Tweeter
  - Maximum Power: 150 Watts
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- Surround Speakers
  - 4" Cone Full-Range
  - Maximum Power: 75 Watts
- Also available: CS-H505V with 10" cone woofers, 3-way and 100 watt power handling
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- 9-bit Video Signal D/A Conversion
- 96 LHz/23-bit Digital-to-Analog Audio Converter
- Pioneer "Heads Up" Remote Control
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- 2 Gold S-Video Outputs
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- 65dB/5IdB Video Signal-to-Noise Ratio (DVD/LD)
- 9-bit Video Signal D/A Conversion
- 96 kHz/20-bit Digital-to-Analog Audio Converter
- Pioneer "Heads Up" Remote Control
- Independent CD Tray
- Condition Memory
- Multiple Scan/Search Functions
- 2 Gold S-Video Outputs
- 2 Gold Composite Video Outputs
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**Hi-Performance Combination CD/LD Player**

- 3 Optical Disc Compatibility (LD/CDV/CD)
- Dual-Sided LD Player
- 425 Lines Horizontal Resolution
- 96dB Video Signal-to-Noise Ratio
- AC-3 RF Output
- Independent CD Tray
- Multiple Scan/Search Functions
- SR Remote Control
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**Home Theater Powered Subwoofer**

- Bass-reflex Floor Enclosure
- 12" Woofer
- Continuous Average Power Output of 100 Watts, min., at 6.3 ohms, from 30Hz to 200Hz, with no more than 1% Total Harmonic Distortion
- Continuous variable turnover frequency of 50Hz to 200Hz
- Auto Power Circuit Switch

Also available: S-W50 with 10" woofer and continuous average power output of 50 watts, min., at 4 ohms, from 30Hz to 200Hz, with no more than 1% total harmonic distortion

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- Dual 6" Linear Power Technology Response Speakers
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- Continuous variable turnover frequency of 50Hz to 200Hz
- Auto Power Circuit Switch
- Magnetically Shielded for Video Use

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Specifications and design subject to modification without notice.
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50" Projection Television

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- 1000 Horizontal Lines of Resolution
- 0.72mm Screen Pitch
- Inverted Radius CRT with High Resolution Phosphor
- Red and Green PURE Color Lens
- Subwoofer Output
- Dual 181-Channel Cable-Ready Tuners

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55" Projection Television

- 55" High Performance PTV
- 1000+ Horizontal Lines of Resolution
- 0.72mm Screen Pitch
- Inverted Radius CRT with High Resolution Phosphor
- Red and Green PURE Color Lens
- Subwoofer Output
- Dual 181-Channel Cable-Ready Tuners
- Picture-in-Picture
- Scan Velocity Modulation (Red and Green CRTs)
- 3-Setting Color Temperature Adjustment
- S-Video Connection
- Remote Control

**SD-P62A3**

62" Projection Television

- 62" High Performance PTV
- 1000+ Horizontal Lines of Resolution
- 0.72mm Screen Pitch
- Inverted Radius CRT with High Resolution Phosphor
- Red and Green PURE Color Lens
- Subwoofer Output
- Dual 181-Channel Cable-Ready Tuners
- Picture-in-Picture
- Scan Velocity Modulation (Red and Green CRTs)
- 3-Setting Color Temperature Adjustment
- S-Video Connection
- Remote Control

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- Tinted Protection Panel
- 0.72mm Screen Pitch
- Inverted Radius CRT With High Resolution Phosphor
- Red and Green PURE Color Lens
- First Surface Mirror
- Subwoofer Output
- Dual 181-Channel Cable-Ready Tuners

**SD-P62A5**  
62" Projection Television

- 62" High Performance PTV
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**JVC**

The JVC HM-DSR100DU D-VHS digital satellite recorder is a VHS deck with the added ability to record digital MPEG-2 signals from EchoStar's DISH Network system. A built-in DISH Network tuner receives digital satellite broadcasts and sends the MPEG-2 bitstream directly to a D-VHS tape. Other signals are recorded in analog format through the built-in TV tuner or A/V inputs. The HM-DSR100CU includes a satellite dish and dual LNB (low-noise block downconverter). Price: $1,000. JVC, Dept. SR, 41 Slater Dr., Elmwood Park, NJ 07407.

* △ Circle 120 on reader service card

**POLK AUDIO**

The Polk Audio RT2000p has a built-in powered subwoofer with two 8-inch drivers and a 200-watt amp in a vented enclosure. In the sealed upper chamber are a 6½-inch midrange and a 1-inch polymer soft-dome tweeter laminated with vapor-deposited aluminum and steel. Frequency response is specified as 32 Hz to 25 kHz ±3 dB and sensitivity as 90 dB. The speaker measures 9½ x 45½ x 16 inches. Price: $950 each in black woodgrain vinyl, $1,100 each in rosewood veneer. Polk Audio, Dept SR, 5601 Metro Dr., Baltimore, MD 21215.

* △ Circle 121 on reader service card

**TOSHIBA**

The Toshiba SD3107 DVD player features component-video outputs and Spatializer 3D Stereo processing, which creates the illusion of surround sound in systems with only two speakers. Toshiba's Video Black Level expander circuit is said to increase the picture's overall contrast range, resulting in richer, deeper blacks. Price: $799. Toshiba, Dept SR, 82 Totowa Rd., Wayne, NJ 07470.

* △ Circle 122 on reader service card

**ADCOM**

The Adcom GCD-750 CD player has a rugged, high-mass three-beam pickup design said to be optimized for reliability and superior vibration resistance. There are both balanced XLR and unbalanced RCA outputs and a coaxial digital input. The D/A circuits can decode standard or HDCD-encoded CDs. Convenience features include full remote control, random play, and repeat modes. Price: $1,250. Adcom, Dept. SR, 11 Elkins Rd., East Brunswick, NJ 08816.

* △ Circle 123 on reader service card
Every home theater receiver company is screaming about how great Dolby Digital is. So how come when you turn on their receivers the experience is more like so what than so cool?

The answer to that question lies not in technology, but in quality. From our Dolby Digital ready TX-SV444 up to our THX certified TX-DS939 with built-in Dolby Digital decoder, Onkyo quality makes the difference in Dolby Digital.

That means Low-Negative Feedback and Non-Negative Feedback circuitries to minimize noise and distortion, so that a bullet whizzing from the left to the right rear channel makes you duck. It means oversized transformers and capacitors that deliver enough power to handle even the most sophisticated intergalactic weapons of mass destruction.

Onkyo quality is why our new receivers consistently deliver high power levels into low impedance loads, with the greatest possible transparency. And you can hear Onkyo quality, whether you’re listening to movies or music.

All you’ll hear from our competition is excuses.

May The Features Be With You

All of this extraordinary build quality means Onkyo receivers can bring you an extraordinary range of signal processing features. Like Lucasfilm’s Cinema Re-EQ™ and Timbre Matching™ Cinema Re-EQ automatically insures soundtracks are properly equalized for home playback, so that high frequencies that sounded fine in a large theater don’t make your fillings melt at home. Timbre Matching heightens realism by seamlessly blending the sound coming from the surround speakers with the front channels. And our top model, the TX-DS939, offers full THX certification.

High Definition DSP is another Onkyo exclusive. The result of the microprocessing capabilities of the Motorola Symphony chip and the programming wizardry of Onkyo, High Definition DSP lets you customize your room acoustics without having to take out a wall.

Until Onkyo invented Smart Scan, system setup and adjustment typically required wading through a confusing sea of presets. By simply rotating the Smart Scan controller, you can instantly select surround modes, parameters, output levels for all channels, delay times, center channel mode, subwoofer on/off and test signals.

Smart Scan is the fast, easy way to dial up perfect surround sound every time. And you’ll never get a wrong number.

That’s some inside information on what makes a great receiver. Your Onkyo dealer has the rest of the story. Along with a demo you won’t forget.
Our inside quality doesn’t give other receivers an outside chance.

**NEW TX-DS939 DOLBY DIGITAL, THX RECEIVER**

In the October issue of *Stereo Review*, David Ranada reviewed the TX-DS939 and concluded that “at present, no other AV receiver we’re aware of is clearly superior. It may not even have any peers.” The flagship of the Onkyo line, the TX-DS939 is, quite simply, the finest home theater receiver you can buy.

**NEW TX-SV545 DOLBY DIGITAL READY RECEIVER**

No other receiver offers the performance level of our TX-SV545 at such an affordable price. And it only gets better as you step up to its big brothers: the TX-SV646 and full Dolby Digital TX-DS747. So no matter what your home theater budget, there’s an Onkyo receiver that you can build around.

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NEW PRODUCTS

**MAGNEPAN**

Magneplanar
MG10.1QR speaker (left in photo; Model 3.1 shown at right for comparison) is the company's smallest, measuring 10½ x 53 x 1½ inches. A planar-magnetic, dipolar speaker with quasi-ribbon tweeters, it is intended to be used with a subwoofer. Frequency response is given as 80 Hz to 24 kHz ±3 dB and sensitivity as 86 dB. The speaker is available with an off-white, black, or gray fabric grille and natural or black oak trim. Price: $1,275 a pair. Magnepan, Dept. SR, 1645 9th St., White Bear Lake, MN 55110.

**AMC**

The AMC 3020 stereo integrated amplifier, designed for multi-media applications, has five audio inputs. Its front-panel source selector includes a Mix position that combines the audio from all five inputs simultaneously. Rear-panel controls allow the mixing level of each input to be preset. Pre-out/main-in jacks are provided on the rear panel along with a separate tape-recording output. Power output is rated at 20 watts per channel. Price: $250. AMC/Weltronics, Dept. SR, P.O. Box 80584, San Marino, CA 91108.

**TERK**

The Terk FM Edge antenna has a low-noise amplifier adjustable from 0 to 36 dB gain. It features Dual-Drive Amplification, which is said to reduce noise in the FM signal before boosting its strength. Price: $40. Terk Technologies, Dept. SR, 63 Mall Dr., Commack, NY 11725.

**LAT**

LAT International’s IC-100 Mark II (top) and IC-200 Mark II have silver-clad shields around two or four inner conductors, respectively, that are made of oxygen-free, high-conductivity copper. The insulation between the layers is Teflon, and the outer sheath is PVC. Prices: IC-100 MkII, $79 a pair; IC-200 MkII, $139 a pair. LAT International, Dept. SR, 317 Provincetown Rd., Cherry Hill, NJ 08034.

**CERWIN-VEGA**

Cerwin-Vega’s E-312 three-way speaker has a 1-inch ferrofluid-cooled soft-dome tweeter, a 5-inch polypropylene-coated midrange, and a 12-inch paper-cone woofer. Front-panel level controls allow adjustment of the tweeter and midrange. The E-312 measures 33 x 14½ x 12½ inches and is finished in black ash woodgrain vinyl. Bandwidth is given as 28 Hz to 20 kHz, sensitivity as 95 dB. Price: $365. Cerwin-Vega, Dept. SR, 555 E. Easy St., Simi Valley, CA 93065.
To place an order call 1-800-829-2600

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 Museo de Arte Contemporaneo, Caracas, Venezuela
 Finnish Museum of Horology, Espoo/Helsinki
 Sezon Museum of Art, Tokyo, Japan
 Museum of Decorative Art, Copenhagen, Denmark
 Museo de Bellas Artes, Bilbao, Spain
 Design Museum, London, England
 Kawasaki City Museum, Kawasaki, Japan
 Victoria and Albert Museum, London, England
 Museum Ludwig, Cologne, Germany
 Museum Beyer, Zurich, Switzerland
 Museo de Arte de Sao Paulo, Sao Paulo, Brazil


www.movado.com
NEW PRODUCTS

**M&K**
The M&K SW-85 in-wall speaker has a 5-inch polypropylene woofer and a 1-inch soft-dome tweeter mounted on an 11-gauge steel baffle. Frequency response is rated as 80 Hz to 20 kHz ±2 dB. A clamping system eliminates the need for installation brackets. Six high-power magnets fasten the 10½ x 7-inch front grille. Price: $350 each. Miller & Kreisel Sound, Dept. SR, 10391 Jefferson Blvd., Culver City, CA 90232.

**TRIBUTARIES**
The Tribute C2S from Tributaries, when connected between a video source and a monitor, can convert composite-video signals to S-video signals to simplify component hookup and source-switching. The converter/cable, which requires no power source, separates the chroma and luminance information from a composite signal using passive filters. Screwdriver controls are provided for adjusting the luminance and chroma channels. Price: $100. Tributaries, Dept. SR, 1307 E. Landstreet Rd., Orlando, FL 37824.

**LUXMAN**
The Luxman L-505s integrated stereo amplifier is rated at 70 watts per channel into 8 ohms with less than 0.04 percent total harmonic distortion. It has one balanced XLR line input and six stereo RCA-type inputs. The phone stage has switchable gain so that it can be used with both moving-coil and moving-magnet cartridges. A "record bus" permits recording a signal source independently of the one being amplified. The amplifier's tone controls are designed to be subtle, with a maximum boost or attenuation of 8 dB. A tone-defeat mode provides total bypass. Price: $2,600. Luxman, Dept. SR, 915 Washington Ave. S., Minneapolis, MN 55415.

**SCOSCHE**
The Scosche Soundkase SKSB-12 seatback CD organizer holds twelve CDs, a portable player, headphones, and batteries in separate compartments. A 12-inch pocket is provided for other items. The nylon organizer can be folded into a carrying case. Price: $29.95. Scosche Industries, Dept. SR, 5160 Gabbert Rd., Moorpark, CA 93021.

**AZTEC AUDIO**
Aztec Audio's Silencer, which plugs into a modular telephone jack, can monitor one or two phone lines and automatically mute an audio system connected to it when either line is ringing or in use. The Excluder accessory allows extension phones or a fax or modem to be used without triggering the Silencer. Both products are powered by the phone line. Prices: Excluder, $34.95 (one line), $49.95 (two lines); Silencer, $49.95. Aztec Audio, Dept. SR, 13236 N. 7th St., #4-252, Phoenix, AZ 85022.

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Legendary Performance  The Sony DVP-S7000 player has already been hailed as "the reference standard" for DVD performance. Now, thanks to our Dolby® Digital ES receiver with Digital Cinema Sound™ and a Trinitron® XBR® television with component video technology, the S7000 delivers even greater color clarity and stunning sound quality. It all adds up to the Ultimate home entertainment experience. It's just another way Sony makes great things happen.
Yamaha's CDR400 series CD-R drives come with Adaptec's Easy CD Pro and DirectCD recording software for the PC and Toast software for the Mac. Each drive can record to write-once CD-R discs and play them back at 6× speed. Packet-writing capability lets files be written to a CD-R as if it were a floppy diskette. Prices: CDR400i-PC (internal SCSI for PC), $799; CDR401tI-PC (internal IDE/ATAPI for PC), $799; CDR400tx-PM (external SCSI for PC or Macintosh), $899. Yamaha, Dept. SR, 6600 Orangethorpe Ave., Buena Park, CA 90622.

Bell'Oggetti

The Bell'Oggetti SP-100 speaker stand is made from heavy-gauge metal and features removable spiked feet. Height is adjustable from 31 to 43 inches, and it can hold speakers weighing up to 100 pounds. Price: $180 a pair. Bell'Oggetti, Dept. SR, 711 Ginesi Dr., Morganville, NJ 07751.

PSB

The PSB Stratus Gold, a refined version of the popular Stratus Gold vented three-way speaker, has a 10-inch woofer with a treated-felt cone, a 6½-inch midrange with a polypropylene cone, and a 1-inch aluminum-dome tweeter. Frequency response is specified as 31 Hz to 21 kHz ±3 dB and sensitivity as 90 dB. The Stratus Gold measures 43 x 12½ x 17 inches. Price: $2,399 a pair in black ash or dark cherry, $2,699 a pair in high-gloss black finish. PSB, Dept. SR, 633 Granite Ct., Pickering, Ontario L1W 3K1.

Sound Related Technologies

The IBS-10 subwoofer from Sound Related Technologies features a water-filled bladder that is said to boost bass response and produce tactile vibration. Two 10-inch woofers generate sound waves that act on the water. The resulting vibration is then coupled to the floor on which the enclosure rests. The IBS-10 has a nominal impedance of 4 ohms. When filled with 11½ gallons of water, it weighs 172 pounds. Price: $999. Sound Related Technologies, Dept. SR, 228 N. Lynnhaven Rd., Suite 130, Virginia Beach, VA 23452.

Proton

The Proton AS-2620 Dolby Digital A/V preamplifier has a master volume control, and each of the six channel levels can be stepped up or down 1 dB at a time with a range of ±9 dB. Surround-channel delay can be set from 0 to 30 milliseconds and center-channel delay from 0 to 5 milliseconds. The AS-2620 has five analog A/V inputs, an S-video input/output, and four digital inputs: one optical, two coaxial, and one RF. A full-function remote control is supplied. Price: $999. Proton Dept. SR, 13855 Struikman Rd., Cerritos, CA 90703.
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DVD Connections

My receiver has pre-out and main-in jacks for all channels. I plan to buy a DVD player with a built-in Dolby Digital decoder. Can I connect this to my present receiver? If so, do I put the receiver in the Pro Logic mode or stereo or what?

MANUEL GRACIA
Anaheim, CA

A

You will be able to use such a player with your receiver if it has pre-out/main-in facilities for five or six channels, which is likely only if it is a recent "Dolby Digital-ready" model. Just how you configure it depends on how it patches the pre-out jacks to the main-in jacks. If it uses U-shaped metal jumpers that you have to remove to get to the amplifier inputs, it matters little how you set the receiver because you will have disconnected everything but the volume control and amplification stage. That means you'll have an awkward task of repatching if you want to use the receiver's Pro Logic circuitry or listen to other sources. Newer receivers will let you switch between the internal circuits and an external Dolby Digital decoder, whether it's built into a DVD player or freestanding.

Speaker Equalizers

My speakers include a dedicated equalizer connected to my receiver. To upgrade them to digital, one dealer told me, I could replace the equalizer with one designed for the next generation of the speaker, while another said I could use any equalizer. Who's right? Also, I notice that when I use any other speakers with the receiver, the equalizer seems to remove the midrange. Is that normal?

RANDBY HIRSCH
APO Germany

A

Unlike conventional graphic equalizers, the dedicated equalizers supplied with speakers such as yours are not intended to be used to tame room problems or to create a more dramatic sound. Instead, they are specifically designed to offset deficiencies in the speaker's inherent frequency response. If, for example, the speaker inherently has a midrange that's louder than the frequency extremes, the equalizer will have a corresponding response sag to flatten things out. That's why when you send the equalized signal to a speaker that doesn't need that correction, it produces the response anomaly you hear.

Dedicated equalizers are very carefully matched to the speakers they are intended to work with (or at least they should be), so using any other equalizer is likely to degrade the sound rather than improve it. The only exception would be if an upgraded version of the speaker had the same response and thus needed the same correction. That would be very unlikely, but if it did happen, the new equalizer wouldn't work any better than the old one.

Incidentally, it's a myth that you need to upgrade your speakers for digital sound — unless you intend to play your music so loud that there's a danger of blowing up your equipment. Speakers that were appropriate for high-quality analog sources will handle digital ones just fine.

Magnetized CDs

Is it true that I should store my CDs some distance away from my speakers, and if so, how far away and in what direction? And is it only the speakers that can be harmed or other components as well, such as the CD player itself?

AMGAD ELGALI
Powder Springs, GA

A

Speakers, TV sets, and power amplifiers can emit strong magnetic fields. which may degrade the signal on tape cassettes that are stored too close, but not CDs. A compact disc is made up of plastic, aluminum (or gold), and a bit of ink, none of which are affected by magnetism. And even if, by some chance, a disc did pick up some magnetism (in the metallic components of some exotic ink, if such a thing even exists), it would have no effect because magnetism plays no role in the way data is stored on a CD.

To Sub or Not to Sub

I would like to use a subwoofer in conjunction with my planar speakers, but their manufacturer advised me not to because using a sub with an electronic crossover would "muddy up the bass" of the panel speakers. Is that really likely to be a problem?

RICK DE SALVO
Bath, NY

A

Since planar speakers are typically weak at reproducing bass frequencies, using a powered subwoofer with them is often a good idea. However, some powered subwoofers have not only a low-pass filter that restricts the signal fed to its driver to the lowest octaves, but also a high-pass filter that removes the low frequencies from a line-level signal that's fed back to the main amplifier. The purpose is to save the main amplifier from having to amplify the power-hungry low bass. Insofar as this alters the
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low-frequency characteristics of the main speakers, it might be said to "muddy up" their sound. I'd expect the effect to be minimal, if it were even audible at all, but if you don't want to take the chance, you could simply not use the high-pass feature and run the main speakers "straight" and the sub in parallel. Positioning the subwoofer and setting its level and crossover point properly will be vital, but those things always are.

**Power Ratings: Watts Up?**

I have often heard that when it comes to car stereo amplifiers, not all models are what they appear to be, and that an amp rated for a total power of 400 or 500 watts may be capable of producing only 100 watts. If that's the case, how can I be sure I'm getting all the power I'm paying for? D. MAN Biddeford, ME

Wattage numbers on their own are meaningless. Even crummy little amps can put out high power for short bursts, especially if you don't mind gross amounts of distortion or a very narrow bandwidth.

Makers of amplifiers for home use have long been required to state extra details when specifying power output, and while things are freer in the world of autosound, the better manufacturers specify their products in a similar way. The more such details are provided, the more you'll be able to tell what you are getting.

First, the rating should be for continuous output rather than just musical peaks. It's relatively easy to produce high-power spikes, but hard to crank out the same level over time without burning up. If the specs mean continuous power, they will say so.

Total harmonic distortion tends to rise as an amplifier reaches its upper limit, so if an amp is specified to put out a certain number of watts but at a high distortion level — 10 percent, say — then the usable clean power will be much less. And home units must specify the frequency range over which the output is valid. Bass is much more power-hungry than the rest of the spectrum, so if an amp is specified for a range that starts at 40 or 50 Hz, rather than 20, chances are that its overall rating would drop if the bottom octave were taken into account. And beware of specs that mention only one frequency, such as 1 kHz. The load impedance used for the measurement should be stated too, as lower impedances may produce bigger numbers but not have much to do with real-world operation.

The rating should also be of power per channel, both (or all) channels driven. The first is desirable but not absolutely necessary; if you know the spec means total power, you can always divide by the number of channels. But all channels must be driven because, in normal operation, one power supply feeds everything. If you leave one channel silent, the other one can "borrow" some of its power and produce a higher output.

A typical home power spec would read: "100 watts per channel continuous into 8 ohms, 20 Hz to 20 kHz, both channels driven, with total harmonic distortion no greater than 0.01 percent." The closer a car amplifier comes to that formula, the better you will be able to judge it.

**Treating 78s**

I have some old 78-rpm records and a three-speed turntable. Is there a surface treatment I can use to get the best sound from these oldies? MARK M. KIRKHAM Salt Lake City, UT

First, since 78s are heavy, awkward, and brittle, I suggest you try to get one good play from each disc and tape it for future listening. Repeated playings of the old shellac recordings are a dicey proposition. Second, if the records have more than a minimal amount of wear, you won't get sound quality that is much better than just okay by today's standards.

But there are things you can do to optimize quality for that one good pass. Start with a stylus designed specifically for 78-rpm playback. You might be able to buy one for your present cartridge (be prepared to pay quite a few bucks for it), or you might have to use a new cartridge. If so, it need not be a super-quality model, given the nature of the material it will be called on to handle.

Next, devise a way to record in mono so...
that any out-of-phase surface noise will be canceled out. Simply switching the amp to mono won’t do it, as that still feeds stereo to the tape outputs. Bridging the hot leads right at the cartridge works, or use back-to-back Y connectors between the amplifier and the tape deck to accomplish the same thing.

Since there’s not much in the top octaves on 78s but noise, using a graphic equalizer to remove everything above about 5 to 8 kHz can be effective. I’ve also had some success using cheap tape with relatively poor treble response; this can be enhanced by overbiasing, which further rolls off the highs. If your tape deck doesn’t have a continuous bias trim control, try simply using the Type II bias position with Type I tape (if your deck’s switching allows this). You’ll have to experiment a bit to get everything right.

Finally, dampen the surface with distilled water before playing, and make sure it stays wet. Avoid using any other liquid. Some liquids—especially anything containing alcohol—will dissolve the shellac. And make sure you clean the stylus after every play, or accumulated dust will dry onto it with the consistency of concrete.

**Nonrecording MiniDisc**

**Q** In addition to a MiniDisc recorder, my receiver is being fed by a turntable, a CD player, and a VCR. I can record from any source, including MD, to cassette, and from any source except cassette to MD.

**A** You don’t say, but I assume your receiver has two tape-monitor loops. Apparently you have the MiniDisc recorder connected to one loop and the cassette deck to the other. A few receivers enable you to record from one tape deck to another in either direction, but most only allow one-way dubbing, probably on the assumption that most people copy cassette to cassette and therefore don’t need to be able to go both ways. Your receiver seems to be of that sort.

To understand what’s going on, you have to envision what a tape-monitor switch does. In a one-loop system, whatever source has been selected by the main input control is fed through the record/tape-out jacks to the recording electronics of a tape deck. At any time, regardless of what’s happening later in the chain, the deck can record that source. Either that signal as it passes through the deck’s electronics, or an off-tape signal if the deck is in the play mode, is fed to the play/tape-in jacks. The monitor switch selects either this signal from the recorder, or the input source directly, and sends it to the rest of the receiver.

With two loops, they’re usually wired in series: Whatever the Monitor 1 switch selects is fed to the record/tape-out jacks of Loop 2. The Monitor 2 switch selects and passes on either what’s passing through the second machine or the signal being fed through by Monitor 1.

With both switches in the Source position, the main input signal is fed simultaneously directly to the amplifiers and to the record/tape-out jacks of both loops; it could be recorded by either the MD deck or the cassette recorder. With Monitor 1 in the Tape position but Monitor 2 set to Source, the main inputs are switched off and the output of the MD is fed to Monitor 2, where it can be dubbed to tape. But with Monitor 2 in the Tape position, the cassette deck’s output feeds only downstream to the amplifiers, not back to the MD deck, whose input is still connected to the main input control. Whatever is selected there, it will record.

Simply exchanging the machines—MD to Loop 2, cassette to Loop 1—would allow you to do what you want, but not dub MiniDisc to cassette. Alternatively, temporarily connecting the output of the cassette deck to a line-level input other than a tape input would let you dub it to disc.

If you have a question about audio, send it to Q&A, Stereo Review, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.
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PERIPHERALS
PRODUCTS AND TRENDS THAT GO BEYOND MAINSTREAM AUDIO/VIDEO

Pick a Card, Any Card
BY KEN C. POHLMANN

In the beginning, Edison created analog audio, and it was good. Then, about a hundred years later, the audio world suddenly reinvented itself. The advent of powerful microcomputer technology, coupled with CD technology, initiated a thousandfold increase in the complexity of audio systems. Audio circuits that were fabulously expensive or downright impossible to build in the analog world suddenly appeared in low-cost digital chips mounted on plug-in cards. When installed in a personal computer and controlled by software (a concept essentially absent in the analog world), these cards can transform a computer into an audio powerhouse. Today, a properly equipped PC can perform audio tasks that would have been brutally difficult to achieve twenty years ago, and simply unimaginable eighty years before that.

All of the credit goes to sound cards. On the face of it, they are relatively uninspiring circuit boards mainly populated by chips and connectors. Traditional audiophiles, more accustomed to appraising a component by its weighty heft or the gleam of its brushed metal front panel, may be underwhelmed. However, it would be a mistake to underestimate the muscle hidden in these lightweight, low-cost cards and the software that animates them.

Although not all sound cards are created equal, high-quality cards contain a formidable array of processing capability and can perform a wide range of audio services. For example, a good sound card will let you play back an audio CD recording of Beethoven's Ninth Symphony, make your own acoustical recording of it, play back a MIDI-synthesized version of it, create your own synthesized version, and control all the input and output levels of that variety of sound sources — and those are just the basics.

For example, consider the following sound cards for Windows-platform computers: the $199 Creative Labs Soundblaster Awe 64 Gold, the $299 Guillemot Maxi Sound Home Studio Pro 64, and the $500 Turtle Beach Multisound Pinnacle, $549 with digital input/output (I/O). These cards are representative of today's new breed of sound card — a far cry from the video-game noise makers that formerly defined the industry.

Although there are many differences between the three cards, they all offer a similar array of features. They contain stereo analog-to-digital (A/D) and digital-to-analog (D/A) converters so that analog audio signals can be input and output from the computer's storage devices. The converters are full-duplex, allowing simultaneous recording and playback. In some cases, a digital input or output is also provided. Signals can be digitized as 16- or 8-bit samples, in stereo or mono, over a variety of sampling frequencies ranging from 5 kHz to 44.1 or 48 kHz. (In many cases, the sampling frequency is determined by the particular software application.)

The cards also provide synthesis capabilities; this is needed, for example, to create sound effects when playing MIDI files or when playing games. All three cards support sample-based wavetable synthesis, which allows synthesis and playback of both music and sound effects via software. The Creative Labs card also supports physical model-based waveguide synthesis, in which mathematical models are used to emulate the sounds of musical instrument.

Each card differs somewhat in its specific synthesis ability. The Guillemot card, for example, supports 128 wavetable instruments, with 189 variation sounds and nine drum sets using its onboard 4 megabytes (MB) of RAM. Moreover, sixty-four voices are supported, with multitimbral capability on sixteen channels. Each of the cards has a MIDI interface so that you can connect it to an external MIDI instrument such as a keyboard. Finally, the Guillemot and Creative Labs cards contain built-in 3-D stereo-enhancement circuitry. These proprietary systems, in greater or lesser degree, increase the depth and breadth of the stereo soundstage and broaden the "sweet spot" where full stereo separation is perceived by the listener. The Guillemot card also provides surround-sound speaker outputs.

An electret condenser microphone (the same mike, in fact) is included with both the Creative Labs and Guillemot cards. It's certainly useful for capturing acoustical sounds. Perhaps most interesting, however, is its use in Internet phone applications in which you can use a microphone, speakers, and a modem to talk to anyone else (with the same technology) via the Internet. Both cards provide Internet phone software.

From a hardware standpoint, aside from the chip collection itself, each of these cards sports a variety of connectors either on the card's mounting bracket or on the printed-circuit card itself. Generally, these cards provide analog line-in and line-out jacks, a microphone input, and a game-pad/joy stick/MIDI connector. The Creative Labs card has an SPDIF output connector, which can be attached to a sep-
that lets you adjust the volume of each comprehensive audio control system to an output port. You'll also find a mixer for controlling the output to any given port. For example, the Turtle Beach card is accompanied by WAVE SE II software, which lets you record, edit, and otherwise go crazy with waveform audio. Specifically, WAVE provides a four-hand parametric equalizer, fast-Fourier-transform (FFT) analysis, graphic waveform drawing, sample-rate conversion, crossfading, and effects such as echo, flange, chorus, and distortion. The Sierra Audio Rack software provides familiar home stereo controls for the sonic aspects of your PC, using on-screen buttons and faders, you can play back CDs and MIDI files, mix sounds, and so on. The Mouse Player software displays a music keyboard on the screen and lets you use it to play MIDI instruments. Turtle Beach also throws in a copy of Digital Orchestration Plus, which merges a MIDI sequencer with multitrack audio recording.

After you've mastered the bundled software, you might want to upgrade to more sophisticated third-party software. For example, Sound Forge provides comprehensive sound editing and CD-R mastering software, and CakeWalk is great for MIDI sequencing.

In the old days (several years ago), many consumer sound cards used questionable A/D and D/A converters and casual circuit-board design. As a result, signal quality was not always pristine. However, today's sound cards are quite respectable. Even the cheapest card of this trio, the one from Creative Labs, fared quite well on the test bench when installed in a Dell 166-MHz Pentium PC. For example, a test CD yielded a playback line-out measurement of 0.008 percent total harmonic distortion plus noise (THD+N), an A-weighted signal-to-noise ratio (S/N) of 86.4 dB, channel separation of 79.2 dB, and a frequency response of +0.0, -0.5 dB from 20 Hz to 20 kHz. In a record and playback test, the card delivered 0.013 percent THD+N, an A-weighted S/N of 80.4 dB, channel separation of 78.2 dB, and a frequency response of +0.0, -3.4 dB. Anyone who says that all sound cards sound bad probably hasn't bothered to listen to one recently. In fact, sound cards use circuits and construction techniques that are similar to those found in home CD players, and they perform similarly to many CD players.

If you're not especially interested in audio, then all CD players seem about the same. However, as you dig deeper, you'll begin to discover the differences. Likewise, if you're not really into audio, then all sound cards seem the same. Of course, they're not. As with CD players, the different price points generally define both signal quality and features. In addition, different cards emphasize different features; for example, some cards are better for recording and playback, while others offer more extensive synthesis features. The Creative Labs Soundblaster Awe 64 Gold card demonstrates that even budget cards can deliver clean sound and handle both waveform and synthesis chores. The Guillemot Maxi Sound Home Studio Pro 64 card adds the all-important feature of digital input and output; if you are serious about moving audio through your computer, you'll need this feature. The Turtle Beach Multisound Pinnacle card does all of the above (with the optional digital I/O) and adds 20-bit converters, a Motorola DSP56002 digital signal processing chip, and a powerful Kurzweil wavetable synthesizer; if you're looking for serious MIDI synthesis capability, this card will deliver it.

Powerful microprocessors, recordable CDs, Internet audio, high-quality synthesis chips, and multimedia technologies galore are transforming today's audio scene. Although the days of mismatched and inadequate hardware and software are not wholly behind us, advances such as Windows Plug and Play take the sting out of sound card installation. Day-to-day operation is reliable, and sonic performance is quite good. If your PC has an extra slot, a card such as one of those evaluated here will open your door to the world of desktop audio and the modern way to perform audio recording, editing, analysis, and synthesis.

Anyone who says that all PC sound cards sound bad probably hasn't bothered to listen to one of them recently.

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STEREO REVIEW NOVEMBER 1997 45
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MovieWorks™ 5.1 By Henry Kloss

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The main speakers in MovieWorks 5.1 are a two-way, shielded design with excellent tonal balance, wide dispersion and pinpoint stereo imaging – everything you’d want in a high-quality speaker to reproduce both music and sound effects. They will fill even a large room with accurate, natural sound...without filling the room with big speaker boxes.

High-output center speaker.

The center speaker is a new high-output, wide-range design with natural tonal balance and superb dispersion. It has two 5 1/4" midrange-midbass drivers and a tweeter identical to that in the main speakers, for seamless blending of soundtracks. Bass reach is significantly lower than most center speakers. Its dynamic range can handle even demanding soundtracks, and dispersion is broad enough to cover all listening positions.

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The surround speakers in MovieWorks 5.1 are a high-output design using MultiPole technology that allows you to choose between dipole (diffuse radiating) and bipolar (direct radiating) sound.

With the growing popularity of Dolby Digital® 5.1 surround sound, which sends discrete signals to the left and right rear speakers, there has been controversy about what kind of radiating characteristic is best for surround speakers. For virtually all of today’s movie soundtracks, we recommend dipole radiator designs because they do a superb job reproducing surround effects so everyone in the room hears them correctly.

For some 5.1 channel mixes, however – those with signals spread between the two surround speakers in true stereo – bipolar direct radiation can be advantageous. In particular, music recordings with vocalists directed to surround channels sound better with our MultiPole speakers set to their bipolar position.

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** Unlike seemingly similar systems, our MultiPole speakers, when switched from dipole to bipolar operation, affect a very broad range of sound – not just very high frequencies. This difference is crucial to proper performance.

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CIRCLE NO. 6 ON READER SERVICE CARD
Has Hi-Fi Reached Its Limits?

The pursuit of "perfect" sound reproduction in the home is presumably the aim of the high-fidelity industry and of the audiophile community that has grown up around it. Unfortunately, although we have made impressive advances toward attaining that goal, audio's Holy Grail continues to elude us.

Realistically, of course, perfection in any human endeavor is impossible. Nevertheless, the state of the art in music recording and reproduction is astonishingly good, and for all practical purposes it is now limited mostly by non-technical factors such as economic constraints on the design and furnishing of our homes. In cost, space, and appearance were no object, we could come remarkably close to perfection with current technology.

In view of the practical limitations on the performance of affordable home audio systems, it might appear that our quest for "perfect" music reproduction was about to reach its end. To be sure, new audio components continue to make their appearance, frequently offering the happy combination of improved performance and lower prices. But there have been few, if any, fundamental advances in the art of music recording and reproduction since the development of the digital compact disc more than a decade ago. That's not to say nothing is happening. To the contrary, the recording industry is working with audio-equipment makers to come up with a new multichannel format known as DVD Audio, which could lead to a wave of new optical-disc-based players in the next couple of years. We'll have to wait and see how that develops.

Meanwhile, you don't need a fundamental technological breakthrough to make a significant improvement in an existing product or system. It is often more logical to seek out its most serious weaknesses and concentrate on correcting them rather than investing time and energy on developing additional features that leave the weaknesses still in place. In the case of audio, that means improving the speakers, which remain the ultimate weak links in the audio chain.

The question is, where do we go from here? As every reader of STEREO REVIEW knows, the emphasis of the consumer-electronics industry has shifted to home theater, which involves recreating the movie experience at home. Of course, these same multichannel systems can be used to enjoy music as well.

However, when it comes to movies, in many ways the video requirements are easier to satisfy and more attainable than the audio aspects. Regardless of the qualities and content of the picture, the viewer always knows that he is seeing a two-dimensional display. No one could believe that he is actually experiencing the depicted actions even in special circumstances, such as a 3-D or Omni-Max film.

In contrast, we are often given the impression that an audio-only program can be reproduced with "concert-hall realism" under certain circumstances. Although it is possible under ideal circumstances to come amazingly close to achieving that effect, even this is more likely to mimic a nonexistent hypothetical concert hall than the hall in which the recording was made (if, indeed, it was not made in a recording studio). Fortunately for both consumers and the hi-fi industry, perfect simulation of a live musical performance is not really a "must," and we are usually satisfied to experience a believable simulation in playing back many of today's recordings.

Reproducing movie soundtracks presents a somewhat different problem. In most cases, the two-dimensional screen display is dominant, accompanied by dialogue and environmental sounds that are easily reproduced in the home without affecting the understanding, believability, or emotional impact of the viewing experience. Surround sound, used with discretion, enhances the viewer's experience at least to the degree that two-channel stereo music reproduction surpasses mono.

Sad, though, there is a growing tendency for moviemakers to use bizarrely excessive or exaggerated video and audio effects, presumably to enhance the emotional qualities of the viewer's experience. When effects are laid on with a heavy hand, the result is analogous to the "ping-pong" effects that helped sink the hi-fi industry's ill-fated quadraphonic sound venture in the 1970s. Judging by what I have seen, heard, and felt in some recent films, it is not too difficult to understand why some recent A/V receivers are so large and heavy. It takes a lot of power to reproduce those rumbles and other special effects.

I can't help wondering about the long-term effects of this "video revolution." As I've said many times in the past, ergonomic (human-engineering) considerations in some of the recent deluxe A/V receivers have been conspicuous by their absence, as evidenced by arrays of tiny black buttons assigned to arcane functions and often identified, on a black panel, merely with cryptic two- or three-letter acronyms.

The operating versatility and features of these technological wonders are as impressive as their bulk, weight, and price tags. But, when I think of the many people I know who have not yet learned to program their VCRs, and quite possibly never bothered to read (let alone understand) their relatively intelligible instruction booklets, I wonder how they would cope with the seventy or so pages of instructions that come with some full-bore A/V receivers.

While I am still in a critical mood, let me also note that the tuner sections of these deluxe receivers, both AM and FM, typically resemble what I'd expect to find in a department store "hi-fi" system, not a serious audio component. Based on what I have measured from many of these receivers, I would guess that the FM tuner sections of most good receivers of the 1960s would outperform those of today's more expensive A/V models. Perhaps this reflects the current state of music programming on radio, or maybe "cheating out" on the tuner is simply an easy way to cut manufacturing costs.

On the other hand, the overall audio performance of today's A/V receivers is just short of awesome, especially when driving a full surround-sound complement of speakers. In fact, tuner sections and ergonomics aside, the overall improvement in receiver quality in recent years parallels the advances in the performance and value of speakers, amplifiers, and CD players.

Summing up, it appears to me that our mutual hobby is alive and well, albeit not without some evolutionary growing pains. Undoubtedly it will continue to advance, and the consumer will be the beneficiary. Stay tuned!
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c net GameCenter

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Sony DVP-S3000 DVD Player and SDP-E800 Digital Surround Processor

DAVID RANADA • TECHNICAL EDITOR

Ho hum, yet another fine Sony DVD player. While the excellent video and ergonomic performance of the DVP-S3000 would normally send me into paroxysms of praise, the real story here is the SDP-E800 Digital Surround Processor, to give it Sony's official designation. It is one of the most versatile Dolby Digital (DD) processors we've seen.

First, however, the DVD player. The DVP-S3000 is a stripped-down version of Sony's first DVD player, the top-of-the-line DVP-S7000 (reviewed here in May's "First Look at DVD"). The most significant feature omitted from the new player is the earlier model's component-video outputs: the DVP-S3000 has only the now standard DVD-player complement of one S-video output and one composite-video output. There are also coaxial and optical digital audio outputs: both carry a CD's stereo audio signal as well as a DVD's encoded Dolby Digital signal, which must be led to an outboard processor like the SDP-E800 or an A/V receiver (or other component) with a built-in decoder.

Retained are the older model's unusually complete disc-navigation features (still-stepping, two slow-motion speeds, and three fast-scan speeds, all in forward and reverse), 10-bit video digital-to-analog (D/A) converters, a dual optical pickup that enables playback of CD-R recordable CDs as well as normal CDs and DVDs, and its nimble on-screen video bit-rate meter. The DVP-S3000 even adds a feature: a menu default that makes the player deliver a DVD's multichannel Dolby Digital data (if any) regardless of the disc's own encoded default audio playback mode (some discs default to two-channel Dolby Surround outputs).

Just as important, the new player has retained all of the video and audio performance of its predecessor. In our measurements and listening/viewing tests, the DVP-S3000's combined DVD video and CD audio performance was unsurpassed by any other DVD player we have tested and equaled only by Sony's DVP-S7000. Add to that the well-behaved disc-navigation capabilities, still unmatched by any other player, and the DVP-S3000 looks (and sounds) like a winner.

Now for the SDP-E800 processor, which comes equipped with almost enough facilities sufficient to qualify it as a full-fledged A/V preamplifier, which is how I used it. It has four A/V input connections, one for analog audio and three for digital audio. While there is a composite-video, but no S-video, jack for each input, the audio connections vary. The Analog input (described as for a "VCR, etc.") gets a stereo pair of standard RCA jacks. The Digital 1 input, which is intended for a DVD or laserdisc player, receives data through either an optical or a coaxial connection. The SDP-E800 has a built-in RF demodulator, so Digital 1 also has an RCA jack that accepts the AC-3 RF output of a suitably equipped laserdisc player. You can select among Digital 1 sources, making it possible to connect more than one digital audio component to its inputs.

Digital 2, which is recommended
 Been there.

When most people go out to the movies, they grab a bucket of popcorn and a soda to keep them company.

Yamaha sound field engineers, on the other hand, bring something a bit more sophisticated along.

Equipped with an array of advanced measuring systems, they record the way sound waves behave inside an actual theater—in the same way they've measured concert halls and other performance venues. Their research captures the complex acoustic reflections that make the cinema experience seem so much larger than life.

Finally, our engineers translate this understanding of sound field behavior into unique, sophisticated new signal-processing devices. Using Yamaha's extensive semiconductor design and manufacturing capabilities.

Just how much they've accomplished you'll hear in the new Yamaha RX-V2092. The first A/V receiver ever offered with on-board Dolby Digital AC-3 decoding as well as proprietary Yamaha 7-channel Tri-Field Cinema DSP.

Dolby Digital gives you 5.1 discrete channels of surround sound, positioned precisely as the director intended.

While our 7-channel Tri-Field Cinema DSP gives you the keys to the theater by adding a whole new dimension of realism.

Tri-Field processing recreates the sonic environment typical of grand movie houses. Our sound field specialists have measured. By employing Yamaha-manufactured chips expressly designed for the job. Rather than less-efficient general-purpose chips that have to run faster and hotter to handle the same tasks—less cleanly. And the results?

Imagine the birds in a primeval forest twittering in the treetops a hundred feet above your ceiling. Or the distant song of a steam locomotive beginning miles beyond your walls, then hurtling closer until it highballs through your living room.

Better yet, give your imagination a rest. Call 1-800-4YAMAHA for the dealer nearest you and audition our series of new A/V receivers. You'll hear where we've already been. And precisely how far other home theater technology still has to go.

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TEST REPORTS

for a DVD player or a satellite-TV
tuner, has both a coaxial and an optical
digital connector. And Digital 3, in-
tended for connection to a CD player
or a digital recorder (DAT or MD), has
one optical input and one optical out-
put. All three digital inputs will accept
a Dolby Digital bitstream; the proces-
sor automatically recognizes DD sig-

tals and activates decoding. The Digi-
tal 3 output will feed stereo digital

(not Dolby Digital) data received from
the Digital 1 or Digital 2 inputs to a
digital recorder. The SDP-E800's oth-
er outputs are comparatively simple: one composite-video output and the
standard six line-level, RCA-jack, sur-
round-sound outputs to an amplifier
(front left, right, and center; surround
left and right; and subwoofer).

The first of the SDP-E800's opera-
tional felicities is that its front-panel
controls are almost as complete as its
remote-control facilities. Aside from
controlling the volume and selecting
the input source, from the front panel
you can also select speaker-size set-
tings, turn the subwoofer output on
and off, match speaker volumes (turn-
ning on the test tone requires the re-

tume), and adjust a built-in multichan-
el equalizer (there are separate bass
and treble controls for the front left/
right, center, and surround speakers,
each control with a variable turnover
frequency). From the front panel you
can also introduce distance-compen-
sating delays to the center-channel (0
to 5 milliseconds, or ms, in 1-ms inter-
vals) and surround outputs (0 to 15 ms
in 5-ms steps), turn off the front-panel
display, and select among the SDP-
E800's multitude of surround process-
ing modes as well as fine tune each
mode's sonic characteristics.

To this comprehensive array of con-
trols and features the remote adds
separate buttons to adjust the left/
right balance separately for the front
and surround speakers, to control
the levels of the center, surround, and subwoofer
channels; to mute the
processor's output or turn
off its display; and to raise
or lower the amount of
digital ambience process-
ing added for surround-
sound playback.

It's the ambience pro-
cessing that really caught
my fancy. Beyond full
Dolby Digital decoding
and, for older soundtracks,
digital Dolby Pro Logic
decoding, the SDP-E800
has a host of enhancement
modes. Although Sony di-
vides them up into six
"genres" (Dolby, Movie,
3D, Music, Sports, and
Games), it will repay a
user's effort to experiment
with "multicultural" am-
bience effects.

The Dolby genre com-
prises Dolby Pro Logic and Dolby
Digital decoding, which are automati-
cally selected according to the type
of input signal received. To such basic
decoding (the Normal mode) you can
add some simple phase-shifting be-
 tween the surround channels to pro-
duce the Enhanced mode. This subtly
reduces the mono-ness of Dolby Pro
Logic's surround channels (similar to
THX decorrelation but not as effect-
ive). The Dolby Digital mode sounded
every bit as spectacular as always.

The Game genre has only one mode,
which is designed to "obtain maxi-
mum impact from video game soft-
ware," according to the manual. The
Arena mode of the Sports genre, re-
producing "the feeling of a large con-
cert arena," is said to be "great for
rock and roll," while the Stadium mode
provides the ambience of "a large
open-air stadium" and is said to be
"great for electric sounds." (Huh?
Thunderclaps? Transformer explo-
sions?) I found both Sports modes ex-
cessively echoy.

Not so with most of the Movie, 3D,
TEST REPORTS

and Music genres, which consist of eight, four, and ten modes, respectively. The Movie modes add ambience processing to Dolby Digital or Dolby Pro Logic decoding, again depending on the source format (stereo music receives Dolby Pro Logic steering).

Within the Movie genre the most interesting modes are those reproducing the ambience characteristics of actual Sony Pictures production studios. Respectively, the Cinema Studio A, B, and C modes give you the Cary Grant Theater, the Kim Novak Theater, and the Sony Pictures scoring stage, all in the Sony Pictures lot in Hollywood (actually, Culver City). There are also a Night Theater mode (for listening at lower levels), Mono Movie (producing a theaterlike environment from mono soundtracks), and generic Small, Medium, and Large Theater modes.

The Music genre’s modes include small and large rectangular concert halls, small and large opera houses, small and large jazz clubs, a church, Live House (a rock-and-roll club), Acoustic (stereo with only the equalizer tone controls activated), and the ever-popular Karaoke (which removes recorded vocals for singing along).

Finally, the most interesting genre, 3D, and its four modes; these are not strictly speaking, ambience modes but virtual-reality processing modes that make use of HRTFs (head-related transfer functions) in acoustical crosstalk-cancellation schemes driven by decoded Pro Logic or Dolby Digital signals. Virtual Enhanced A and B are both claimed to “create virtual rear speakers from the sound of the front surround speakers without using actual rear speakers” (emphasis added). Each creates a different array of virtual surround speakers. The Virtual Rear Shift and Virtual Multi Rear modes use actual surround speakers to “shift the sound of rear speakers away from the actual speaker position” and to “create an array of virtual rear speakers from a single pair of actual rear speakers.”

With non-Dolby Digital material, both Virtual Enhanced modes seemed completely ineffectual. With 5.1-channel Dolby Digital soundtracks, on the other hand, the virtual surround speakers “appeared” seemingly out of nowhere, at the approximate locations diagrammed in the manual — and they were even elevated above ear level! Virtual Enhanced A was even more spectacular than Virtual Enhanced B, but neither mode worked at all if I moved more than a couple of inches off the center line between the front left/right speakers. (All HRTF processes require nearly perfect acoustical symmetry in the sonic paths from the speakers to the ears.) In any case, if you don’t have surround speakers yet, the Virtual Enhanced modes provide a useful stopgap, especially with Dolby Digital material (you should still use a center-channel speaker).

Virtual Rear Shift and Virtual Multi Rear were even more finicky in terms of listener position. I found that their effectiveness increased dramatically with increasing directionality in the surround speakers: conventional front-radiating speakers produced a more pronounced effect than either dipole or dipole surrounds (room reflections dilute HRTF effects). The most vivid results came when I used rear-placed front-radiating surround speakers in the Virtual Multi Rear mode. Least effective was Virtual Rear Shift mode used with side-placed surrounds. Again, the results were best with DD material and, apart from a typical HRTF timbre shift, minimal with anything else.

If you do have a full home-theater speaker system, you will probably be pleased with the processor’s Music and Movie modes. Their ability to enhance both soundtracks and music ranged from good to superb in our tests, even at their default settings.

Do experiment with multicultural processing — you might get surprisingly fine results. For example, Cinema Studio A, the Cary Grant Theater, was the best processing mode I have ever used for enhancing stereo opera recordings. Cinema Studio B was not far behind, and these along with many of the other Movie modes were quite effective in adding spaciousness to pop recordings without producing an echoey distancing of vocals. That’s because none of the Movie modes adds ambience processing to center-located dialogue or musical vocals, which benefits operas as it promotes intelligibility of soundtrack dialogue. Keep in mind, however, that using any of the Movie modes to enhance music will place continual strenuous demands on a center speaker that could adversely affect its sound quality.

With stereo material the Music modes do not put anything into the center speaker; even vocals receive ambience processing. So they were less effective in enhancing pop music than classical instrumental, but they were excellent at the latter. The concert-hall settings produced a very life-
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like spread of reverberation around the listening room (I mostly used side-placed dipole surround speakers).

“Couldn’t you like me the way I am?” Kim Novak asked in Vertigo. Well, there is a fly in the ointment: the SDP-E800 can be noisy. At volume settings (10 to 12 o’clock) that produced lifelike levels with symphonic classical music from power amplifiers and speakers of typical sensitivity, the background hiss level ranged from distinctly noticeable to downright annoying, particularly from the surround channels. On the precious few soundtracks with truly wide dynamic range (as opposed to those that merely range from moderately loud to deafening), the added surround-channel noise of the Movie modes was just as irritating. The processor never even achieved a barely acceptable noise level of -70 dB in our standardized tests in any mode or channel. I’ve remarked on the noisiness of Sony’s surround processing before, and it’s disappointing to encounter it again. Even at the SDP-E800’s comparatively low price, there’s no need for a processor employing a 24-bit DSP chip to be this noisy. Again, Kim Novak in Vertigo: “It shouldn’t have happened this way.”

Still, the SDP-E800 is one of the best stand-alone Dolby Digital decoders out there, and its price is substantially below what you would pay for similar features in other processors (less than one-tenth the price of the much quieter and even more versatile Lexicon DC-1, the best of the breed). Fortunately for the SDP-E800, most pop music and soundtracks don’t have nearly the dynamic range of, say, Stravinsky’s Rite of Spring and thus wouldn’t require such high volume settings. And even with critical classical material I was often able to hear through the noise and enjoy the ambience processing. In fact, ever since the SDP-E800 arrived I’ve been pouring through movie discs and CDs exploring what the processor can do. As Cary Grant put it in Bringing Up Baby, “There haven’t been any quiet moments.”
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"Ensemble makes a great argument for mail-order everything." The Village Voice

Our best subwoofer/satellite speaker system. It uses ultra-slim (4.5") dual subwoofers and two-way satellites. White or charcoal. Factory-Direct Price: $599.99

The Ensemble II, like its companions in the Cambridge SoundWorks lineup, performs so far beyond its price and size class that it can be compared only with much larger speakers at substantially higher prices...it represents an outstanding value. Stereo Review

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Stereo Review

"The Powered Subwoofer's performance was first rate..." Home Theater

"...a winner...sonically the Powered Subwoofer is a knockout. Bravo."

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The Definitive Technology ProCinema speaker system was designed as an affordable means of enjoying movies at home as well as providing high-quality music reproduction. The available system components are the ProMonitor 100 satellite speakers, ProCenter 100 center-channel speaker, and ProSub 100 powered subwoofer. They were designed as a compatible family whose driver complements allow a diversity of system configurations.

My report focuses on a subwoofer/satellite system comprising a pair of ProMonitor 100 speakers and the ProSub 100, which can be upgraded for surround-sound playback by adding a ProCenter 100 ($199) and two more ProMonitor 100s for the rear surround channels (see facing page). It is also possible to use a pair of ProSub 100 subwoofers if preferred.

The ProMonitor 100 is a small two-way speaker with a nominal frequency-response rating of 50 Hz to 30 kHz. Its enclosure (available in black or white) is molded from a dense synthetic material called PolyStone that is acoustically “dead.” The cabinet, which is structurally strong and rigid, is molded in a shape that the manufacturer calls NROC, for Non-Resonance Optimization Curve. Its constantly varying curvature (there are no parallel surfaces in the enclosure) is said to minimize internal-resonance modes of the enclosed volume.

The drivers are a 5½-inch woofer with a rigid cast-alloy basket and a 1-inch aluminum-dome tweeter with a silk surround. These are the same basic drivers used in the company’s flagship BP2000 system. The curved plastic grille is easily removed to reveal the drivers.

The ProMonitors have a highly versatile mounting system. Each speaker has an integral pivoting base on a ball joint, which can also be unscrewed and mounted on the rear of the enclosure to install the speaker on a wall. The ball joint enables each speaker to be positioned to suit the needs of the listening environment. And, finally, the rear of the speaker cabinet has a simple keyhole mount that can be used for fixed wall-mounting with a screw.

The ProSub 100 is usable not only with the ProMonitor 100s but also with a variety of other small speakers that are capable of playing down to 100 Hz or so. Its cabinet is available in either black or white. Like most subwoofers, the ProSub 100 should be placed on the floor, preferably near a corner or wall.

The module contains a 10-inch long-throw driver driven by an integral 125-watt amplifier. All inputs and controls are on the rear panel of the enclosure, together with a full-width rectangular vent. There are knobs to adjust amplifier gain (level) and the low-pass crossover frequency, which can vary between 40 and 150 Hz, with a slope of 24 dB per octave.

There are also RCA-jack input connections for line-level signals from a preamplifier as well as gold-plated binding-post input terminals for driving the subwoofer from an amplifier’s speaker-level outputs. The front (speaker opening) of the subwoofer is covered by a removable snap-on grille.

The instructions for setting up the ProCinema components are explicit and detailed. Depending on the complexity of the installation, it can be a simple or involved process (this, of course, applies to any home-entertainment system installation).

In our test/listening setup, all three ProCinema speakers were driven from our system amplifier’s speaker-level outputs. We mounted the satellites on stands, about 8 feet apart, that placed their tweeters 43 inches above the floor. For listening tests, we placed the ProSub 100 on the floor near the left speaker, about a foot from the wall behind it. We adjusted its level and crossover controls by ear (the recommended method and the only practical one) to suit the program material and our listening preferences.

We measured the satellites’ response (without the subwoofer) the same as we do for all speakers we test. Later
PICKING UP WHERE Julian Hirsch left off, I auditioned the home-theater version of Definitive Technology's ProCinema 100.3 system, which adds to that three-piece lineup the ProCenter 100 center-channel speaker and a second pair of ProMonitor 100 satellites. Dubbed the ProCinema 100.6, the six-piece system lists for $1,350.

The ProCenter 100 is a magnetically shielded two-way design that uses the same 1-inch aluminum-dome tweeter found in the ProMonitor 100 satellite. But instead of a lone 5¼-inch woofer, the ProCenter has two 4½-inch woofers. The ProCenter's rated sensitivity is also 3 dB higher than that of the ProMonitor 100. Cabinet construction is the same. In a nice touch I'd like to see more often, the underside of the ProCenter 100 has an adjustable-tilt leg so that you can aim the speaker down toward the listening position if necessary.

Definitive Technology describes the ProCenter 100 as "perfectly timbre-matched" to the ProMonitor 100 satellites. Timbre-matching improves the naturalness of a multispeaker system by insuring that the movement of sounds across the front three speakers is seamless and believable, and also that the system retains the same sonic signature when you switch between two-channel music programs and movie/TV surround sound.

I set up the ProCinema 100.6 in my living room, placing the ProCenter 100 atop a Pioneer big-screen TV and the ProMonitor 100s on speaker stands, 24 inches tall for the front pair and 40 inches tall for the rear surround pair. I placed the ProSub 100 just to the right of the right front speaker, about a foot out from the front wall (not in a corner). Theta's Casablanca digital surround preamp and Data III CD/laserdisc transport served as the front end, along with a Toshiba SD-3006 DVD player, while a Krell KAV-500 500-watt five-channel power amp drove the center and satellite speakers.

Overall, the ProCinema 100.6 speaker system provided competent performance with laserdiscs and DVD movies. The ProSub 100 subwoofer struck a balance between musical tightness and cinema impact, and the integration between the ProSub 100 and the ProMonitor 100 satellites up front did not suffer from any significant holes or cancellations. Deep-bass performance was also very good, and the dynamics were impressive for a system in this price range. The use of identical, direct-radiating speakers for the surround channels was an advantage during Dolby Digital soundtracks, of which can deliver discrete, directional sound effects in those channels.

Although I compensated for the ProCenter 100's higher sensitivity when I calibrated all of the speakers' levels to within 0.2 dB of each other, I found that it had a brighter, more forward sound than the satellites. To get the best overall performance from the system, I replaced the ProCenter speaker with a fifth ProMonitor 100 satellite. Once I did so, both pink-noise test signals and Dolby Surround soundtracks were more accurately reproduced.

— Corey Greenberg
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we tested the subwoofer frequency response alone using two microphones, one close to the driver cone and the other at the rear port, summing their outputs in proportion to their respective areas.

The averaged room response of the two satellites was flat within ±4 dB from 120 Hz to 15 kHz. Over most of that range, from 400 Hz to 10 kHz, the output variation was a mere ±1 dB. The quasi-anechoic MLS frequency response at 2 meters was an excellent ±5 dB from 300 Hz to 20 kHz.

The tweeter's horizontal dispersion was exceptionally good for a 1-inch dome radiator. At angles of ±45 degrees off the forward axis of the speaker, the output sloped off (relative to the frontal radiation) by only about 5 dB from 5 kHz to 15 kHz, continuing downward by only another 4 dB from 15 to 20 kHz.

The ProSub 100 subwoofer's maximum output occurred at 70 Hz, falling off at 6 dB per octave from 70 to 35 Hz and more rapidly below that point. Since there is no fixed relationship between the subwoofer's frequency response and level relative to the main system response, it was impossible to establish an overall frequency-response figure for the complete system (this applies to most sub/sat speaker systems). The relative system levels must be adjusted to suit the user's taste, and perhaps modified for different program material.

Both the ProMonitor 100 and the ProSub 100 are magnetically shielded for use close to a TV or video monitor. Magnetometer measurements on the exterior surface of the speaker indicated a flux level typically under 0.5 gauss, an insignificant level.

The nominal impedance of the ProMonitor 100 is stated as being "compatible with 8-ohm outputs." In our measurements, it reached its minimum of 3.6 ohms at 250 Hz, with maxima of 16.5 ohms at 100 Hz and 20.1 ohms at 19 kHz. The satellite's sensitivity is specified as 90 dB (our measurement was 89 dB). In view of its high sensitivity, the ProMonitor 100 should be very easy to drive with any properly functioning amplifier.

In listening tests, the ProMonitor 100/ProSub 100 trio acquitted itself admirably. As one might expect from the compactness of the satellites, the spatial imaging of the system was excellent, and the subwoofer was both visually and acoustically unobtrusive. The deep bass was effectively reproduced down to near 30 Hz (depending on the control setting). It is worth remembering that a full-featured subwoofer is not something you can simply put in a corner, connect to an amplifier or receiver, and walk away. In general, the crossover frequency and level must be set by trial and error to harmonize with the requirements of the listening environment, the other system components, and the program content. When these conditions are met, the ProCinema components deliver a caliber of sound that belies their modest size and price.
The task of testing NAD's Model 118 preamplifier sent me on a pleasant trip down memory lane. It reminded me of two classic products from the early days of my involvement with audio, the innovative and still impressive Apt/Holman preamplifier and the versatile dbx Model 117 compressor/expander, both long discontinued. While there are genealogical and numerical links between those classic models and the NAD Model 118, the new preamp is far more evolved technically than its ancestors.

For starters, it is digital: nearly all of its functions are performed by a Motorola DSP56004 digital signal processing chip operating in the digital domain, even when fed from analog sources. Each of its four rear-panel inputs (disc, tuner, video, and tape) is available in analog and digital form via a pair of RCA jacks for stereo analog signals and a coaxial digital input; unfortunately, there are no optical digital inputs. The analog and digital inputs for each source are separately selectable, giving the preamp an actual input capability of four analog and four digital sources.

To obtain a digital signal from an analog source, the analog signal first passes through an input attenuator that is separately adjustable for each input. This prevents overloading of the Philips Bitstream analog-to-digital converters (ADCs) on peaks, which are accurately indicated by an LED above the volume knob. Then the signal is immediately converted to 48-kHz, 18-bit digital audio. Until the signal reaches the digital-to-analog converters (DACs) and emerges in analog form from the preamp's main analog output, a standard pair of RCA connectors, all audio processing is done through strictly digital computation.

For driving external DACs, there's also a digital output carrying the same signal that feeds the Model 118's internal DACs. The record outputs are available in either analog or digital form and thus allow analog recording of digital sources. Furthermore, they give you the ability to record the source either before or after processing.

The NAD 118's family resemblance to those classic Apt and dbx components is clearest in its processing functions. There are six of them, each separately activated and adjusted: bass, midrange, and treble tone controls; infrasonic filter plus midrange and treble tone controls; FM (see below); Width (an Apt function); Width & Spread; and variable compression (similar to that provided by the dbx 117).

The tone controls are unconventional in their action: neither the bass nor the treble control has much effect on the midrange even at extreme settings. Believe the manual when it delimits the bass control's action to "contra-bass, kettle drums, bass guitar, etc." and the treble control's to "cymbals, high-hats, and other percussion instruments." The midrange control operates like a graphic-equalizer control band centered at around 3 kHz. From this vantage point it can greatly influence the sound of "vocals, trumpets, violins, etc." Unlike analog tone controls, the Model 118's digital controls produce no phase shifts, and their actions are absolutely identical on both channels, preserving stereo imaging.

NAD's FM function is just as well thought out and even more interesting. When turned all the way down, the FM control will pass the input signal unaltered. As you turn it up, the signal becomes progressively more monophonic, which will reduce the hiss of stereo FM broadcasts, hence the name of the function. At the same time, however, simulated-stereo processing gradually comes into play, maintaining apparent separation for many types of music. When the FM knob is turned
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All the way up, the reproduced signal is full mono "but spaciousness and spread [have] been regained thanks to the stereo simulation." The Model 118's simulated-stereo processing is a comb-filter system that splits the audio band into approximately one-third-octave intervals and sends alternate bands to the left and right channels.

The Width control acts as it did on the APT preamp, adjusting the stereo separation to compensate for deficiencies in recordings. From its neutral, pure-stereo setting, turning it all the way down makes the signal increasingly monophonic. Turning it up will gradually increase the relative level of the difference between the two stereo channels to produce an increase of separation. All the way up, the signal is pure L - R, with the two channels out of phase. Width has no effect on mono signals.

Width & Spread combines the action of Width with a separate Spread control governing the same simulated-stereo process used in the FM function. Width acts as above, and Spread introduces a variable amount of simulated stereo processing into the preamp's output.

The last main DSP function is compression. Turning compression up will raise the relative volume level of soft passages by as much as 24 dB without changing that of the loudest passages.

"Making the music much more enjoyable at low volume levels." The manual also mentions that recordings of compressed signals can be useful for playback in a car or in a portable cassette player.

Turning the compression control down from its neutral position will expand the signal's dynamic range, lowering the relative volume level of soft passages without changing that of loud passages, thus increasing the difference in level between loud and soft.

**M E A S U R E M E N T S**

**Digital Input Performance**

Measured at the main preamp output with the volume control set just below clipping with a full scale (0-dBFS) digital input signal (12 o'clock position). Except for tone-control and infrasonic-action filters, all measurements taken with DSP functions off. Differed 16-bit input signals.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM OUTPUT LEVEL (0-dBFS input)</td>
<td>Normal gain +0.268 volts</td>
</tr>
<tr>
<td>LINEARITY ERROR at 0-dBFS</td>
<td>+0.05 dB</td>
</tr>
<tr>
<td>NOISE (re maximum output, A-weighted)</td>
<td>Normal +0.05 dB</td>
</tr>
<tr>
<td>EXCESS NOISE (without/in-band signal)</td>
<td>16-bit (EN16) +0.85 dB</td>
</tr>
<tr>
<td>DISTORTION (THD+N, 1 kHz)</td>
<td>At 0 dBFS 0.003%</td>
</tr>
<tr>
<td>FREQUENCY RESPONSE (20 Hz to 20 kHz)</td>
<td>Normal +0.04 dB to +20.19 dB</td>
</tr>
</tbody>
</table>

**Analog Input Performance**

Measured from main preamp output with input attenuator set to -5 dB (suitable for a typical home CD player). For all tests except input overload the volume was set to just below output clipping with a 2-volt input (approx. 1 o'clock position). All DSP functions off.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM OUTPUT LEVEL (2-volt input)</td>
<td>Normal gain +0.3 volts</td>
</tr>
<tr>
<td>INPUT-OVERLOAD LEVEL (2-volt input)</td>
<td>Normal gain +2.6 dB</td>
</tr>
<tr>
<td>DISTORTION with 2-volt input</td>
<td>0.003%</td>
</tr>
<tr>
<td>FREQUENCY RESPONSE</td>
<td>20 Hz to 20 kHz, +0.05 dB</td>
</tr>
</tbody>
</table>
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Reservations Required  Digital Cinema Sound™ is one of the exclusive features in the Sony Dolby® Digital Receiver. It delivers the movie studio sound sought after by today’s top directors right to your home. A powerful 24-bit digital processor contains the acoustic characteristics of three state-of-the-art movie production dubbing stages. The result is astounding. You’ll hear movies the way these directors mastered them—from dramatic sound effects that match stunning screen images, to the subtle nuances of the whispered word. It’s just another way Sony makes great things happen.
TEST REPORTS

This can be useful for partially undoing the compression that is universal with radio broadcasts (which is how I mainly used my dbx Model 117).

The NAD preamp also provides other, less exotic DSP functions: balance, mono, and polarity inversion. An analog) High-Gain button boosts the output volume level by 10 dB and should be engaged when playing at high volumes. It enables a greater range of fine control of the volume than the typical single range provided by other digital components. The Model 118 has neither a headphone output nor any AC convenience outlets.

Nearly all of the front-panel controls are duplicated on the remote, which even adds a few functions. The most important of these are the two types of system memory: the Input Memory Bank memorizes the DSP settings separately for each input, while the DSP Memory Bank separately stores preferred settings for each DSP function regardless of the selected input.

For the advanced user, the Model 118 has various esoteric options accessed by special front-panel button sequences. For example, you can change the default 48-KHz sampling rate for the analog inputs to 44.1 KHz. This is essential if you expect your processed output eventually to end up on a CD-R or MD. You can also change the level of distortion-eliminating dither on the digital-recorder output from its default 18-bit level to one suitable for recording on a 16-bit digital recorder. Finally, you can reset all the digital functions to neutral, which otherwise requires calling up each function individually and pushing the remote's Clear button.

As long as you avoid lighting the Peak (overload) indicator, you don't have to worry about the signal quality of the Model 118 — all of our lab tests produced superb results. Since in digital-input operation the NAD 118's internal DACs will substitute for the DACs in the digital source, our tests measured much of the preamp's performance as if it were a CD player. The excess-noise result with quasi-20-dB higher than perfect mono, and without deemphasis were only 1.2 dB without de-emphasis were only 1.2 dB higher than perfect 16-bit performance. All the noise results indicate that this preamp will add negligible noise to a digital input signal. Our other test results confirm that the Model 118's digital-to-analog performance is worthy of comparison with that of the best CD players.

The preamp's analog-to-digital performance was also excellent. Looked at from the digital-recorder output, it was superior to that of most of the digital recorders we have seen. The Model 118 can substitute for the ADC stages of a digital audio tape (or disc) recorder with no loss in quality, and quite possibly with a gain in quality, especially since the digital-recorder output contains noise-shaped dither that reduces the quantization noise in the crucial 2- to 5-KHz region by several decibels.

The measured performance only reinforces the sonic cleanliness we heard in listening tests. With the DSP functions switched out the preamp's output was as free of noise and distortion as a direct feed from a digital source — which, of course, is essentially what it was. With DSP in, the tone controls sounded just as the manual said they would, affecting only the specified sound ranges. The midrange control greatly changed the sonic character of violins, for example, while the treble control was more effective in taming vocal sibilance. Likewise, the other main DSP functions performed suitably for their intended uses.

But the NAD 118's DSP functions are far more versatile than even the extremely well-written and comprehensive manual would lead you to believe. The expansion mode of the compression function, for example, was fascinating to use not only on compressed broadcast signals but also on pop CDs, which are often very heavily compressed. The approximately 3-KHz placement of the midrange tone control makes it useful for undoing the slight dip in frequency response that speakers often have in this range, where many woofer-to-tweeter crossovers occur. I also experimented with using the FM function in conjunction with a Dolby Pro Logic decoder to produce pseudo-stereo surround channels, sort of like THX decorrelation, with very interesting results. And the Model 118 makes it easy to gauge these effects from your listening position using the remote's DSP in/out button.

I have only two complaints, both operational. First, the setting of any main DSP function (including volume...
and balance) is displayed either by the position of the applicable front-panel knob or by the position of a horizontal line of LEDs running along the top of the display window. But turning a front-panel knob doesn't change the display, which itself won't light up unless adjustments are being made with the remote. As it says in the manual, there will be times when "the position of the corresponding [DSP] controls on the front panel will bear no relation to the actual setting chosen." On the remote NAD provides a button that changes all the DSP settings to those indicated by the positions of the knobs, but there is no control that moves the front-panel knobs to correspond to what the indicator lights show. In any case, the nature of the LED readout makes it less useful for determining settings than the knob positions, which are themselves indicated only by a small dot on each control.

That leads to my second ergonomic complaint. Since all the preamp's processing is digital and is accomplished in very small, exactly repeatable steps, without an equally precise readout of each function an accurate return to an earlier setting is virtually impossible. While numerical readouts would probably spoil the elegant appearance of the front panel, they would actually make the Model 118's DSP functions much easier to use.

Why am I concerned about such exactitude for functions that will primarily be adjusted by ear? Because the array of functions offered in the NAD 118 are supremely suited for processing sounds for recording, especially older material with less than "CD-quality" sound. When doing such post-production work, it is vital to be able to return to your previous settings, especially if you are doing any editing. And it is ironic that the best source for older or distressed program material suitable for improvement by the Model 118 is not easily accommodated - it has no phono input.

So if you need a stereo-only preamp that takes line-level analog and multiple digital signal sources and has a fascinating collection of useful signal-processing functions, your only choice is the one-of-a-kind NAD 118. Thank goodness that the thought put into its design — NAD's white paper describing the circuitry is a paragon of clarity and well-grounded reasoning about digital audio — has produced a component of such superb sonic performance and extraordinary versatility.

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Hsu Research has been selling high-quality subwoofers by direct mail for several years now. The TN1225HO is the company's latest model, and it differs from earlier Hsu subs in several important ways. First, although it uses a 12-inch driver, the enclosure is significantly smaller than in the company's previous 12-inch subwoofer. The new enclosure, while still cylindrical, now takes up a minuscule 0.81 square feet of floor area and consumes a mere 2.2 cubic feet of your living space. Also, the TN1225HO is designed for a low-frequency extension of 25 Hz.

Interestingly, the new model is available in three configurations. You can buy it powered by an outboard 250-watt amplifier with a fixed electronic crossover or by a 150-watt amplifier with a crossover adjustable from 40 to 180 Hz. If you already have an amplifier and crossover in your present system, you can buy the speaker section alone. The amplifier is not built into the subwoofer enclosure, so it can be placed at the listening position to help simplify system tuning.

The TN1225HO’s enclosure is a thick cardboard tube 12¼ inches in diameter and 32 inches tall with the long-stroke driver mounted in the top. The enclosure has a 4½-inch-diameter vent some 20 inches long with large flares at either end. The bottom contains a pair of dual banana-jack input terminals. The enclosure is suspended 2 inches above the floor on three conical feet so that the driver cone faces upward and the port faces the floor. There is no speaker grille, which means that you cannot place anything on top of the subwoofer. The top can, however, be protected by an optional metal grille, available at Radio Shack for $12.99.

Specifications include a frequency response of ±2 dB from 25 Hz to the crossover limit, power handling of 250 watts, impedance of 4 ohms, and sensitivity of 93 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input.

The 250-watt amplifier option has a fixed low-pass crossover with a 24-dB-per-octave slope. The crossover frequency is set with a plug-in module; the standard frequency is 91 Hz, but you can specify 28, 34, 43, 51, 62,
75, 109, 131, or 151 Hz. The amplifier accepts stereo line-level and speaker-level inputs and has a level control, a two-position phase control, a single speaker-level output, a crossover-defeat switch, a defeatable soft-clipping circuit, and a metal chassis that fits in standard rack spaces.

The 150-watt amplifier looks very much as if it has just been carved out of the back of an existing powered subwoofer. Mounted in a 10 x 8 x 5½-inch particleboard box, it has a mono line-level input (both RCA and XLR jacks), a variable 40- to 180-Hz low-pass crossover with a 12-dB-per-octave slope, a continuously variable phase control, a nondefeatable passive soft-clipping circuit, dual banana-socket speaker-level outputs, and a detachable line cord. The inputs, all controls, and the heat sinks for the amplifier are mounted on one side of the enclosure. Its gray-painted finish is nice enough, but it makes no style statement and seems destined to be placed behind your equipment rack instead of in it.

So the sub is small. What else? Well, it kicks out major bass jams. As expected, it had somewhat less extension than previous Hsu Research models I've tested, going down to 27 Hz in the laboratory with a tight ±2.5-dB tolerance when driven by the 250-watt amplifier with its crossover bypassed. With the sub placed in the best corner of my large listening room (13 x 23 x 18 feet with large openings and adjacent spaces), its room response at the listening position 2 meters away was ±2.6 dB from 30 to 82 Hz using the 91-Hz crossover. In a smaller room, I'd expect its response to extend down to 23 Hz.

Measured with a special tone-burst signal and a 10-percent distortion limit, the big amplifier produced a maximum output of 111 dB SPL at 62 Hz, an average of 107 dB over the power-hungry range from 25 to 62 Hz, and 102 dB from 16 to 80 Hz. The 150-watt amplifier cranked out a maximum SPL of 107 dB at 62 Hz and 103 and 99 dB, respectively, over the 25- to 62-Hz and 16- to 80-Hz ranges.

When I tried driving the subwoofer with a 250-watt Bryson 4B amplifier, it delivered 4 dB more SPL at 32 Hz, but over our bass ranges of interest the overall output was 1 dB lower than with the 250-watt Hsu amp. That's because the Hsu amplifiers contain a bass boost of 4 dB at 27 Hz, which flattens and extends the response of the ported enclosure (tuned to 24 Hz) and adds about 9 dB of clean bass at 25 Hz. They also contain 18-dB-per-octave high-pass filters that keep infrasonic signals from overloading the speaker.

The behavior of the Hsu electronics was excellent. The crossover in the 250-watt amplifier was 3 dB down at 82 Hz, with the specified 24-dB-per-octave slope. The 150-watt amp's crossover had a 56-Hz turnover point at the lower end of its rotation (where the knob reads 40 Hz) and 182 Hz at full clockwise (where the knob says 180 Hz).

Using program material, specifically the car-bomb explosion scene in Clear & Present Danger, I was able to blast out 114 dB SPL at the listening position using a Dolby-calibrated 0-dB setting and a fully tuned and tweaked full-range surround system. Forgetting distortion control (and good taste), I was able to whack out 114 dB on Bass Ecstasy's "Bass Ecstasy CD, 115 dB on "Jurassic Lunch" from Telarc's Great Fantasy and Adventure Album, and 108 dB on the cannons in Telarc's recording of the 1812 Overture. The cannons were, of course, limited, because there was a preponderance of infrasonic information being rejected by the infrasonic filter. I was unable to get the speaker's cone to bottom out at any time, but I was able to generate substantial audible suspension distress as I approached the speaker's limits.

So there you have it: performance and value in a big-league winner from Hsu Research. The TN1225HO plays louder (over 110 dB SPL with program material) and goes deeper (a true 25-Hz extension) than any of the competitive subs I've tested in its price or size class. The performance will thrill all but the most ardent pipe-organ fanatics, who will miss the 16-Hz fundamentals.

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[Dimensions: subwoofer: 12 inches in diameter, 32 inches long; outboard 250-watt amplifier/crossover, 17 x 4 x 12 inches; 150-watt amp/crossover, 8 x 10 x 7 inches]

[Weight: subwoofer: 22 pounds; 250-watt amp, 17 pounds; 150-watt amp, 13 pounds]

[Finish: subwoofer: black knit cloth; 250-watt amp, black metal; 150-watt amp, gray-painted particleboard cabinet]

[Price: subwoofer alone, $350; with 250-watt amp, $800; with 150-watt amp, $575]

[Manufacturer: Hsu Research, Dept. SR, 14946 Shoemaker Ave., Unit L, Santa Fe Springs, CA 90670, telephone, 800-554-6150]

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[STEREO REVIEW NOVEMBER 1997 73]
The Advanced Technology
Inside Definitive's BP2000

Low frequency tuned column

25 mm pure aluminum dome, aperiodic transmission-line tweeter

Low diffraction driver baffle interface

Complex Linkwitz Riley crossover network

Front mirror-imaged D'Appolito bipolar array in non-resonant chamber

Massive subwoofer magnet structure

Electronic crossover

Accelerometer optimized cabinet braces

1" thick high density medite front baffle

Sonopure™ fiber internal dampening

Piano gloss black or gloss cherry endcaps

1" thick rear medite baffle

High definition pure copper wire

Multi-layered dampering pads line entire cabinet

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

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

15" high-power long-throw bi-laminate polymer subwoofer driver

Complete built-in powered subwoofer system

Gold-plated low-level subwoofer input (for optional use)

Gold-plated tri-wirable speaker level inputs

High current 300-watt RMS subwoofer amplifier

Toroidal transformer

1 1/4" thick high-density medite cabinet sidewall

"...I would choose these speakers for myself."
~Julian Hirsch, Stereo Review
Definitive's Amazing BP 2000 & 2002 Are The World's Most Highly Acclaimed Loudspeakers!

"The first speaker I have been able to audition in my own familiar surroundings that has given me that special thrill that usually costs ten or more times its price to obtain."

-Julian Hirsch, Stereo Review, USA

"Literally Staggering"
- Home Theater, USA

Top reviewers around the world agree that Definitive's amazing BP 2000s & BP 2002s combine highly advanced technology and superior build quality in order to achieve unsurpassed sonic performance plus unequalled value.

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"Absolutely Unsurpassed"
-Prestige HiFi, France

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CIRCLE NO. 15 ON READER SERVICE CARD
Millennium Model 2.4.6
DTS Decoder

DANIEL KUMIN  START LABORATORIES

If you thought you had your home-theater bases covered with Dolby Digital, Pro Logic, and DSP surround modes, you may want to think again. DTS encoding from Digital Theater Systems might be new to home audio, but this discrete 5.1-channel digital surround-sound technology is the predominant system in commercial cinemas. DTS enjoys a roughly one-to-one lead over Dolby Digital, the theatrical version of Dolby Digital, in the number of "screens" supported. DTS's six digital soundtracks — front left, center, right, left and right surround, and low-frequency effects (LFE)/subwoofer, the same breakdown as Dolby Digital — reside on CD-ROM (two discs per film, typically), which are played by CD-ROM drives much like the one in your computer. An optical SMPTE timecode striped along the film print synchronizes the disc and film.

Now Digital Theater Systems is introducing its format to home cinema via a small but growing catalog of laserdiscs and DTS-only compact discs, both carrying a "domesticated" version that, data-wise, is identical to what is decoded in theaters. DTS is similar in concept to Dolby Digital in that it uses data-reduction techniques to decrease the amount of data required to produce six channels of digital audio. However, DTS enjoys far greater bit density. The system exploits the same carrier as conventional CDs, about 1.5 megabits per second — nearly four times that of a Dolby Digital laserdisc's standard of 384 kilobits per second.

The greater bit density has two profound implications. First, DTS's larger "data pool" is seen by some as supporting the system's claims of superior quality over Dolby Digital. (DTS uses 20-bit encoding and can preserve this resolution in playback, which could certainly be a factor.) But the second implication is that its CD-equivalent bit rate requires DTS to displace the conventional, CD-format PCM digital stereo soundtrack on a laserdisc, leaving only the laserdisc's "hi-fi-type" analog stereo soundtrack for users who lack DTS decoding capability. (The Dolby Digital soundtrack on a laserdisc occupies the space of one analog channel, leaving only a mono analog soundtrack but retaining the stereo PCM digital data. Thus, Dolby Digital laserdiscs can play in digital stereo or Pro Logic on virtually any laserdisc player.) DTS-encoded CDs, of course, utterly replace the conventional, two-channel PCM data with the proprietary DTS data format.

As a result, DTS discs can be mastered quite easily, be they CDs or laserdiscs. But without a DTS decoder, DTS laserdiscs yield only 1986-style analog stereo sound, and DTS CDs are unplayable, yielding nothing but full-scale digital noise, which is hideous, and potentially dangerous if inadvertently reproduced at high volume.

At this writing, a little more than three dozen "High Definition Surround" DTS CDs were available on the DTS and HDS labels, encompassing most genres, though consciously lacking in classical or new mainstream pop. And with enthusiastic support from Universal Studios, about the same number of DTS laserdiscs were on the shelves, with more arriving every month. Despite considerable support from the audio world (DTS has sold numerous hardware licenses, mostly to high-end-oriented manufacturers), DTS has so far not been adopted as an "official" multichannel audio mode for DVD. Nevertheless, DTS indicates that, with Universal's recent announcement of its participation in DVD, DTS-format DVDs from Universal should appear in 1998, "barring any unforeseen technical, political, or economic issues."

At press time, technical details were still not available on how this will be accomplished, or whether these DVDs will also carry Dolby Digital or two-channel PCM soundtracks. On the face of things, it seems unlikely that a single disc could include all three formats, but time will tell. These and other marketing challenges facing DTS in home theater and home audio are, obviously, not insignificant.

Of course, equally significant questions arise about the decoding hardware required for DTS playback. The Millennium Model 2.4.6 under scrutiny here is one of the first standalone DTS decoders to reach the market, though DTS decoding can be built into A/V receivers or preamps with relative ease. B&K and Lexicon both offer preamps with DTS decoding, and Dolby Digital/DTS receivers are on the way from Sherwood and B&K.

The Millennium Model 2.4.6 is a one-trick pony. It functions as an outboard decoder for DTS only; confronted with any other digital format, or analog audio, it simply passes the signals along to subsequent processors (if any) in the system, then to amplifiers and speakers.

The Model 2.4.6 is laid out simply on a steel rack-mount chassis (the rack...
ears are removable). On the front are a power switch, a mini auto/manual toggle, a master volume knob, and small trim knobs for the surround, center, and LFE levels. Around back are six RCA-jack input/output pairs, one for each channel, a trio of digital ports comprising a coaxial input and output and one optical input, and a receptacle for the supplied AC adapter, or “wall-wart,” power supply. (Oddly, this is marked “AT&T Component Telephone Supply.”) Also on the rear panel are eight system-configuration DIP switches of the sort that any computer geek would love.

Inside, a single circuit board carries both the analog input/output circuitry and the digital doings, which features a Motorola DSP56009 digital signal processor with the DTS logo screened on and three stereo digital-to-analog (D/A) converters.

The Millennium 2.4.6 can be set up in several different ways. It could be wired directly to power amps and fed by a laserdisc/CD player for a DTS-encoded disc at low volume and smoothness from the 20-bit ultra-high performance DTS decoder. Alternatively, it could be wired to preamps or power amps and fed by an analog stereo audio source for an audio setup that’s said to be “optimized for clarity and smoothness from the 20-bit ultra-high performance DTS decoder.”

In its manual mode, the Millennium 2.4.6 takes over when it sees a DTS-coded digital signal and disregards any analog audio that might be at its inputs. It sends decoded DTS 5.1-channel audio from all six outputs. When no digital input is detected, the Model 2.4.6 simply “looks” at the level of the incoming noise and sets its internal, six-channel electronic volume control accordingly. Very cute—but, unfortunately, it only works with DTS sources. For PCM, Dolby Digital, or analog sources, you must get up and switch the 2.4.6’s front-panel toggle to manual to activate its pass-through mode; otherwise you’ll hear nothing.

The rear-panel system-configuration DIP switches control the “downmixing” of surround, center, and LFE channels to the front left/right pair if the corresponding switch is thrown. The decoder’s bass management is fixed: full-range center and surround, with an 80 Hz, 12-dB-per-octave two-way crossover for the LFE channel. If this badly mismatches the setup of your system for other modes, or doesn’t suit your speakers, you’re pretty much out of luck. In addition, the Model 2.4.6 imposes a proprietary reEqualization curve that’s said to be “optimized for clarity and smoothness from the 20-bit ultra-high performance DTS decoder.”

Confusing? Perhaps. But it’s flexible. And there’s more. In its manual mode, the Model 2.4.6’s volume knob controls the DTS playback level (there’s no remote control). However, the 2.4.6 switches over to pass-through mode automatically whenever its DTS decoder “unlocks,” in other words, whenever there’s no DTS input from the player or when the player pauses or stops. When that happens, the 2.4.6 delivers whatever analog source is present at its input, at whatever level the master volume control is set to. This can make for some heart-stopping moments if, say, you’re listening to a DTS-encoded disc at low volume and pause playback to answer the phone, forgetting that you left your system preamp set to tuner with a very high volume setting.

Auto mode works similarly except that the Model 2.4.6’s DTS output level tracks the upstream component’s master volume setting. This is cleverly accomplished: The raw DTS digital noise is fed to the receiver/preamp’s left/right analog inputs. The preamp’s output, which is white noise whose amplitude is determined by its master volume control, is then fed back to the 2.4.6’s analog inputs. So in auto mode, the 2.4.6 simply “looks” at the level of the incoming noise and sets its internal, six-channel electronic volume control accordingly. Very cute—but, unfortunately, it only works with DTS sources. For PCM, Dolby Digital, or analog sources, you must get up and switch the 2.4.6’s front-panel toggle to manual to activate its pass-through mode; otherwise you’ll hear nothing.

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I directed the optical digital output from a DVD/CD player to the Model 2.4.6’s optical port and the coaxial digital output from my laserdisc player to its coaxial port, running the 2.4.6’s digital output back to one of my preamp’s digital inputs. My preamp’s six line-level outputs fed the 2.4.6’s corresponding inputs, while the 2.4.6’s outputs went to the five amp inputs and the subwoofer input. This was all reasonably straightforward, though I confess I had to think about it a bit before coming up with the optimum configuration for my system.

Since it has no on-board test-tone sequencer, the Millennium 2.4.6 requires the use of a DTS test disc, supplied with it, to adjust its front-panel channel-level trimmers; the CD feeds C-weighted pink noise to each of the six channels. I adjusted them using a sound-level meter in the usual way and quickly achieved good system balance (though the 2.4.6 makes no provision for left/right balance of the surround speakers). Channel levels held up well over a wide range of the Millennium’s master volume knob.

There is no doubt that DTS 5.1-channel soundtracks can sound terrific as decoded by the Millennium 2.4.6. DTS and Millennium supplied a bunch of currently available DTS CDs and laserdiscs, so I had plenty of variety to choose from except serious classical recordings. One of the most recent recordings is a DTS reissue of the Eagles’ Hell Freezes Over, which is a state-of-the-art 5.1-channel live pop recording (with some judiciously applied, after-the-fact studio overdubs, I’ll betcha). The DTS disc sounded fabulous — airy, defined, with a combination of solidity and 3-D presence in the bass that is rare in recorded music. Vocal renditions were present and balanced — very real sounding. (To be perfectly frank, anything that can make me want to put on an Eagles disc is probably pretty special.)

The most natural-sounding DTS CD was Remembering Bud Powell by Chick Corea & Friends, a straight-ahead, small-combo be-bop studio session recorded in the 5.1-channel format with fully detailed piano sound, in-the-room horns, and entrancing string bass and trap drums. The system’s ability to “float” nuanced transients, such as delicate high-hat brush strokes or soft pizzicato bass fingerings, was almost uncanny. And that applied to most of the DTS CDs. Another thing: Though you might expect 3-D

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**USER'S REPORT**

Effects to be the big draw. I found DTS music playback's delivery of big, cohesive, stable, and believable "front-stage" sound to be its leading asset.

Among the movie laserdiscs at my disposal, many sequences in the excellently produced Casper and just about every frame of Apollo 13 were standouts. DTS delivered the same advantages I've come to value in Dolby Digital recordings: more natural ambience, cleaner, more "in-the-picture" dialogue, and, of course, stunning impact from the LFE channel and the ability to deliver full-range, discrete-channel surround effects. I heard the same smoothness and cohesive front space in the better movie sequences that I had in the best music recordings.

Of course, the big question on everyone's mind is, does DTS sound better than Dolby Digital? My answer is unequivocal: I have no idea.

First, as near as I can determine, the mix of every DTS production at my disposal was different from the mix of the same recordings in any other format, so the comparison is one of apples with oranges. Second, without direct A/B comparisons of DD and DTS discs mastered from the same six-channel mix, I would be very reluctant to draw any conclusions.

Whatever the case, however, some of the DTS music productions I heard left me asking questions — many of the same sort raised more than twenty years ago by the "quad" experiment. Examples: The Eagles disc frequently mixed hand percussion like claves and congas to one of the rear channels. On the DTS version of the Allman Brothers' Live at the Fillmore East, the perspective was so severely wrap-around that it sounded as if I were onstage, seated on Duane Allman's floor monitor. Even on the Chick Corea & Friends recording, Roy Haynes's drum kit was mixed so that the sound spread all the way from left side to right side, suggesting that his arms are each about 12 feet long. I did not like any of these "tricks," but I recognize the need to temporarily modify individual channel levels — for instance, to cut the subwoofer level for recordings with grossly overweight bass. A final caveat: the 2.4.6 is incompatible with any CD player that modifies the digital data fed to its outputs.

But for early adopters who want to hear what DTS can do firsthand, the Millennium 2.4.6 works very well indeed. While a $699 experiment won't appeal to everyone, the price of admission is significantly lower than for any currently available, multimode solution that includes a DTS option. For now, the Millennium remains the least expensive DTS-only add-on you can buy. If you have serious intentions toward DTS, or if you are seriously into surround sound and digital audio, it warrants a listen.
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large "boundary" surface. When you place a typical speaker — one that has been designed for best response in freestanding placements — in a cabinet, on a crowded bookshelf, or next to a large reflecting object like a big-screen TV, an equipment cabinet, or a wall, the midbass can become noticeably boosted. Therefore, flipping the rear-panel Placement switches of the K.5 and CR.5 from Normal to Boundary lowers output below 400 Hz by about 2 dB to compensate.

My measurements confirmed this operation and the efficacy of the Placement switch in keeping the midbass in line during typical closelength boundary placements. Our normal front-speaker placement, however, is freestanding, with the speakers (including the center) on stands away from the walls. With this placement I was able to obtain a listening-position frequency response that, with one exception, closely matched Snell's published curves.

The best response I was able to obtain from the left front speaker operating in conjunction with the subwoofer was for the most part very smooth but not flat. While the overall response can be stated as a very good ±3 dB from 40 Hz to 20 kHz, much of that deviation is taken up by a gentle slope downward from 1 to 20 kHz. That spread also subserves a distinct dip below the upper-midrange level in the octave around 200 Hz, which in listening tests led to a slight lack of body in the sound quality (the range affected falls around middle-C, an obviously important area). Since this dip was not visible as such in close-miked measurements of the K.5's woofer and port, and since the effect is above the primary operating range of the PS.10 subwoofer, after considerable experimentation with speaker placement I concluded that the anomaly stems from the combination of a tendency toward a dip in the K.5's basic response (there is a broad 2-dB dip between the speaker's output at 50 Hz and 1 kHz visible in Snell's own curves) and an interaction in our listening room between the K.5's height above the floor with a ceiling-to-floor resonance effect.

At still lower frequencies, the PS.10 subwoofer did very well, providing useful output to below 28 Hz. And in a demonstration of the sub's amplifier power and lack of signal limiting, I was able to obtain clean bass at very high volumes with no sense of strain with very high (but not yet deafening) levels of various types of pop music and classical pipe-organ music, far more critical material than most action-movie soundtracks (with which the PS.10 performed thunderously well, too). Although the frequency responses of the CR.5 center speaker and the left/right K.5s were similar, their nonmatched driver complements provided a less close sonic match on panned pink-noise test tones than I have heard from systems employing either identical front speakers or front speakers with identical driver/crossover complements. Still, with both stereo music and surround soundtracks imaging was excellent at all times, and the tonal quality was fairly neutral, a tribute to the basic smoothness of the speakers' responses both on-axis and, especially, off-axis. And if it was a little less sparkling than flatter-measuring speakers we have tested, the system never became shrill at high, life-like playback levels.

The surrounds were more problematical. Being bipolar devices that, in our listening setup, were located only 6 feet to the sides of the listener, they imaged all too well during surround material, including Dolby Digital soundtracks, and especially in ambience-enhanced music playback. It proved impossible even with the best of ambience processing (by Lexicon and Yamaha) to create an even distribution of reverberation around the room. It always "pooled" around the surround speakers, with a gap in reverb between them and the fronts.

Measurements of the band from 500 Hz to 2 kHz (essentially the range of a surround-speaker balancing tone) showed that the level radiated by the SR.5s toward the listener was only 1 dB less than that directed along the walls by the sideways-facing drivers, a very fat dog bone. Contrast this with the performance of a typical good dipole, which can produce 6 to 7 dB more sound directed along the walls than toward the listeners and a much more even surround field in our setup.

Those italics stress that my perception of this behavior was greatly dependent on the speakers' location. In particular, there is no doubt that a more distant placement of the surrounds — which could amount to only a couple more feet — would greatly alleviate the pooling effects. That is impossible in our listening room but may be easily accomplished in yours. The surrounds seemed fine otherwise, with a basic neutrality and cleanliness at high levels, qualities that have always been defining characteristics of Snell speakers.

Snell Acoustics, Dept. SR., 143 Essex St., Haverhill, MA 01832; telephone, 508-373-6114

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Three New Players Out of the Gate

AT LAST, the spectacular new DVD format that was hyped for more than a year before the first players even hit store shelves is off and running. Audio/video enthusiasts are placing DVD bets at inventory-decimating rates, leaving manufacturers and retailers scrambling to meet demand. As of this writing more than 200,000 DVD players have been sold, and it is expected that a few hundred movies will be available on DVD in time for Christmas. Some large retailers have already dropped the price on selected movie discs from $24.95 to $19.95. And while a few short months ago there was only a handful of DVD players to choose from, today upwards of twenty models are available from a dozen or so manufacturers.

To evaluate the latest entries, we chose DVD players from three familiar names in the world of audio and video: JVC, Philips Magnavox, and Samsung. I poked and prodded each player, then patched it into a home-theater system comprising a B&K Components AVP4090 A/V preamp with Dolby Digital (DD) and Dolby Pro Logic decoding, five 150-watt channels of amplification from Parasound, a pair of B&W Model 803 Series 2 front left and right speakers, a B&W HTM center speaker and Model 800 ASW powered subwoofer,
The JVC XV-1000 

The first DVD player on our list comes from JVC, inventor of the VHS format and arguably the patriarch of the whole home-theater movement. The XV-1000 is assembled conventionally enough on a CD-like chassis (in truth, like most first-generation DVD players, the XV-1000 probably is a CD platform), with all pushbutton controls except for a level knob next to the front-panel headphone jack. The front-panel buttons provide only basic transport controls and DVD’s soon-to-be-familiar on-screen-menu navigation controls in the form of a cluster of left, right, up, and down arrow keys. Although these are shaped differently from the transport controls directly above them and have distinguishing graphical arrows, their similarities in location, size, and design were sufficient to occasionally confuse my control-tapping finger — and hitting Chapter Skip when you want Menu can be annoying. I would have put these controls on the opposite side of the faceplate, which is largely empty. Everything else requires the remote, which has a reasonably ergonomic (if distinctly righthandled) layout featuring a radial sweep of main keys arrayed to fall under the thumb — quite nice.

The blue dot-matrix display is clear and readable but rather bright, as is the red stripe directly below it that glows whenever a DVD is loaded (as opposed to a CD). A dimmer would have been nice. The whole player is finished in a sort of dark, chocolate gray except the disc-tray edge, which is silver. It looks very handsome, though I can’t predict how well it might match a stack of conventional black A/V equipment.

Around back there’s a single video output in both composite-video (RCA-jack) and S-video (multipin-DIN) formats, but there are no component-video (color-difference) outputs, which are found on some high-end DVD players. Stereo audio jacks, a removable power cord, and a pair of jacks for JVC’s AC-Compulink “smart remote” system join a single, optical digital audio output to round out the connection facilities. I find the lack of a coaxial digital output vaguely troubling, because at least one Dolby Digital A/V preamp and one DD receiver I can think of accept only a coaxial digital input. That isn’t JVC’s fault, of course, but as Mom was so fond of pointing out, two wrongs do not make a right.

Inside, the XV-1000 is tidily assembled, hardly seeming like a first-generation product. The centralized disc-transport/optical-pickup assembly has a solid-looking housing that even I, fearless investigator of A/V gear, declined to disassemble. Its internal secrets must remain hidden (maybe if I’d had two players . . .). Digital-to-analog (D/A) decoding uses JVC’s 1-bit PEM (pulse-edge-modulation) system and K2-Interface (a jitter-reducing scheme, though the name might better suit a high-altitude helicopter). The XV-1000 is specified as able to decode 20-bit data with a 96-kHz sampling frequency, but no music recordings are available yet in that format, nor is there any firm guarantee that they ever will be.

The JVC XV-1000’s personality combines generally smooth operation with a deep feature set (see the checklist on page 94). Response to transport commands was somewhat brisker than that of the other players reviewed here, and the XV-1000’s slow-play options, ranging from half-speed to one-thirty-second speed by factors of two (plus one-third speed), are the fullest I’ve seen yet. Slow motion was crystal-pure, as it’s been on every DVD player I’ve encountered.

Fast search tended toward still-frame jerkiness — to some degree this is intrinsic to all DVD machines — and was a bit shakier than on the other two players, and rather more aggravating to use. You have to hold down the skip button to invoke scanning, which begins at about 10x normal speed for about 10 seconds and then shifts to about 40x, “snapshot” search. It worked fine in both directions, but I didn’t like having to hold down the key and wait to reach the higher speed. Furthermore, there’s no on-screen indication of the current search speed as on the Samsung and Philips Magnavox players, both of which follow the more common scheme of letting you cycle through the fast-search speed choices, then “sticking” at the high speed until you hit the play button again. While I liked the JVC’s top search speed, significantly faster than the Samsung or Philips Magnavox players. I missed the cueing precision available from a steady 2x, 4x, or 8x speed.

Additional features include resume-play memory (which lets you store a playback point in memory by hitting the Resume button), parental control lockout-by-ratings as found on most DVD decks (of dubious real-world utility because most kids will figure out how to disable it in no time), and multi-aspect-ratio display setup. There’s also a full complement of the standard CD features, including A-B repeat and programming options, most of which can be used with DVDs, too.

JVC’s on-screen menus are useful, generally clear, and attractive. Hit the remote’s Menu button and the picture (with sound) is displayed in a quarter-screen window, while the rest of the screen shows icons for repeat, search, and title functions as well as “buttons” for selecting menu, soundtrack, and subtitle languages, subtitle on/off, and

DIMENSIONS: 17 3/4 x 4 1/2 x 13 inches. WEIGHT: 10 1/2 pounds. PRICE: $900. MANUFACTURER: JVC. Dept. SR, 41 Slater Dr., Elmwood Park, NJ 07407; telephone, 800-252-5722.
camera angle, if these features are implemented on the loaded DVD. The video window is a pretty cool feature that is unique among the three players reviewed here and rare among the other models I've seen.

The XV-1000 also features a two-position Picture control, with one setting producing a very slightly softer image. (This is for those who find DVD's high resolution too hard on the eyes?) The on-screen display also shows current time and chapter locations; the front-panel display shows only elapsed time. The DVD Menu function, accessible via a front-panel button or the remote, automatically pauses the machine and brings up the loaded disc's menu (if it has one) for chapter selection and so forth, displaying a still of the movie's package art in a small window.

The XV-1000's various user-selectable settings, such as English or German for subtitles, are indicated only with cryptic labels like Audio-1 or Subtitle-2. It's up to you to determine if what you're hearing is Dolby Digital or Dolby Surround, or if you're reading Japanese or Korean ideographs. (This is particularly disturbing with those DVDs that default to their stereo soundtracks rather than Dolby Digital 5.1 — whose brilliant idea was this, anyway?)

The remote control is generally good. The main keys fall gracefully to your (right) hand, and differing key sizes, shapes, and colors help you learn the lay of the land. But the use of identical key pairs for previous/next (skip) and stop/play (pause) causes some trouble for us left/right-challenged types. Moreover, the XV-1000 remote's Enter key is outside its crucial cursor-key quartet instead of in the middle, which makes for a distinctive look but, ergonomically speaking, is weird.

Performance-wise I had no complaints. The JVC player worked with no glitches, and its images looked terrific. Visuals were defined and deep — the XV-1000's picture presented excellent blacks and subjectively great detail. Digital artifacts were present on rare occasions — most often in the form of a subtle "tilting-up" of dark frame regions in motion-intensive shots — but they'd only be noticeable if you looked at them rather than simply watching the movie. Dolby Digital playback was simply outstanding as with the other two players, reinforcing my initial impression that DD on DVD seems to sound subtly better than 5.1-channel soundtracks on Dolby Digital laserdiscs.

As a CD player, the XV-1000's performance via its analog audio jacks was very good. Sonically, I would rank it comfortably alongside some very well-regarded $500-range CD players. (JVC's PEM 1-bit D/A-conversion system is one of the best-sounding mass-market consumers available.) Disc handling was fine, though the XV-1000, like all DVD players I've tried so far, is slow to initialize any disc — it has to figure out what flavor of disc has been inserted before it can read it. CD-mode response to transport commands such as track skip and fast search was only slightly slower than on today's better CD players. I'd have no qualms about recommending the XV-1000 as a one-box solution to DVD and CD playback, even in a musically demanding system. In fact, its stereo analog outputs might just sound better than those supplied by the D/A converters found in some Dolby Digital A/V receivers and preamp/processors.

A final note: In addition to DVDs and CDs, the XV-1000 also plays VHS-quality Video CDs (popular in some Asian countries for karaoke programs). JVC does not recommend playback of CD-R (recordable) discs because playback "may damage the contents of the disc." However, the XV-1000 does have a screen-saver, which automatically kicks in after 10 minutes in pause or stop mode, that displays a computer-generated city skyline with the characters D-V-D — and how many other home appliances can do that?

**PHILIPS MAGNAVOX DVD400AT**

The low-profile DVD400AT is a high-value introduction from a manufacturer that needs none. Co-inventor of the CD and creator of the laserdisc format, the CD's antecedent, Philips was also one of the DVD format's core developers.

The DVD400AT wears both Philips and Magnavox logos, neatly culling the company's split brand personality of the past decade or so. Its design team's mantra appears to have been simplicity. The front panel presents only seven slim keys along a matte-silver trim edge, plus a power button, and they control only the most basic transport functions. A blue LED window, centered above the disc drawer, presents disc and time data simply and legibly, though the surface is a bit too reflective — glare can be a problem, depending on the room light and your viewing angle. The exterior is an attractive textured gray, and assembly and finish quality appear to be very good within the player's obviously cost-conscious design.

The theme of simplicity carries around back, where the only connections are stereo analog audio output jacks, composite- and S-video outputs, and a single coaxial digital audio output. Also to be found on the back side is a small slide switch marked AC-3 (Analog Off)/PCM (Analog On). For DVD Dolby Digital playback or CD playback with an outboard D/A converter (or one built into a downstream component), you set the switch to the AC-3 position; for two-channel analog stereo or Dolby Pro Logic playback, you set the switch to the PCM position.

Thus, setup is as easy as it gets with a DVD player. If your receiver or preamp has no digital input, you connect the player's analog outputs for stereo (and analog-domain Dolby Pro Logic) playback. If you have a digital input, use the player's digital output for Dolby Digital or PCM-stereo playback.

The DVD400AT is solidly if cost-effectively assembled. Inside, a dual-laser pickup is clearly visible within the center-mounted disc transport module — and so is a Toshiba label on the power-supply board (the player is derived from the base Toshiba platform). The heart of its internal operation is found entirely on a single compact printed-circuit board enclosed in a noise-shielding "tin can," frustrating chip hunters like me.

Playing DVDs was simple and straightforward. Disc response was generally quick, and fast-scan viewing was notably smooth and controlled. You can scan at 2x or 8x speed in either direction (but not faster), and the selected speed, which stays set until you hit the play button again, is displayed on screen — a nice touch. Slow-motion play cycles through half, one-eighth, and one-sixteenth speed in forward only. The operation of these modes was very stable, as was the still/step motion.

Philips endowed the DVD400AT with a full complement of programming and repeat functions that apply...
to both DVD and CD playback. The player also includes the parental-lock-out function. It cannot play CD-R or Video CD discs, even though it was Philips that developed the latter format (stillborn in the Western world).

Selecting DVD menus was straightforward thanks to the remote control's sensibly positioned Enter key, which is centered in a quartet of cursor buttons. The Menu key, however, is inconveniently located to the northeast. The DVD400AT cannot display video while bringing up the on-screen displays of its native options. The options are mostly presented as plain-vanilla yet quite readable text, including the choice of soundtrack and subtitle languages, subtitles on or off, DVD menu, and screen aspect ratio. There's also an extensive menu for DVD/CD programming.

One DVD400AT feature unique among the three players reviewed here is a simple, direct-access system for selecting titles, chapters, and CD tracks, called up via the remote's "T" key. This can save several steps of DVD-pausing and menu crawling if you already know where you want to go. More valuable still is that when you change the audio mode or subtitle language during play using the remote's Audio or Subtitle keys, text appears momentarily on screen ("English" or "Dolby Digital 5.1," for example) to indicate which option you've selected — or to tell you that the selected option is not available from the loaded disc. This is in contrast to the JVC player, which provides no such feedback.

The remote has an uninspired collection of same-size, same-color keys, and while the primary controls do at least get a different background color, legibility is not great. I eventually learned my way around reasonably well, but a more ergonomically conceived handset would be a real plus.

DVD playback was steady and free of surprises except for one apparently isolated instance of spurious skipping when the player suddenly leaped forward two chapters unbidden. Video quality was superb, as expected, with outstanding definition and freedom from noise. I found that in repeated A/B comparisons, the Philips Magnavox player seemed ever so slightly less prone than either the JVC or Samsung player to digital "tiling" artifacts, a subtle effect that would be invisible to most viewers unless they were told what to look for.

However, the DVD400AT yielded a picture that was noticeably lower in contrast (less black level) than either the JVC or Samsung players, which made for a slightly softer, grayish-looking image — an effect that could be compensated for easily using standard TV-set controls. Yet after considerable time spent fiddling with my screen and A/B-ing the test players using Fly Away Home, a great-looking DVD that I had two copies of, I concluded that the picture from the Philips Magnavox player was just discernibly less detailed and "deep" than the one from the JVC or Samsung players. Of course, this is a purely subjective observation — and the differences were subtle indeed. For perspective, video from the DVD400AT player was superior to that from even the finest laser-disc or S-VHS videotape.

In CD mode the DVD400AT was easy to use and sounded excellent. Disc handling and transport were quick and reliable. Although the sound quality did not quite match the full-resolution standard of today's best $500 CD players, it was certainly competitive with that from players in the $300 to $400 range, which is to say that it delivers very fine sound.

The Philips Magnavox DVD400AT is positioned solidly in the pack of entry-level DVD players currently on store shelves nationwide, which is to say it is priced to sell. And it delivers fine value, along with a welcome dose of simplicity in a field that can be plenty confusing.

**SAMSUNG DVD905**

Samsung's DVD905, the first DVD player from one of the big Korean manufacturers, springs from a source that for more than a decade has been instrumental in driving the value-quotient of home-theater gear with well-designed yet aggressively priced TVs and VCRs. So it's a bit unexpected that Samsung's first foray into DVD is not a price leader at all but a rather high-end player with a built-in Dolby Digital decoder in addition to some unique features.

The player is finished in an attractive gun-metal gray that should complement, though not match, most contemporary gear, and its front panel is very clean. In addition to a centrally located status display and disc drawer, there are only four buttons: a large four-way rocker that handles basic transport functions and three small keys labeled Standby/Power, Open/Close (drawer), and FLT Bright (to dim or turn off the player's display).

Around back, the DVD905 has eight analog audio jacks. The two labeled L1 and R1 are for use with a two-channel or Dolby Pro Logic system, while the remaining six carry Dolby Digital's 5.1 channels. These jacks are designed to feed a Dolby Digital-ready receiver (or preamp/processor) with six-channel discrete inputs. The DVD905 also has a pair of digital outputs, one coaxial and one optical — excellent. That should make it easier to add the player to an existing system since some A/V components have a coaxial or an optical digital input but not both. Why the DVD905 — and other Dolby Digital-equipped DVD players, for that matter — does not offer a digital audio input or two is a mystery to me. It wouldn't
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cost much at the factory, and it would extend the future potential of the machines dramatically, eliminating one objection to their ilk. If your only DD decoder is in the DVD player, what do you do when a second DD source, like HDTV, comes along in a year or two?

On the video side, there are two composite-video jacks, one multipin S-video jack, and four RCA-style jacks labeled R, G, B, and S (for red, green, blue, and sync). These are no component-video connectors, currently found on a few high-end DVD players and TVs.

These computer-standard RGB outputs do not deliver the progressive-scan video a computer monitor would "expect," which is to say that the DVD905 contains no scan-doubling circuitry. So unless you have a scan doubler, or a very high-end front-projection multimedia monitor with one built in — we're talking five figures here — the RGB outputs are irrelevant.

What appears at first glance to be a curious design choice has a very rational explanation. In the Asian market that accounts for a significant portion of Samsung's business, the company expects industrial DVD applications — business presentations, training films, and so on — to be a major part of the total DVD market. Given that a typical corporate playback system includes a scan-doubling, RGB-equipped video projector or computer monitor, the DVD905's RGB outputs begin to make sense.

The Samsung player is also somewhat unconventional under the hood. All the digital doings are on a single circuit board that sits upside down over the transport assembly. Thus, the circuit-board side is only a half-inch away from the inside of the player's top cover — don't stack anything small and heavy, like your Oscar statuettes, on top of this baby! That unusual arrangement prompted me to remove the circuit board (don't try this at home, kids), which revealed a C-Cube Systems DVD chip, a single very large-scale IC that handles the primary MPEG-2 video decoding functions as well as the Dolby Digital audio decoding.

The DVD905 has the usual complement of DVD goodies, including resume-play memory and language, subtitle, and aspect-ratio options as well as an extensive complement of DVD/CD programming options (except A-B repeat). It does not have the brain-dead parental-control function found on most other DVD players. That's no great loss in my book since any kid who's sufficiently bright to surf the Net (to the Baywatch Web site, no doubt) can disable these things in about 30 seconds.

The DVD905 worked quite nicely in my system, delivering very fine performance. Nevertheless, I did note a couple of idiosyncrasies. First, it was very slow at loading a DVD — 22 seconds from a power-off "cold boot." In contrast, the JVC and Philips Magnavox players took 12 and 14 seconds, respectively. Second, the Samsung player skipped forward unexpectedly on two occasions — occurrences rare enough to qualify as an unexplained phenomenon not worth worrying about. Response to skip and pause

<table>
<thead>
<tr>
<th>SAMSUNG DVD905</th>
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<tbody>
<tr>
<td><strong>DIMENSIONS:</strong> 16½ x 4¼ x 13½ inches. <strong>WEIGHT:</strong> 11½ pounds. <strong>PRICE:</strong> $800. <strong>MANUFACTURER:</strong> Samsung, Dept. SR, 105 Challenger Rd., Ridgefield Park, NJ 07660; telephone, 201-229-4000.</td>
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<tr>
<th><strong>SAMSUNG DVD905</strong></th>
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<tr>
<td><strong>DOLBY DIGITAL (AC-3) PERFORMANCE</strong></td>
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<tr>
<td>All data obtained with digital signals from Dolby Labs' test DVD. All surround outputs (including subwoofer) turned on.</td>
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<tr>
<td><strong>FREQUENCY RESPONSE</strong></td>
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<tr>
<td>Front left, right</td>
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<td>Front left, right</td>
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<tr>
<td><strong>NOISE</strong> (A-weighted reference output)</td>
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<td><strong>EXCESS NOISE</strong> (typical results, with signal)</td>
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<tr>
<td>16 bits (EN16)</td>
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<tr>
<td>18 bits (EN18)</td>
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<tr>
<td><strong>DISTORTION</strong> (worst case, 1 kHz)</td>
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<tr>
<td>at 0 dBFs</td>
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<tr>
<td>at -20 dBFs</td>
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<tr>
<td><strong>SUBWOOFER-OUTPUT FREQUENCY RESPONSE</strong></td>
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<tr>
<td>9 dB/octave rolloff above -3 dB point at 185 Hz</td>
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<tr>
<td><strong>MAXIMUM SUBWOOFER OUTPUT</strong></td>
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<tr>
<td><strong>SUBWOOFER DISTORTION AT MAXIMUM OUTPUT</strong></td>
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<tr>
<td><strong>CHANNEL SEPARATION</strong></td>
</tr>
<tr>
<td>* decibels referred to digital full-scale</td>
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The relatively high low-frequency limits of the center and surround frequency responses are a result of the bass-redirection high-pass filtering applied to them (the missing bass shows up in the subwoofer output). The application of high-pass filtering only to the center and surround channels may cause hook-up problems with some six-piece home-theater speaker systems of the kind we typically review. These require high-pass filtering on all channels and at frequencies about an octave lower than provided for with the Samsung player.

To get the bass to come out right you'd either need to use a powered subwoofer connected at line level with the subwoofer's high-pass loop-back outputs in the signal path (a setup requirement not covered in the Samsung manual) or you'd need full-range front left and right speakers and enough amplifier power to drive them to high levels. This player provides an excellent example of why a built-in Dolby Digital decoder is not a desirable feature in a DVD player. Use the Samsung's digital output to feed an amplifier/receiver containing its own Dolby Digital decoder and bass-management circuits, and you'll have an infinitely better chance of getting the bass to come out right.

— David Ranada
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commands was reasonably rapid, and its fast-search speeds at 2x, 4x, and 8x normal were smooth (although things were a bit smoother moving forward than backward). Operation in slow motion, with half-, quarter-, and one-eighth-speed options, was also good.

**DVD picture quality was outstanding, with fine definition and color depth and excellent detail. Overall, the Samsung's picture was about equal to that of the JVC's, though its cast was slightly warmer. Digital video artifacts were about the same in frequency and visibility as from the JVC player, that is, only rarely visible to alert viewers who know what to look for.**

CD performance was about on a par with entry-level CD players. It delivered very fine sound that was not quite in the same league as that of the very best CD players, something the JVC player approached more closely. But — and this is worth noting — in many real-world systems, the "native" sonics of a DVD player would be totally irrelevant because its digital output would feed the digital input of an A/V receiver or preamplifier whose internal digital-to-analog conversion circuits would do the deed in every mode, be it stereo, Dolby Pro Logic, or Dolby Digital.

I auditioned the DVD905's Dolby Digital outputs by wiring them directly into my power amps and powered sub, using their channel-trims for volume adjustment. This worked fine — though it's impractical for daily life! — and sounded very good. But I must point out that such an arrangement means you're stuck with Samsung's resident bass-management settings (an Achilles heel of any DD-equipped DVD player), which are configured for only three "small" speakers (center and surrounds), each with a 160-Hz (!) high-pass filter, and a matching low-pass subwoofer output that includes the redirected bass from the center and surround channels plus any content from Dolby Digital's low-frequency effects (LFE) channel. Between this system-configuring straitjacket and the fact that you won't be able to add additional Dolby Digital sources down the road, chances are that you'll wind up using a downstream component's Dolby Digital decoder sooner or later anyway.

I liked the DVD905's remote quite a bit. It's big, with generously sized and spaced keys, and the oversized set of cursor keys includes a centrally located Enter key. The remote exploits a wide variety of shapes, colors, and tactile feedback from the controls to make it easy to operate — it even uses that cool glow-in-the-dark plastic on its main transport keys. The remote also comes preprogrammed with basic control codes for several dozen popular TV models.

At $750, the Samsung DVD905 offers lots of features per buck, and it was generally very easy to use. More important, its solid audio and outstanding video performance should continue to please long after most...
The Tower Series By Henry Kloss.

Our Tower series of speakers was designed by Audio Hall of Fame member Henry Kloss (founder of AR, KLI-I & Advent). They have the wide range, precise stereo imaging and natural tonal balance of our acclaimed Ensemble series—and add improvements in efficiency, dynamic range and "presence."

The result is somewhat unusual: speakers combining the dynamic presence of high-efficiency studio monitors, and the precise musical accuracy and pinpoint imaging of low-efficiency "reference" speakers.

Tower III by Henry Kloss
Tower III is a two-way design with a wide-dispersion tweeter and an 8" woofer. It combines high sensitivity and outstanding dynamic range with the natural, wide-range sound of a generously-proportioned cabinet. It has been carefully "voiced" by Henry Kloss for superb tonal balance and precise stereo imaging. Tower III is the most affordable high-performance floor-standing speaker we know of. Finished in black ash vinyl. Factory-direct price: $599.99 pr.

Tower II by Henry Kloss
Tower II is a three-way system substantially larger than Tower III. It has two 8" woofers, a 5 1/4" midrange, and a 1" soft-dome tweeter. The large cone area of Tower II's drivers contributes to an effortless sound quality, giving music a strong feeling of "presence." That presence, when combined with Tower's bipolar design, results in sound that is nothing short of incredible. Available in lacquered walnut or black ash veneers, Tower is one of the finest speakers ever offered. Bi-wire/bi-amp capable. Factory-direct price: $1,499.99 pr.

CenterStage by Henry Kloss
CenterStage is a two-way, three-driver center channel speaker that complements our Tower speakers. It has substantial bass reach and the dynamic range to handle the most demanding of soundtracks. Finished in black vinyl. Factory-direct price: $999.99.

"Low-end output was quite good down to 25 Hz... dynamic range, reasonably high sensitivity... articulate... a bit more spacious than my reference speakers. The Tower speakers are a good value for their price." — Audophile Voice

Satisfaction Guaranteed
All three Tower speakers and CenterStage are backed by our 7-Year Parts and labor Warranty and our 30-Day Total Satisfaction Guarantee. So there's virtually no risk.
The results of our comparison did nothing to revise my initial impression of the DVD format: It’s way cooler than even we jaded journalists expected. Video performance from all three decks was not far short of brilliant. Indeed, there was little if anything to distinguish them — and only a comparative frame of reference in which to judge. The main characteristics, then, on which these DVD players will be bought and sold, are ergonomics, features, and value. There were obvious shadings of ease, intuitiveness, and quality, but it’s important to note that these are the most subjective of areas, and my judgments can only provide a second opinion to your own. The JVC led the field in audio performance, and — in my subjective view — video as well. While the Philips had the edge in value, and the Samsung in features, plus the added filip of onboard Dolby Digital. But, overall, I would cheerfully retain any of these three DVD players for daily use.

All three players did very well with most video tests, particularly when it came to color performance. The JVC had the worst (most rolled-off) luminance frequency response we have seen from a DVD player, and it was visibly less sharp with test patterns than the other two. But this effect was only rarely visible with normal movie program material. The picture still appeared sharper than laserdisc. Far more visible was the effect of the 0-IRE setup level used by the JVC and Samsung players. This means that the player puts out a 0-volt video signal when reproducing pure black. Standard studio practice, however, would require a +7.5-IRE setup level (black = 53.5 millivolts) for correct reproduction of movies. With a monitor adjusted for +7.5-IRE black, a player with 0-IRE setup level might produce a temporary feeling of greater contrast until you notice that very dark details are getting pushed into black. This result was very clear with a stairstep grayscale test pattern. The JVC’s +5-IRE maximum-white-level error (its full-white level was 5 IRE too high) can also produce the impression of increased contrast on some monitors: on others it may produce “blooming” of highlights.

The audio results (measured from each player’s analog outputs) are mostly self-explanatory. Note the exceedingly good excess-noise level of the JVC, a player that, on the whole, and in contrast to its video performance, had the best audio behavior of the three. The Samsung’s de-emphasis-off frequency response with CDs shows the results of its low-bass rolloff (below 40 Hz). The de-emphasis-on response shows what happens when a player like the Samsung doesn’t “do” de-emphasis. The result will be a rising high end with a few older CD titles (mostly classical).

—David Ranada

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"...the Millennium delivers bass of earth-shattering potency, along with an incredible sense of space and atmosphere...it sounds simply amazing"

What Hi Fi, August 1997

"How does the world's least expensive DTS decoder sound? In a word, spectacular."

Jeff Cherun, Home Theater, August 1997

“No matter how many films I viewed, DTS did a much better job...Make no mistake: DTS is the best shot we've had yet for adding the hall, the audience, or even the studio."

Ken Kessler, Hi Fi News and Record Review, June 1997

**dts** is the future of quality audio.

With over 10,000 cinemas worldwide now equipped with **dts** 5.1 digital surround sound systems, it is likely that you have already experienced this amazing new audio technology. "Jurassic Park" and "Apollo 13", along with hundreds of new films annually, are released with **dts** 5.1 digital surround soundtracks. Now, you can enjoy movies and music CDs this way in your home, automobile, or office.

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And no company has set the bar higher than Celestion with our new A Series loudspeakers. A fact clearly noticed by D.B. Keele, Jr. in the August issue of *Audio* magazine.

No matter what source materials he selected, from Mozart symphonies to movie soundtracks, Keele was amazed by the A3's performance. He wrote that "their dynamic range and effortlessness border on the best I have ever heard" and that "their imaging and localization could not be faulted."

"WILL THE A3 PLAY LOUD AND CLEAN? IN SPADES! ITS BASS OUTPUT SURPASSES EVEN THAT OF SOME SUBWOOFERS."

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Once you've read the Celestion story and heard the Celestion sound, you'll see why D.B. Keele, Jr. and *Audio* gave us an A. And why it's time for other speaker companies to go back to school.
Still taping after all these years

Don’t think that the VCR represents old, moldy technology. There are plenty of high-tech features in the latest models.

By J. M. Barry

Although the VCR led a video revolution, it seems to be the Rodney Dangerfield of the electronics world, never getting its due respect. Even though it has played a key role in transforming American society and business over the last two decades, the videocassette recorder often gets the most publicity for the least of its accomplishments — the ability to record pratfalls and other "funniest" events. And it’s been dissed relentlessly as that unfathomable appliance with the flashing "12:00." Nevertheless, we’ve purchased more than 175 million VCRs since the Betamax arrived on the scene during President Ford’s administration. And sales this year are on the way to surpassing last year’s record of more than 14 million units.

The latest pretender to the VCR’s position as the dominant home video format is the DVD player. Everywhere today, amid the promotion for DVD, the question inevitably arises, "Does DVD mean that VHS is finished?" In a word, no — at least not any time soon. For one thing, DVD is not a recordable format, not yet anyway, and it probably won’t be for at least a couple of years. The VCR has become an integral part of most American’s lives during the last two decades, now showing movies and recording soap operas in nine out of ten homes. And for all the promises of new digital formats including DVD, the stalwart VHS VCR is bound to be around for a good long time to come.

If you’re in the market for a new VCR and haven’t been in an electronics store recently, you’re in for a pleasant surprise, especially if you’re looking to replace a clunky dinosaur. There’s plenty of good news even if, at first glance, the latest models don’t look all that different from their predecessors.

Look more closely. New VCRs offer more convenience features and superior picture quality, and they can be integrated more easily with other devices than past models. Yet prices continue to fall. The average retail price of VCRs has plummeted to less than $300. Perhaps even more illustrative of how far
Zenith's four-head VR4277HF ($350) features VCR Plus, automatic clock set, an automatic head cleaner, and convenient A/V inputs on the front panel. It will maintain its memory settings for up to 10 minutes in the event of a power failure. A 30-second commercial-bypass feature is available on the remote.

Sony's SLV-960HF ($550) has four heads and can be programmed to record up to eight events a month. It features a high-speed rapid-access tape transport and variable-speed play in both forward and reverse directions. An auto-preset tuner simplifies installation.

The Sharp VC-H976U ($330) has four 19-micron video heads for improved performance in extended-play (EP) mode. It features eight-event/one-year programming and automatic clock setting, and its rewind function operates at 180X normal speed. A universal remote control is included.

The JVC HR-S5300U five-head S-VHS VCR ($800) offers insert editing, random-assemble editing, and audio dubbing. It is equipped with a multibrand TV/cable-box/DSS remote control, and its memory can survive a 60-minute power failure. Its horizontal resolution is rated at 400 lines.

Of course, you can still buy a two-head or four-head mono VCR these days for not much more than $100, but there hardly seems any point in doing so unless you're really strapped for cash or only tape TV shows to watch on a 19-inch tabletop set. With four-head hi-fi VCRs starting at a suggested retail price of $179, for the Fisher FVH-T607, hi-fi models now make up nearly half of all VCR sales. They give the purchaser one of the key components required to assemble a home theater. Just add a surround-sound processor and four or more loudspeakers along with a 27-inch TV, and you'll have a home theater that will deliver the kind of big, enveloping sound that can make movies come to life in your living room.

As part of an effort to simplify VCR operations, JVC — the company that invented the VHS format — has borrowed terminology from the computer realm for its newly expanded Plug & Play system. Plug & Play was first introduced a year ago in some JVC recorders and is now found throughout the company's hi-fi VCR lineup. The HR-A63 ($269), for example, not only sets the clock but automatically scans, stores, and numbers the available channels when the user hooks up the antenna and plugs in the VCR. It also has a multibrand TV/cable-box remote control and multilingual color on-screen menus.
popular feature, an Ilumi-Guide lighted remote control. Remotes that backlight some or all of their buttons are especially useful in dimly lit home theaters or for lights-out, late-night bedroom viewing.

One of the other most popular features added in recent years is Commercial Advance, which gives a VCR the ability to skip past commercials when you play back a newly recorded television program. That feature has been refined, too. Four new RCA hi-fi models include "enhanced" Commercial Advance, which allows you to skip commercials automatically on tapes you have previously recorded. Some of us enjoy watching the old commercials along with the old programs, but if you don't, you can just pop your old M*A*S*H or Hill Street Blues tapes into the new VCR, select Commercial Advance from the on-screen menu and play the tape. The VCR will automatically mark commercials so that they'll be skipped when the tape is replayed. The viewer will see a few seconds of blue screen instead of a couple of minutes of advertising.

RCA and Hitachi have also added a variation on that theme for those of us who rent a lot of videos but are growing weary of the many previews and advertisements that precede the features. Movie Advance, as RCA calls it, or Movie Pass, as Hitachi dubs it, automatically takes you to the opening of the film, skipping over the promotional shorts. When you insert a prerecorded cassette and press a button on the remote, the VCR searches for the end of the previews (actually, it searches for more than 3 minutes of uninterrupted video, then winds back to its beginning), cues up the beginning of the movie, and activates an on-screen display letting you know the feature is about to begin. RCA offers Movie Advance and Commercial Advance on three stereo hi-fi models, starting with the VR643HF ($349), and on a four-head mono model.

The VCR's growth parallels the proliferation of cable-TV programming. For years, however, getting the two entertainment-delivery systems to interact smoothly too often presented a hair-raising—or hair-pulling—puzzle. But recent developments like VCR Plus, which was created to simplify basic VCR programming, make the interaction with cable and other set-top boxes a good deal easier. The vast majority of hi-fi VCRs now have VCR Plus Gold with cable-box and DSS-receiver control. An S-VHS Quasi-Play feature allows you to watch S-VHS tapes, though not at S-VHS resolution. It has a rapid-start transport with a 250X fast-wind speed and a 2X mode with sound.

Panasonic's four-head PV-4662 ($599) includes Spatializer audio processing to create a surround-sound effect from only two speakers. It also offers VCR Plus with cable-box control, automatic clock setting, and front-panel A/V inputs. Digital Auto Picture control is said to improve the picture quality from worn tapes.

Samsung's four-head VR8707 ($229) has a base-level feature set including a 181-channel VHF/UHF/CATV tuner. It features a 2-minute tape-rewind time, records at either SP or SLP speed, and can play back tapes recorded at those speeds as well as those recorded in LP mode.

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Toshiba's four-head M-683 ($300) features an MTS/SAP decoder with dbx noise reduction, a center-load mechanism, one-touch recording, and 150X high-speed fast-forward and rewind. It also has VCR Plus with cable-box control. Multilingual on-screen prompts simplify programming.

Plus with cable-box control, the advanced version of the programming system that can turn on your cable box, set it to the right channel, and make sure that the VCR's input is set properly when you enter the VCR Plus code numbers printed in newspaper and magazine TV listings.

Many of the newer models add Digital Satellite System (DSS) controls to the system. And Gemstar, the company that developed VCR Plus, has now added VCR Plus Gold, which automatically maps and labels your channels and sets the clock when you enter your zip code into the system. This enhanced VCR Plus system is included in the Mitsubishi HS-U580 ($499), which also has a lot of other picture-quality and convenience features.

StarSight, an on-screen guide that greatly simplifies recording and channel surfing, is available on half a dozen brands of hi-fi VCRs, including the Samsung VR-8907 ($399) and the Sony SLV-980 HF ($499). StarSight, now also owned by Gemstar, displays seven days of up-to-date program schedules and allows one-touch program selection for a monthly fee of less than $5. It also enables the user to sort programs by type (movies, kids, or sports, for example) for quick access. The Sony SLV-980 HF is part of its new LS series, which features Smart Set-Up, an on-screen menu system that guides users through the setup procedure to select a language, set DSS or cable-box controls and tuner presets, and automatically enter VCR Plus channels for programming and recall.

VCRs are also participating in one of the other continuing trends in consumer electronics, the combination of several components into one chassis. Small-screen TV/VCR combinations have been a staple in conference rooms for a decade or more, but now they've become a real option for those of us looking for simplicity and space savings at home. Toshiba, for instance, offers 27-inch (CV27G68) and 32-inch (CV32G68) TVs with premium picture tubes, built-in stereo hi-fi VCRs, two-tuner PIP (picture-in-a-picture), and A/V inputs at $1,049 and $1,699, respectively.

But now VCRs are becoming incorporated into other components, too. Sony and Aiwa each offer a combination VCR and A/V receiver. At $699, Sony's Power Cinema SLV-AV100 mates a four-head stereo hi-fi VCR with VCR Plus programming and an A/V receiver that delivers 75 watts per channel to the front left and right speakers and 50 watts each to the surround and center speakers.

Meanwhile, JVC combines a new D-VHS VCR with an Echostar DISH Network satellite receiver in the HM-DSR100D ($999) to facilitate taping the high-quality digital pictures delivered by satellite (see "Digital Is Here" below).

Recording the best picture with a nondigital recorder means Super VHS (S-VHS). The category starts at around $500, but most buyers opt for lots of additional features for high-quality

Digital Is Here. Is That Clear?

MANY PEOPLE HAVE assumed that the coming of the digital era would eliminate the format wars and overcome the compatibility challenges that have dogged home video since the early days of the Beta vs. VHS slugfest. But the road to the digital future, at least in digital videotape, has proven far from smooth to date, leaving many potential buyers and even some industry mavens scratching their heads.

The new DV (digital video-cassette) format, introduced last year in camcorders starting at about $2,000 from a handful of manufacturers, including Sony, JVC, and Sharp, uses a tiny 30- or 60-minute cassette that looks almost identical to a digital audio tape (DAT). To date only Sony has brought out a home VCR in this format, the DHR-1000 ($4,199). This machine will interface smoothly with computers and DV camcorders with virtually no loss of picture quality when dubbing or editing sessions take place in the digital domain.

What's causing confusion, however, is another format, D-VHS, especially in recent months because of the introduction of combination D-VHS/DBS (direct broadcast satellite) components. D-VHS — in this case the "D" stands for "data," not "digital" — is a JVC-developed standard that modifies an S-VHS tape to record and play a bitstream from a digital source. Hitachi's new VTDX-815A ($599) is designed to record from a direct digital connection to a DSS receiver equipped with a compatible output port. When played back, the bitstream is fed to the receiver, where it is decoded just as the DBS broadcast would have been. The D-VHS format can deliver more than 500 lines of resolu-
editing and playback. JVC's top-of-the-line S-VHS HR-S9400 ($1,199) includes digital circuitry to provide truer colors, reduce jitter, and generally improve audio and video signals. It also has a multibridge TV/cable/DSS remote control with jog-shuttle dial and a J-terminal for integration with a Windows PC to create a computer-controlled multimedia system.

Meanwhile, standard VHS machines have been upgrading picture quality steadily over the past several years. Center-mounted chassis with fewer moving parts can be found across most lines, while advances in video heads have become commonplace in hi-fi VCRs from just about all manufacturers. Panasonic uses special metal heads with a laminated design that is said to reduce tape-contact noise. In the PV-7664 ($399) the so-called DynAmorphous heads work with noise-reduction circuits to achieve a 40-percent increase in video signal-to-noise ratio. The same model also features a Video Head Sensor System that detects when heads are clogged by oxide debris from worn tapes, a common occurrence for those of us who rent a lot of videos.

A few years back Sharp pioneered 19-micron high-precision video heads, which are about 25 percent narrower than standard video heads and thus minimize crosstalk and noise during extended-play mode. This feature, now available on all Sharp VCRs as well as those from a half dozen other companies, is particularly valuable if you tape a lot of long programs in EP mode or simply want to maximize your blank-tape investment and get more programs onto a limited number of tapes.

Toshiba uses two additional 19-micron heads in conjunction with a "flying pre-amp" to deliver cleaner pictures in standard and EP modes in its six-head, hi-fi VCRs, including the M752 ($399) and the M782 ($599). The latter adds digital noise-reduction and color-enhancement circuits to improve sharpness and reduce color bleed and overlap.

If you're seeking even more convenience and flexibility in your next video recorder, or if dubbing tapes is a frequent activity, you can choose among dual-deck VCRs like those offered by Go-Video at prices ranging from about $400 to $800. The hottest items from Go-Video are its stacked dual-deck VCRs, introduced last year, that fit the same width as other A/V equipment in a rack. The GV-6060 ($699) is a stacked four-head model that records and plays back in stereo hi-fi on both decks.

Thanks to concern about the potential for widespread computer snafus when calendars turn to the year 2000, questions have been raised about the programmability of VCRs as we approach the millennium. But VCR makers say, "Not to worry." In the past few years, they've updated their timers to use four digits rather than two to represent the year, so the machines will move ahead from 1999 to 2000 without a hitch. Some manufacturers reprogrammed VCR clocks as early as 1992. And even if your VCR was made earlier, you need not fret because older models have only 30-day timers, rendering them oblivious to a change of year.

Finally, there's good news and bad news for die-hard Betaphiles. Sony continues to make Beta VCRs—that's the good news. But it's going to be harder than ever to find one because the lineup has dwindled to a single model, the SL-HF2000 ($899), a SuperBeta Hi-fi VCR with on-screen programming, 1-hour timer backup, and a Control-S input for use with Sony editing consoles.

So if your video recorder is starting to show its age, scope out the latest VCRs. Although they may no longer offer the most glamorous technology on the block, trusty analog VCRs have proven themselves to be remarkably adaptable and resilient. Without question, a new model purchased today will provide viewing pleasure well into the coming digital video era.

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The JVC HM-DSR100DU D-VHS digital video recorder ($999) is a full-function VHS deck with the added ability to record a digital MPEG-2 bitstream from a built-in EchoStar DISH Network satellite-TV receiver. The deck is backward-compatible with analog VHS.

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JVC

STEREO REVIEW NOVEMBER 1997 103
HIGH-OCTANE car stereo systems are just the thing if your passion for music drives you to the limit. They keep the music firing on all cylinders, and judging by the number of factory systems that are available in the new 1998 vehicles, you can fill up with premium-grade sound at almost any new-car dealer.

If you're shopping for a new car, you'll find CD players or changers offered as standard equipment in dozens of car models, some of which include a CD changer conveniently located in the passenger compartment instead of in the trunk. Automakers are also equipping more vehicles than ever before with sophisticated systems that compensate for wind and road noise by automatically boosting volume as speed increases.

In its 1998 lineup, BMW takes the concept of speed-compensated volume control to the next level in its 318i and 328i convertibles, which offer optional systems that...
The ten-speaker Monsoon system, which includes a CD player, a seven-band equalizer, and two 6-inch woofers, is available as a factory option in the Pontiac Firebird Trans Am.

According to speed, in a further refinement, Bose systems offered in two versions of the Cadillac Seville automatically adjust volume and equalization according to noise levels monitored by a passenger-compartment microphone.

Surround-sound fans may want to check out two Volvo models that offer Dolby Pro Logic surround decoding as an option, and convenience-minded motorists will be interested in knowing that Radio Data System (RDS) radios are now available as standard equipment or options in more than two dozen car models. An RDS-equipped tuner displays the call letters and program formats of FM stations broadcasting an inaudible RDS data signal. It can also search for stations by music format and automatically interrupt cassette or CD playback when an RDS station broadcasts traffic or emergency reports. About 700 of the nation's 7,300 FM stations are currently broadcasting RDS signals. These aren't the only audio advances in store for new-car shoppers this fall. If music is important to you, keep reading to find out what the auto-makers have in store for music-minded motorists. Power ratings are continuous and for all channels combined unless otherwise noted. Prices are given if they were available.

AUDI

The A4 Avant sport wagon debuts with a standard eight-speaker, 120-watt (peak) Concert system with a cassette receiver that includes a CD changer-controller, an RDS tuner, and Graduated Audio Level Adjustment (GALA), which raises volume as speed increases. RDS and GALA continue as standard features in all other Audis for the second consecutive year. A six-disc cargo-area changer is available as a dealer-installed option with the Concert system and with an optional 150-watt, seven-speaker Bose system.

As it was last year, a Bose system is optional in all vehicles except the flagship A8 4.2 sedan, where Bose is standard. In the A4 sedans, the Bose options have been upgraded to 150 watts from 100 watts. In another change, the A6 luxury touring sedan becomes Audi's first vehicle equipped with a subwoofer system as standard equipment. Two 4½-inch drivers share a trunk-mounted enclosure in the A6's standard 140-watt (peak) ten-speaker Concert system.

BMW

A biamplified Harman Kardon system is available in the 318i and 328i convertibles for the first time. The eleven-speaker 28-watt x 8 factory-installed option boasts a speed-compensated volume control, twenty bands of parametric equalization to tailor response to the car's interior, and dynamic equalization that changes according to vehicle speed to compensate for the bass-masking effects of road and tire noise. System equalization also changes automatically, primarily in the bass and mid-bass regions, when the top goes up. A six-disc trunk-mounted CD changer is dealer-installed but included as part of the system's estimated price of about $1,000. A similar Harman Kardon system with speed-compensated volume and equalization was introduced last year as a standard feature in the Z3 28i two-seat roadster and as a factory option in the Z3 318i roadster, and it carries over into the 1998 models.

BUICK

With the introduction of the Park Avenue's first-ever single-chassis CD/cassette player option, dual-format head units are available as factory options in all Buick models except the Riviera, where it's still standard. The head units control optional six- and twelve-disc trunk-mounted CD changers that can be installed by the dealer.

Steering-wheel-mounted audio con-
Ford is offering its first RDS-capable head units, all changer-controlling cassette decks, in nine vehicles, including both the Mercury Lincoln Continental (below) and Town Car. In the Lincolns, the systems also incorporate digital signal processing.

Controls continue as an option on all Buicks except the Park Avenue Ultra, where they're standard.

**CADILLAC**

Big changes are in store for Cadillac connoisseurs. Weather-band reception and RDS debut in eight Cadillac models. In seven models they're part of either the factory-installed Active Audio System or the Bose system options. In the Seville STS, they're part of the standard Bose system.

Cadillac's first dual-format CD/cassette players are standard on all but the Catera, DeVille, and Eldorado, which include cassette radios as standard equipment.

A boastful Bose is talking up its new 375-watt 4.0 system, which is standard in the Seville STS and a factory option in the Seville SLS. Bose contends that the 4.0 is its best factory system, delivering deeper bass and greater accuracy at high volumes. The driver complement includes a trio of dash-mounted 2-inch drivers firing up at the windshield, an 8-inch woofer in each front door, a 6½-inch wide-range driver in each rear door, and a 12-inch package-shelf woofer powered by a dedicated 100-watt amp.

The 4.0 system also distinguishes itself as Bose's first system to adjust volume and equalization automatically according to the ambient-noise conditions as monitored continuously by a microphone installed in the passenger compartment. Bose uses proprietary algorithms to sample the noise digitally, separate it from the music, and boost or cut frequencies as needed throughout the audible range. The company reasons that this technique yields superior results compared with systems that boost volume as speed increases because wind and road noise vary not only according to speed but also road surfaces and the proximity of other noise generators such as passing tractor trailers.

Seville owners also get the opportunity to buy Cadillac's first passenger-compartment CD changer, a factory- or dealer-installed six-disc option to be mounted in the console storage compartment between the front seats. It's controlled from the Seville's standard CD/cassette head unit.

All Cadillac heads control changers, which in models other than the Seville are twelve-disc trunk-mounted dealer-installed options. In 1998, Cadillac simplified its radio antitheft feature. As in previous models, the radio locks up when power is cut, but to reactivate the radio, users need not enter a numeric code. Instead, because the feature is tied to an individual car's VIN (vehicle identification number), the radio reactivates automatically only when it's reconnected to the car into which it was originally installed — but it won't operate if connected to any other vehicle, even another 1998 Cadillac. The radio can also be traced to its owner if stolen because it stores the VIN in memory.

**CHEVROLET**

"11le GM division continues to offer factory-installed CD receiver options in all of its vehicles, but for the first time Chevy offers a companion slave cassette deck. A $200 factory-installed option in the Blazer LS and LT and a $402 option in the compact S-10 pickup, the cassette deck drops into the floor console centered below the dash.

Speed-compensated volume control is available in the S-10 and Blazers for the first time when the vehicles are equipped with the CD receivers or with select factory-installed cassette options. The feature is still available in the Malibu LS's standard system and in select options packages for the Lumina and Malibu sedans and the Monte Carlo.

**CHRYSLER/DODGE/PLYMOUTH**

More CD choices are in store this year from the three sister brands. On all trim levels of the Chrysler Concorde and Dodge Intrepid, for example, in-dash CD receivers are factory options in 1998 for the first time, in some cases as part of standard or optional custom-equalized Infinity 240-watt (peak) systems. In both cars, dual-format CD/cassette players and cassette decks are still available in select stan-
standard and optional systems. An option-
al dealer-installed trunk-mounted six-
disc changer can be controlled from
the CD receivers and select cassette
decks, but not from the dual-format
CD/cassette head units.
A new Jeep Grand Cherokee model,
the top-end 5.9 Limited, debuts in
1998 with a standard Infinity Gold
system built around a dual-format
head unit that lacks CD changer con-
trols. Highlights include the 180-watt
(peak) amplifier, custom equalization,
ten drivers, and steering-wheel-mount-
ed audio controls, which are optional
in other Grand Cherokee models.
Speakers include two instrument-panel
tweeters, two woofers in the front
doors, two woofers in the rear doors,
and two tweeters and two midrange
drivers in the cargo-area headliner.
CD/cassette head units are available
as factory options or standard equip-
ment in all models from all three com-
pany divisions except the Plymouth
Neon and two-seat Prowler convert-
able and the Chrysler Cirrus, Dodge
Stratus, and Plymouth Breeze comp-
acts. None of the dual-format heads
control a CD changer, and a dealer-in-
stalled changer with RF modulator
will no longer be offered.
In the Cirrus, Stratus, and Breeze,
and the Chrysler Sebring convertible,
a six-disc console-mounted CD chang-
er has been carried over in conjunction
with various changer-controlling cas-
sette options. The changer, installed at
the factory or by the dealer, sits below
other instrument-panel controls.
At Plymouth, the retro-style Prowler
roadster debuts with a standard high-
performance Infinity sound system.
The two-seat convertible’s
seven-speaker system delivers
320 watts (peak) and fea-
tures fixed bass and mid-
bass equalization tailored for
top-down, 60-mph driving.
Remote audio controls on
the back side of the steering-
wheel spokes let you change
stations, CD tracks, and vol-
ume levels. The Prowler’s
cassette head unit controls a
six-disc changer, which is
mounted behind the pas-
enger seat below the ported,
bandpass enclosure housing
a 6 1/2-inch dual-voice-coil
woofer.

FORD/LINCOLN/
MERCURY
Speed-compensated volume
controls and RDS turn up for
the first time in select mod-
els, but those aren’t the only
significant changes in store
for the new model year.
For the first time, a slave
CD player and companion cassette
deck are standard in all Mustangs,
whose slave CD players were previ-
ously optional. Also, premium Mach
sound systems will be available as a
$650 to $800 option for the first time
in the Ford Explorer and as a $475 op-
tion in the Mercury Mountaineer sport
utility vehicles (SUVs), joining the
Ford Mustang and Taurus and the
Mercury Sable and Expedition.
The 145-watt, seven-speaker Mach
systems in the Explorer and Mount-
aineer boast a dual-format CD/cas-
sette player and an 8-inch subwoofer
behind a trim panel in the right rear
cargo area. Same as last year, an op-
tional $370 factory/dealer-installed
six-disc CD changer controlled from
the head unit goes under the center-
console armrest.

For the first time, Chevy is offering a slave cassette
deck that can drop into the floor console centered
below the vehicle’s dash as a $200 factory-in-
stalled option in the Blazer LS (above) and LT.
The nine models are the Lincoln Continental Town Car, Mercury Villager, and Ford's Crown Victoria, Econoline van, Grand Marquis and Mountaineer, and Continental and Town Car. Mercury's part of standard or optional systems. The automaker's first RDS head unit is built into the center console. With the Mach introductions, the Explorer and Mountaineer become the first vehicles in the automaker's three divisions to offer a "dual-playback" feature that lets back-seat occupants listen to one source through headphones while everyone else listens to another source through the speakers. A control panel on the back of the center console features two headphone jacks and remote audio controls, including volume, source selection, tuning, tape direction, and CD track selection. In another change, Ford is introducing its first speed-compensated volume controls in the new Mach systems. The dual-format head unit available in the Ford Ranger pickup as a $370 factory option, and the new CD changer-controlling cassette players offered as factory or dealer options in the Lincoln Continental and the Lincoln Town Car.

The automaker's first RDS head units, all changer-controlling cassettes, will be available in nine vehicles, although it hadn't been determined at press time whether the radio would be part of standard or optional systems. The nine models are the Lincoln Continental and Town Car, Mercury's Grand Marquis and Mountaineer, and Ford's Crown Victoria, Econoline van, Club wagon, Explorer, and Ranger pickup. In the Continental and Town Car, the RDS radios will also incorporate digital signal processing, previously used by the company to replicate the acoustics of different listening venues but now expanded to optimize imaging through digital equalization and the time alignment of the left and right speakers. Imaging can be optimized for the driver, all occupants, or all rear-seat occupants.

In other changes, Ford adds steering-wheel controls to the Explorer for the first time, but it hadn't been decided at press time whether they would be standard or optional. In the new Lincoln Navigator, they're standard. In 1997, steering-wheel controls were optional in the Lincoln Continental and standard in the Mercury Villager minivan and Lincoln Town Car Signature series. They're still available in those vehicles in 1998, but it was still undetermined at press time whether they were to be standard or optional.

Also for the first time, the Navigator joins six other vehicles in offering passenger-compartment six-disc CD changers in the center console, either between the front seats or near the instrument panel. The other vehicles are the Ford Explorer and Expedition SUVs, the Mercury Mountaineer SUV, the Lincoln Continental, and the Mercury Villager and Ford Windstar vans. In 1997, the changers were options, but it wasn't certain whether the changers would be standard or optional in 1998.

GMC
Bose's first-ever GMC systems will be standard in the full-size Denali and compact Envoy sport utility vehicles due later in the 1998 model year. The custom-equalized system features a cassette head unit in the dash that controls a six-disc CD changer in the console between the front seats. The 190-watt Denali system includes a 4 x 6-inch woofer in a ½-cubic-foot enclosure that's also built into the center console. The Envoy system is rated at 260 watts.

HONDA/ACURA
Steering-wheel-mounted audio controls are available for the first time in the Acura 3.5RL and 3.0CL, where they're standard. Same as last year, a CD receiver and six speakers are also standard in these vehicles, and an in-dash slave cassette and a six-disc trunk CD changer are still dealer options. Acura's 3.5RL joins the 3.5RL Premium in offering a standard eight-speaker 200-watt Bose system with a CD changer-controlling cassette player. In the RL, a six-disc changer can be installed in the trunk or center armrest by a dealer. In the RL Premium, the changer is standard in the trunk but a dealer can reinstall it in the console. Both cars continue to offer standard steering-wheel-mounted audio controls.

In the Honda division, the CRV EX sport utility vehicle gets its first standard-equipment CD receiver, joining the Prelude coupe and the Accord EX four- and six-cylinder sedans.

JAGUAR
Standard steering-wheel-mounted audio controls, available since 1997 on the XK8 sports car, will now be avail-

The standard head unit in the Volvo V70 R combines a tuner, a cassette deck, and a three-disc CD changer in a single in-dash chassis, with Dolby Pro Logic surround decoding a $595 factory option.
Built to rock.
The culmination of the latest advances in high technology, revolutionary design, the finest materials, perfect balance, and a dedication to the most refined sense of taste.

*Price, $1,799*

Built to Rock.
The culmination of the latest advances in high technology, revolutionary design, the finest materials, perfect balance, and a dedication to the most refined sense of sound. The Optimus family of speakers with Linaeum-designed tweeters produces "wide-angle" sound that envelops your listening area like never before, with remarkable presence you'd expect only from much higher priced speakers. The critics love them. Find out why at RadioShack. For our store near you, call 1-800-THE-SHACK®.

*Prices starting at $130*
A factory option in the new Mercedes ML320 sport utility vehicle is a seven-driver, 150-watt Bose system with a cassette deck that controls a six-disc CD changer mounted in the cargo area.

available for the first time on 626 series models, as standard equipment in the ES and as factory options on the LX and RX V6, all with CD receivers mounted in the dash.

**MERCEDES**

A bi-amplified 150-watt Bose system is a factory option in the ML320, the German automaker's first sport utility vehicle in the U.S. market. For less than $1,200, the seven-speaker system includes a sub-woofer amplifier that delivers 50 watts to a 5 1/2-inch, dual-voice-coil woofer mounted in an enclosure under the driver's seat. There are 6 1/2-inch coxials in the front doors and a wide-range 5 1/2-inch speaker in each rear door. The system's program sources are a changer-controlling cassette and a cargo-area six-disc CD changer. Like all previous Mercedes systems, the ML320 features speed-compensated volume control. Bose systems continue to be standard or optional in all other Mercedes vehicles.

**MITSUBISHI**

The Mirage LS coupe, but not the sedan, gets its first standard-equipment CD receiver, joining the entry-level Montero Sport ES SUV. The head unit doesn't control optional changers or cassette players.

Dual-format CD/cassette players are carried over in the Eclipse GS-T and GSX and the Diamante LS as part of standard Infinity sound systems. The Eclipse head units incorporate CD changer controls.

**NISSAN/INFINITI**

More Nissans will have in-dash CD as standard equipment in the 1998 model year. CD receivers are now standard in the 200SX SE and SE-R sports cars, and a CD/cassette player is standard in the Sentra GLE sedan, all Altima models but the SE, the Pathfinder GLE LE, and SE SUVs, the Frontier SE King Cab truck and SE King Cab 4WD, and the Maxima SE and GLE. In all but the 200SX SE and the two Frontiers, an optional $669 dealer- or port-installed six-disc CD changer controlled by the head unit is available.

The standard CD receivers and dual-format heads replace standard cassette units, which in most cases controlled an optional dealer- or port-installed CD changer, including a three-disc in-dash changer that's still available in some Nissans. Bose systems continue as standard equipment in all Infiniti models.
Oldsmobiles. They're standard in the Aurora, LSS, and Regency and optional in the rest.

**PONTIAC**
Delco's EyeCue "head-up" display, which projects vehicle and audio-system information onto the windshield in front of the driver, is standard rather than optional in the 1998 Bonneville SSE. It continues as an option on the Grand Prix. EyeCue displays radio-frequency and CD track information along with the vehicle speed and warning indicators, including a low-fuel icon.

The ten-speaker Monsoon system continues as a $430 factory option only in the Firebird. The eight-channel system features active crossovers and two 6-inch dual-voice-coil subwoofers. Amplifier power output was not available.

Steering-wheel-mounted audio controls remain options on all Pontiacs but the Bonneville SSE, where they're standard.

**SATURN**
The sound systems are as practical and basic as the car itself. Factory-installed options include a cassette radio and a changer-controlling cassette unit with an equalizer and four 6-inch speakers. A CD receiver returns as a factory option after a one-year absence, and a twelve-disc trunk-mounted CD changer is available as a dealer-installed option. Option prices range from $290 to $540 for the Saturn SL and $260 to $510 for all other models.

**SUZUKI**
With the addition of a dealer-installed CD changer option under the passenger seat in the Swift hatchback, six-disc CD changers are available in all Suzukis for the first time. In-dash CD players have been dropped from all models.

**TOYOTA/LEXUS**
The big news comes from Toyota's Lexus division. To the standard Pioneer systems in the LS and GS V-8, Lexus adds its first-ever automatic volume control, which uses digital signal processing to change volume automatically in concert with changes in interior noise levels as measured by a microphone mounted in the headliner. The feature is defeatable.

The cassette-based system is offered with a factory-installed glovebox-mounted CD changer option, which is available in the GS for the first time. The Pioneer system is also standard in the Lexus ES but without automatic volume control.

Lexus will extend its brand-name collaboration with Nakamichi to the ES series for the first time with a 215-watt (peak) biamplified system featuring an 8-inch rear-deck subwoofer, a pair of 1-inch dome tweeters near the side-view mirrors, and four 6 1/2-inch drivers, two up front and two in the rear deck. The factory option features an in-dash cassette player, a glovebox-mounted six-disc CD changer, and fixed parametric equalization to tune the system's response to the car's interior. A 280-watt (peak) Lexus/Nakamichi option is already available in the LS and GS.

In Toyota vehicles, in-dash three-disc CD changers continue as options in almost all models.

**VOLVO**
In the C70 coupe and V70 R all-wheel-drive station wagon, the standard head unit is the automaker's first to combine a tuner, a three-disc CD changer, and a cassette player in a single in-dash chassis. The Alpine-made head unit is also Volvo's first U.S. radio with RDS, and it controls an optional dealer-installed six-disc CD changer ($690) in the C70 trunk and V70 R cargo area.

The big news is that Dolby Pro Logic surround decoding is available as a factory-installed option in both vehicles - a first for automakers. The S595 Pro Logic option adds the decoder, which mounts to the back of the head unit, and a pair of center-channel drivers in the dash. More than 700 Dolby Surround-encoded CDs, mostly classical, are now available from a variety of labels, including Delos, BMG, and EMI.

The head unit also delivers speed-compensated volume control and diversity tuning, which Volvo is providing for the first time in every vehicle but the base SV70.

Whether you've got your heart set on a Jaguar XK8 or a Chevy Malibu, both U.S. and foreign automakers are offering more fine-sounding and user-friendly audio options to choose from than ever before. So start thinking about whether you prefer a CD player in the dash or a multidisc changer in the trunk or console. Just don't forget to bring a few of your favorite CDs along with you. If you pay your cards right, you may even be able to get the salesman to throw in an audio option or two to seal the deal.

**STEREO REVIEW NOVEMBER 1997**
NEW CHAPTERS FROM THE COMPANY THAT WROTE THE BOOK ON SUBWOOFERS

THE IMPORTANCE OF A SUBWOOFER IN THE NEW DOLBY DIGITAL AC-3 SYSTEM

The future of movie sound in the home—and many believe music as well—is Dolby Digital AC-3. Unlike Dolby Pro Logic, Dolby Digital features 5 full bandwidth channels, plus a dedicated low frequency effects channel that delivers additional bass to the subwoofer. Which is why it almost seems like Dolby engineers had Velodyne in mind when they created Dolby Digital.

In addition to performance that Home Theater magazine called “breathtaking,” all of our subs incorporate a “Subwoofer Direct” feature which allows you to by-pass the internal crossover for direct connection to this low frequency effects channel in Dolby Digital decoders and receivers. So you get bigger, louder and more physical bass—the Dolby Digital difference you can hear and feel.

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HDTV, DSS, DTS, AC-3, DVD, DVD-ROM. Terms from the brave new world of home entertainment, yet ones that can easily confuse even the most savvy consumer. So it’s good to know that, no matter what new technologies come along, a Velodyne subwoofer will never be obsolete.

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EVER SINCE MY BABY GIRL arrived two years ago, she's taken to my electronic toys like a duck to water. At first when she started crawling too close to my stuff, I'd chase after her, wailing "No-o-o, don't touch that!" Finally I got smart. My goal wasn't just to protect my toys from her but also to protect her from my toys.

You don't have to be a new parent to kidproof your equipment. Visits from grandkids, nephews, nieces, and friends' children will be a lot more relaxing if your audio/video gear is secure.

The most effective way to protect kids and electronic toys from each other is to get your components out of reach — and if possible out of sight. Your television and speakers will have to stay in your viewing/listening room, of course, but you may be able to house other components, such as amplifiers and CD players, in a enclosed space like a cabinet or closet. That is likely to involve running cables through walls, ceilings, or ductwork, and unless you're handy, you may want to enlist the aid of a dealer who specializes in custom installation.

So that you can control these components from your couch, you'll probably want to add an infrared (IR) repeating system, which consists of an IR receiver in the listening room wired to an IR emitter in the component closet. There are IR receivers that fit into wall-mounted junction boxes and others that can be flush-mounted onto bookshelves and cabinets. Infrared repeaters are available from Niles Audio (800-289-4434), Xantech (318-362-0353), and others; expect to pay between $100 and $200.

Recoton (800-732-6866) has a radio-frequency (RF) universal remote control, whose signals pass through walls and
The company also offers an RF transmission system that lets you send audio and video signals plus remote commands over the airwaves ($140). In my experience, IR remote extenders work fine. The audio/video RF systems do add noise, but in most situations they perform acceptably for noncritical listening. For your primary system, you'll want to stick with hardwired connections.

Elcom Technologies (610-408-0130) makes devices that can send audio, video, and remote commands over residential AC wiring. Predictably, Elcom's ezAudio system ($99) adds some noise and hum, but less than you'd expect. With ezTV ($99), there is noticeable ghosting and softening of the picture. The IR emitter provided with ezTV and the ezRemote IR extender ($70) fastens directly to the IR sensor on the component you want to operate, which means it can control only that component.

Recoton's and Elcom's video-transmission systems transmit RF-modulated TV signals, not composite or S-video. The performance of devices that transmit signals over the airwaves (RF) or AC wiring can vary a lot from location to location, so it's best to buy from a dealer who will take them back from location to location, so you can return them if they don't work well in your setup.

Most people prefer to keep all their components in the listening room, in which case the best method of protection is a closed cabinet (just make sure there is adequate ventilation). A model with glass or (safer) Lucite doors will allow infrared remote commands to pass through. However, most of these cabinets have only magnetic latches — an easy conquest for any curious kid. If your cabinet has knobs on the front, a plastic sawtooth lock that goes over the two knobs will provide extra defense. For cabinets with a single door, there is a variety of latch-type items, including ones that consist of a plastic strip with an adhesive backing at one end and a Velcro fastener at the other. The strip goes on the door, while a matching adhesive-backed Velcro pad goes on the cabinet. These products are available from many hardware and children's stores. I got mine at Toys "R" Us.

If you're going to use an open component cabinet, you have to protect components individually. There are some products that do this, such as plastic covers for VCR tape wells. With the cover in place, your tyke can't jam a jelly sandwich into your VCR. Even a simple VCR dust cover might be enough.

If you're concerned that your child might slide a component off the shelf and onto his noggin, you can put some reusable adhesive like LePage's Fun Tak on each foot of the component, which will secure it to a degree at negligible cost. If you really want to hold it fast, you can use QuakeHold straps (800-418-7348), which run between $8.99 and $14.99.

You can prevent components from being operated by the junior set by connecting their AC cords to a power strip mounted high on the back of the cabinet. Whenever you're not using the system, turn off the strip's power switch. Just remember to check the volume setting before you turn the system back on!

The rat's nest of cables at the back of a component cabinet can pose a slight but significant strangulation hazard. Also, a strong tug can cause shorts on speaker outputs or open grounds on signal inputs. You can reduce these risks by bundling the cables with tie-wraps (bundle AC lines and signal cables separately) and fastening the bundling with LePage's Fun Tak.

In order to prevent children from knocking over the cabinet, you need to make sure it's adequate for the job and that each one is securely in place. Be especially careful if you're fastening cable to drywall, which won't hold short tacks, or if you're going through carpet to a wooden floor underneath. And, of course, take care that you don't short out cables when fastening them to walls and baseboards (it's easy to do).

You may be able to reduce tripping hazards by passing cables under carpets or putting an area rug over them. (Don't do this with AC leads.) Monster Cable and other specialty wire suppliers offer flat cables designed to be routed around baseboards and doorframes; most have paintable jackets.

If you want to go all out, remove the baseboard molding, hollow it out enough to accommodate the cables, put the cables in place, and then replace the molding. If you want to leave the wire on the surface but out of reach, use hollow plastic sleeves, which are available from some specialty wire companies and large office-furniture suppliers.

When babies are starting to stand, they'll use any available structure to pull themselves up. A TV on a flimsy stand is a dangerous, top-heavy hazard. Look for a stand made especially for your TV, with some kind of clamp to keep it in place.

Speakers on stands present one of the greatest toppling risks. You can reduce the danger by applying reusable wrapping (bundle AC lines and signal cables separately) and fastening the bundling with LePage's Fun Tak.
Children Will Listen

Sometime after your first child is born, you’ll make a discovery about your audio/video equipment. It’s not yours anymore. It’s hers. The discovery will come when you attempt to fill a precious quarter-hour with a Beethoven sonata, or maybe Ella Fitzgerald singing your favorite from The Gershwin Songbook.

Your toddler will let you know, with whatever language skills she has, that she wants to listen to Raffi’s “Willoughbee Wallaby Woo.”

“Sweetie,” you’ll implore, “it’s my turn. We’ve already listened to that 346 times this morning.” After you’ve given in, you’ll wonder if there isn’t a way you can get your little one interested in serious music.

Maybe there is.

The first time my wife’s cousin, Allison Girling, and her children visited us, I asked what sort of entertainment Jacob, 6, and Sarah, 4, would like. “Have you got The Magic Flute?” their mother asked. I put it on, and the kids listened happily while the adults chatted.

Jacob’s interest in classical music started when he was 2 years old. “We were watching The Nutcracker on American Ballet Theater, and he was entranced by the music and the movement of the dance,” recalls his mother. Sarah and Jacob’s interest in opera was inspired by a televised performance of The Magic Flute with sets by the British painter David Hockney. Again, the appeal was as much visual as musical. Sarah, now 7, continues to be very keen on opera. Jacob has become “Elephant and Juliet” from Prokofiev’s Romeo and Juliet has become “Elephant Music.” Our little girl stomps the room swinging one arm like a trunk. She likes all these musical treats in short, constant segments.

With music programs being cut back by many school boards, kids are going to have to learn about music at home. At our house, the little one adores many kids’ records, but she’s also taken with Ella Fitzgerald (and has just started to sing along with “It’s Delovely” from The Cole Porter Songbook), Broadway musicals (“I Am Sixteen” from The Sound of Music is frequently demanded), movie soundtracks (“A Spoonful of Sugar” from Mary Poppins is playing in the background as I write this), and even some classical music, though we’ve had to sugarcoat it by inventing story lines. The galumphing “The Montagues and the Capulets,” section of Prokofiev’s Romeo and Juliet has become “Elephant Music.” Our little girl stomps the room swinging one arm like a trunk. She likes all these musical treats in short, constantly repeated segments.

Even though I’ve grown to like Raffi, I don’t feel like I can impose my taste on him. But kids’ musicians such as Raffi or Prokofiev sure beats endless repetition of “Willoughbee Wallaby Woo.” Still, there’s no doubt who’s in charge of the music system, and it’s not me. —G.B.

of music at the University of Toronto and a former principal of the Royal Conservatory of Music in Toronto. “Early exposure to good music puts you ahead—just like anything else,” he says. “It means you have more years of enjoyment. The big thing is to be selective about the kind of music children hear and the setting they hear it in. It should be a setting without interruptions or distracting elements. But don’t make it something the child is required to do.”

Cynthia Doan-Beardsley, a Toronto author and early-childhood music educator, says that very young children absorb far more from simple music, such as Raffi’s Singable Songs for the Very Young, than from complex musical arrangements. And long compositions can overwhelm children’s attention spans. She thinks it’s important that music be an active as well as passive pursuit. Parents can install a sense of involvement by singing to their kids and by choosing musical experiences that invite the child to participate. With this foundation, kids will be ready for richer experiences.

With music programs being cut back by many school boards, kids are going to have to learn about music at home. At our house, the little one adores many kids’ records, but she’s also taken with Ella Fitzgerald and has just started to sing along with “It’s Delovely” from The Cole Porter Songbook. Broadway musicals (“I Am Sixteen” from The Sound of Music is frequently demanded), movie soundtracks (“A Spoonful of Sugar” from Mary Poppins is playing in the background as I write this), and even some classical music, though we’ve had to sugarcoat it by inventing story lines. The galumphing “The Montagues and the Capulets,” section of Prokofiev’s Romeo and Juliet has become “Elephant Music.” Our little girl stomps the room swinging one arm like a trunk. She likes all these musical treats in short, constantly repeated segments.

Even after thorough kidproofing, you’ll still have to exercise some vigilance and provide some firm direction to protect your small fry and A/V equipment from each other. But the preventive effort will dramatically reduce the chaos around you have to do and give you a little more time to enjoy playing with your electronic toys.
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New technologies have the recording industry fighting record pirates harder than ever

The case had been building for years, and investigators and law-enforcement officials were nearing the end of a difficult operation. The agents prepared for a series of carefully orchestrated raids and arrests. Suspects were profiled, with a special focus on criminal histories and previous violent behavior. Teams were assigned and site-specific intelligence spelled out. Where were the entrances and exits to the illegal factories? Might they encounter armed guards or vicious attack dogs?

Finally, more than a hundred agents fanned out to locations in four states. Those assigned to arrest some two dozen far-flung suspects performed a truly dangerous job. And the teams who stormed the factories looked like they came out of a big-budget Hollywood action movie, with bullet-proof vests, raid jackets, and plenty of firepower at their disposal.

What did they hope to find when they burst through those factory doors? Drugs? Weapons? Counterfeit currency? The agents expected and found — two of the largest and most successful audio-cassette counterfeiting rings ever uncovered in the United States. Banks of high-speed duplicators — capable of making dozens of 60-minute counterfeit cassettes in a single 30-second pass — were seized, as were thousands of finished tapes containing the work of such varied and popular recording artists as Pearl Jam, Pink Floyd, LL Cool J, John Lee Hooker, and Kenny G.

The two counterfeit rings were allegedly supplying retail stores, street vendors, and flea markets throughout the Eastern U.S. Their efforts accounted for nearly one-third of the legitimate music industry's annual losses from domestic piracy according to the Recording Industry Association of America (RIAA), which estimates total domestic losses at $300 million a year. The raids, which took place in the fall of 1995, resulted in seventeen indictments. Last summer, three ring-leaders were convicted and sentenced.

Times have changed dramatically since the days when the RIAA, which represents all of America's major record labels, inspired vocal derision among music fans with its ubiquitous battle cry, "Home taping is killing music!" Illegal and illicit music recording is a huge global business estimated at $2 billion annually. In 1995, more than two million counterfeit CDs were reportedly seized in China alone — by a government that is just now recognizing Western copyright law.

Back home, inexpensive CD-R recorders and disc-duplication machines enable bootleggers to manufacture high-quality copies of live recordings without leaving their apartments. And the latest online technology has computer-savvy music fans trading near-CD-quality recordings on the Internet. Those concerned with piracy must surely wax nostalgic for a time when record collectors making compilation tapes for their friends seemed the biggest threat to profits.

BY KEN KORMAN

Even the RIAA admits that not all record piracy is created equal. It distinguishes between three basic types of illegal recordings. Counterfeit recordings, like those confiscated in the case described above, are mostly cheap reproductions of legitimately released albums. Pirate recordings also contain commercially released music but are repackaged into single-artist "greatest hits" or multi-artist "DJ mix" compilations. Bootlegs generally contain unreleased live recordings or studio out-takes by artists with large and insatiable followings. While record-industry officials tend to combine all three types of illegal recordings when compiling statistics and estimating losses, many music fans are loath to equate the relatively small, fan-oriented bootleg business with more pernicious forms of piracy.

No one defends counterfeit or pirate recordings, and for good reason. Record companies turn a profit only on
the top 15 percent or so of their artists. Revenues from the sale of these artists' recordings subsidize many less popular but culturally significant types of music, including most jazz and classical recordings. And even within the pop realm, mega-hits provide the resources record companies need to find and nurture new bands. Top-selling artists inevitably attract the vast majority of counterfeit activity, jeopardizing the delicate structure of the entire music industry. Besides, counterfeit and pirate recordings don't do justice to the music they contain, which means they are no bargain for fans at any price.

Bootlegs, on the other hand, constitute a far more complicated and morally ambiguous problem. Illicit live recordings of major artists don't necessarily displace sales of legitimate recordings. The typical bootleg buyer is a deeply devoted fan who already owns a particular artist's entire catalog and is merely looking to feed his or her passion with additional "rare" and "historic" material. Phish, the Black Crowes, the Dave Matthews Band, and offshoots of the Grateful Dead are among the performers who not only condone live taping but set up special "taping areas" at their shows for fans.

Artists and record companies certainly deserve the right to control their own destinies, just like the rest of us. But in the view of many music fans, precious law-enforcement resources might be better spent on something other than an essentially unwinnable war against almost victimless crimes.

Bootlegs remained mostly a minor nuisance to the recording industry, which always seemed to have bigger fish to fry. Record companies hadn't yet tapped into the specialty collector's market with today's box sets and "expanded editions," so savvy entrepreneurs were happy to step in and fill a relatively tiny niche market.

Things began to change after CD-format bootlegs appeared in 1989. Murky and inconsistent overseas copyright laws allowed European bootleggers to create a larger and more lucrative industry than ever before. Record-industry priorities gradually shifted to encompass the bootleg market, and new laws came into effect that made it easier to track down and convict bootleggers. Most important was the federal Anti-Bootleg Statute of December 1994. While previous statutes criminalized domestic manufacturing, distribution, and trafficking of bootlegs, the new law provided for seizure of bootlegs manufactured outside the U.S. by Customs "at the point of importation." This was just what anti-bootleg forces had dreamed of.

"It gave us a very effective tool for stopping the influx of bootleg recordings to the U.S.,” said Frank Creighcn, an RIAA vice president and associate director of its anti-piracy office, of the new federal law. According to Creighcn, more than 800,000 bootleg CDs were confiscated as the result of a single year-long investigation, dubbed "Operation Goldmine," that ended in March of this year.

Working in conjunction with U.S. Customs, the RIAA lured several of the biggest alleged European bootleggers to Florida in an elaborate and unprecedented undercover sting operation. Though the case has not been fully resolved at this writing, observers and participants on both sides called it "the end of an era" for the bootleg market in Europe and America. Tougher state laws have allowed the RIAA to target bootleg retailers. In New York, an amendment to the penal code that took effect in November 1995 made it a Class E felony to distribute or sell bootlegs. State law had previously covered only manufacturing. In July 1996, as agents busted two

Record companies turn a profit on only the top 15 percent of their artists.

famous downtown Manhattan record stores, Second Coming and Revolver Records. New York State Attorney General Dennis C. Vacco held a sidewalk press conference and proclaimed Greenwich Village the "single largest distribution point in the East, perhaps in the country," for bootlegs.

Small, independent record stores have always been the primary outlet for illicit recordings. In the 1990s, the retail music business has consolidated into large chains like Tower, Virgin, and HMV, making it much harder for smaller outlets to compete. "Bootlegs are an economic issue for the independent record stores," says Bill Glahn, editor and publisher of Live! Music Review, which covers the bootleg world from the fan's perspective. "To keep their doors open, they have to offer something you can't find at Wal-Mart or Best Buy. In most cases, that "something" isn't bootlegs but used, legitimate CDs, another commodity that the recording industry wants to eradicate.

Sympathy for the plight of independent record stores, which play a key role in breaking new bands that later make money for major labels, reached an all-time high last spring when Jules D. Zalon, a lawyer representing the Dave Matthews Band, mounted his own 'sting' operation on several small record stores in the Northeast.

After sending someone in to purchase bootleg Dave Matthews Band CDs, Zalon returned to each store with a federal marshal, confiscated all the stores' illicit discs — even those by bands that don't object to bootlegs — and threatened to sue for $100,000 for each CD, according to The New York Times. He then offered each store the chance to settle out of court in the form of an immediate cash payment of $10,000 or $15,000, which was enough to bankrupt some stores. Even those opposed to illicit music in any form were shocked by these tactics. The Dave Matthews Band soon pleaded ignorance and backed off from the entire matter, but it was left with the biggest rock-related public-relations disaster since John Lennon casually remarked that the Beatles were more popular than Jesus.

Interestingly, all the recent efforts to stamp out illicit music are unlikely to have much effect in the long run. It's not just underground entrepreneurs who are keeping the field alive but also recent advances in audio technology. CD-R recorders have made boot-
"Bootleggers can knock out 120 CDs overnight while they sleep," explains Live! Music Review's Glahn. "In a week you've got a thousand copies, which is enough to satisfy the collector's market for any given title."

Even CD-R doesn't pose the potential long-term threat now perceived in recent advances in online technology. A new audio data-compression scheme called MP3 (MPEG-2, audio layer three) makes it possible for casual Net-surfers to download a typical song with near-CD-quality sound in about 20 minutes over standard phone lines. While that song might occupy 60 megabytes in standard CD-audio form, it's only about 5 megs encoded with MP3. And the software needed to decode and listen to MP3 files is widely available on the Internet.

To the dismay of the recording industry, college students across the country began setting up archives of MP3-encoded music early this year. Most, such as Stanford University computer-science major David Weekly, were motivated purely by fascination with a powerful new technology. Weekly set up an archive of about 160 songs by artists like R.E.M. and Orbital, and he traded them openly with others maintaining MP3 archives on the World Wide Web.

About two weeks later, Stanford's Network Services division contacted Weekly after noticing that his Web site was responsible for about 80 percent of the school's network traffic. "They were concerned that I might be running some kind of commercial service," Weekly says. The same day, Geffen Records called the school about Weekly's site. "Geffen was actually just trying to help—to keep me from being sued by some of the large music-industry organizations," Weekly says. He shut down his site immediately, which proved a wise move. The RIAA's Creighton. At this writing, the RIAA had received either temporary or permanent injunctions against the three sites. But keeping copyright recordings secure in the digital domain may prove difficult in the future.

The RIAA is now studying a number of new systems for copy-protecting and silently "watermarking" recordings with copyright information, which would at least help track the product if large-scale digital piracy occurred. "Technology has created this problem, and I believe technology is going to be the solution to this problem," says Creighton. Meanwhile, another compression system that's even better than MP3—Advanced Audio Coding (AAC)—will likely be available by the end of the year. By then, the recording industry may well be trying to sell music itself through legitimate downloads from the Internet. One company, N2K, is already offering authorized MP3 song files at $1 each from its Web site, though reportedly with limited success.

In any case, the recording industry may soon have to make room for a new wave of computer-savvy entrepreneurs. Stanford's David Weekly, who has just begun his sophomore year, has already founded the MP3 Consortium, which studies legal issues related to digitized music, and a company called Universal Digital Media, which he hopes will distribute legitimate music files over the Internet to a captive college audience, "We aren't out to hurt anyone," Weekly says. "We're looking for ways to work with artists and record companies and make everybody happy with this new technology, because we think it can happen."

Ken Korman is a regular contributor to Video magazine and writes frequently about home entertainment.
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Oasis Is Getting Better All the Time

Say, has anybody noticed that Oasis sounds a little bit like the Beatles? Just kidding. If you want to write off the Manchester five as Fab Four soundalikes, go right ahead: they certainly drop enough references on Be Here Now to make it worth your while. But they have always been too good, not to mention too cocky, to be mere throwbacks to the Sixties. They really want to be better than the Beatles to inspire young bands thirty years from now, and to make albums that matter in the Nineties. With Be Here Now they reach at least the last of those goals.

Not a modest record by any means, the new album aims for grandeur at every turn — in the epic song lengths (only three are under 5 minutes), the colossal production, and the anhetic tone of the lyrics. Guitarist/songwriter Noel Gallagher, one of the surest hook-slingers in modern pop, gives the record a solid melodic foundation, and there's nothing retro about the spacious guitar sound. The vocals of brother Liam Gallagher have their usual swagger, and, yes, he still sounds like a cross between John Lennon and Lydon. As for the many references — the title "Magic Pie" (was it a flaming one?), the quotes from Bob Dylan and the Beatles, the familiar David Bowie chord progression in "Stand by Me" — the Gallaghers bring their own spirit to the party they're crashing.

The real surprise, considering the band's rocky public image, is the amount of warmth and camaraderie that these songs put across. The opening single, "D'You Know What I Mean?", reaches out to their fans without condescending. "My Big Mouth" backs self-effacing lyrics with Sex Pistols guitars. And "The Girl in the Dirty Shirt" is a guttersnipe's love song that avoids cheap sentiment.

All the stops get pulled out in the album's final quarter, where "All Around the World" and "It's Gettin' Better (Man!!)" blend into a suite running nearly 20 minutes, ending with an orchestrated coda that makes "Hey Jude" sound suble. Here the guys get so optimistic that they risk sounding air-headed, but there's just enough toughness between the lines, and the crashing guitars of the second tune evoke genuine elation. It takes guts even to try something like this, and some kind of brilliance to carry it off.

Brett Milano

OASIS: Be Here Now.

A Grand Duo: Barenboim, Lupu Play Schubert

When enthusiastic reports began coming from Europe of Daniel Barenboim's programs of Schubert's four-hand piano music — some with Radu Lupu, others with Andras Schiff (with one or the other on hand to turn pages) — it seemed more than likely there would be recordings, the only questions being how soon and how many. A new Teldec CD does not give all the answers, but whether it is the first of several or the only one planned for now, it is a treasure. On it Barenboim and Lupu perform one of the most familiar of Schubert's four-hand piano music — some with Radu Lupu, others with Andras Schiff (with one or the other on hand to turn pages) — it seemed more than likely there would be recordings, the only questions being how soon and how many. A new Teldec CD does not give all the answers, but whether it is the first of several or the only one planned for now, it is a treasure. On it Barenboim and Lupu perform one of the most familiar of Schu-
Matraca Berg: The Songwriter Sings

With credits that include Deana Carter’s “Strawberry Wine” and Patty Loveless’s “I’m That Kind of Girl,” Matraca Berg is better known as a songwriter than as an artist in her own right, but only because somebody at her former record label slipped up. Like Rosanne Cash, to whom she bears a slight vocal resemblance, Berg has the goods to be a major star both with country’s sophisticated uptown audience and in the larger pop arena, as she amply displays on Sunday Morning to Saturday Night.

In her soulful, sensuous, and impassioned soprano, Berg constructs a song cycle of life in the small-town South, but one that’s more from the viewpoint of Eudora Welty than, say, Jeff Foxworthy. Her characters are complicated, confused folks who, like most of the rest of us, struggle mightily with the pull between right and wrong, as well as with the conflict of Saturday night’s fire down below and Sunday morning’s blaze and brimstone. There’s the truck-stop waitress of “Good Ol’ Girl,” who dutifully goes to church with her mother, piling her hair up high so she’ll feel closer to God. But she also keeps a picture of Elvis when he came through town, sneaks out with a trucker now and then, and yearns to see more than the sun creeping over her dingy windowsill each morning. Then there’s the nice old lady of “Back When We Were Beautiful,” who, to an almost light-opera parlor song, poignantly relives her younger days through the ghostly faces that float through her photo album each morning. Then there’s the nice old lady of “Back When We Were Beautiful,” who, to an almost light-opera parlor song, poignantly relives her younger days through the ghostly faces that float through her photo album each morning.

If this record is a multifaceted profile of human loneliness — the exquisite “Here You Come Raining on Me,” with its haunting National steel-guitar intro, begins with the stark scene of “Blackbird shivers on the old clothesline” — the album is not without its lighter moments. “Back in the Saddle” is a sexy romp across a satiric landscape of cowgirls, western music, and the absurd theory that opposites attract in the wacky back 40 of America. Berg, who understands such opposites as well as anyone, gets away with “Some People Fall, Some People Fly,” with electric glee.

If the people who walk these back streets feel “stuck between lost and found,” like the lover of “Here You Come Raining on Me,” she’ll be sneakin’ up on your heart’s blind side.
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Robert Craft's multivolume survey of Igor Stravinsky's complete works, begun in 1992 for MusicMasters and now up to Vol. IX, which features The Firebird and other works, is clearly a labor of love. The project is based on Craft's intimate association with the composer over more than twenty years, as assistant and biographer, as well as scholarship nourished by his access to original sources.

I count more than a dozen CDs of the complete Firebird, but Craft's new recording profits from both his scholarship and his conductorial expertise. The details of his research are set forth fascinatingly in his elaborate program notes with the CD. I especially like the added elements in the grotesque Kanchen episodes and the use of the long natural trumpets in the final pages, which gives the piece an extra charge of excitement. What we have in this well-crafted performance is not only splendid musicking but what amounts to a critical edition of a score that has undergone an enormous amount of pushing and pulling about since its 1910 premiere.

The recording as such has plenty of richness and brilliance, and the Philharmonia Orchestra's performance leaves nothing to be desired. For a complete Firebird, this one and Stravinsky's own 1961 recording on CBS are my first choices.

The CD leads off with the early Fireworks, composed for the 1908 wedding of Rimsky-Korsakov's daughter, then jumps to 1965 for a 26-second orchestral canon based on the Russian tune that forms the basis for the concluding pages of The Firebird. The Four Etudes are from the World War I era, and the 1928 orchestrations offered here are tart balletic pieces with the exception of No. 3, a "Canticle" with overtones of the Dies Irae. These works, too, are all well played by the Philharmonia.

Late Stravinsky is represented by the 1964 Variations for Orchestra — hermetic serialism on paper but quite accessible if listened to as ballet music. Balanchine knew what he was doing when he created a dance work from this score in 1966, stretching its less than 6-minute length with the simple expedient of repetition. Prime Neoclassical Stravinsky is represented by the 1946 Concerto for Strings, whose three movements provided the basis for Jerome Robbins's stunning 1951 ballet The Cage. Both of these works are performed by the London Philharmonic, and the playing is stunning in its linear and rhythmic precision. David Hall

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CONDUCTOR ROBERT CRAFT

124 STEREO REVIEW NOVEMBER 1997
The magazine that knocks you on your ear

BARGAIN BASS: INAGE DYNAMICS WICKED WOOFER
CAR STEREO REVIEW

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EARTH, WIND & FIRE:
In the Name of Love.
PYRAMID/RHINO 72864 (49 min).

SMOOTH ELEMENTS — THE SONGS OF EARTH, WIND & FIRE.
SHANACHIE 5036 (58 min).

After four years away from the studio, Earth, Wind & Fire has come up with its best album in at least a decade, In the Name of Love. Founder/producer Maurice White has turned down the technology to recapture the warmth of the band's early sound. Here again is the blend of R&B-based vocals, African-derived rhythms, and jazz-influenced playing that made EWF a genre-bending group.

The signature shouting horns provide an exciting response to the strutting vocals of the catchy title song. Lead singer Philip Bailey intoxicates with his falsetto in the hauntingly atmospheric "Cruising." Familiar treatments occasionally make way for a bit of change; lyrics of the rousing "Revolution" are pure hip-hop, with Bailey's son serving up a rap that sounds more like the Sixties than the Nineties. But what matters most is the music, and with this set of skillfully shaped songs, White has positioned Earth, Wind & Fire to move into the next century.

Smooth Elements features instrumental versions of the group's hits, ranging from Tuck & Patti's virtuosic "Getaway" and Larry Coryell's kalimba-driven "Evil" to saxophonist Mark Johnson's bloodless "Devotion." The vigorous EWF vocals we know so well are sorely missed. David Benoit and Russ Freeman avoid the problem in "After the Love Is Gone" by integrating singers Vesta and Phil Perry into their robust arrangement. But mostly, this is music for the Quiet Storm crowd, with just a few peaks among the bland.

DAN FOGELBERG: Portrait —
EPIC/LEGACY 67949 (four CDs, 290 min).

Listening to the sixty-plus songs on Portrait, including five previously unreleased tracks, it becomes clear that Dan Fogelberg is a talented tunesmith who is gifted with a fine sense of melody, a decent flair for poetic romanticism, and a warm, celestial baritone. But only a half-dozen of the songs are truly memorable: "The Power of Gold," "Dancing Shoes," "Same Old Lang Syne," "As the Raven Flies," "Sweet Magnolia" (and the Travelling Salesman)," and perhaps "Tell Me to My Face," an old Hollies tune that he passionately revived with flutist Tim Weisberg. Otherwise, there's a lot of stuff here that sounds like copies of other, more original artists (Buffalo Springfield, Neil Young), and there's far too much treacle of the Barry Manilow school.

For us sentimentalists who love to wallow in the melancholia of lost love, you can't beat "Same Old Lang Syne," a perfect meeting place of romantic yearning, spiritual independence, and, yes, frozen food. If Fogelberg had kept his musical scope this focused, he might still be a hitmaker. Instead, right or wrong, he's the ultimate symbol of the overly sensitive male.

GENESIS: Calling All Stations.
ATLANTIC 83037 (68 min).

As an English synth/orchestral pop album in the vein of Tears for Fears or Orchestral Manoeuvres in the Dark, Calling All Stations isn't bad. But as a Genesis album, it's pretty much a bust. Genesis, you recall, was a wildly creative progressive-rock group before the drummer got carried away with himself. The band's last really good record, the 1983 single "Mama," neatly coincided with the rise of Phil Collins's adult-contemporary solo career.

With Collins out of the picture, you'd think Genesis might make the art-rock comeback that long-time fans have been hoping for — with one more "Supper's Ready" for the road — but you'd be wrong. Instead, Mike Rutherford and Tony Banks have pulled in young, photogenic singer Ray Wilson and homogenized even more. Wilson has a fiercely fine set of pipes, but he fails to put across a Genesis-type personality — or any other type. The music here is pretty but slight; even the two 9-minute tracks are less Genesis epics than pop songs that take too long to make their point.

The two original members laid down most of the instrumental tracks before Wilson's arrival, leaving signs that the album could have been better. Banks can still turn a haunting melancholy, and his keyboard textures are the one link with the Genesis of old. And after twenty years as the band's
nominal lead guitarist, bassist Rutherford is finally stepping forward and playing lead guitar. Still, Calling All Stations has the markings of a failed commercial effort; it’s sadly appropriate that the title track’s lyrics amount to a plea for airplay.

**Etta James**: Love's Been Rough on Me.
PRIVATE MUSIC 82140 (4:1 min).

★★★★★

Blues queen Etta James has long dreamed of recording a country album but not even her most ardent supporters could have imagined what a powerful collaboration she would make with producer Barry Beckett, who came to Nashville steeped in the Muscle Shoals brand of country-soul.

Beckett, who came to Nashville steeped in the session she would make with producer Barry Beckett, who came to Nashville steeped in the Muscle Shoals brand of country-soul.

ITTA JAMBS:

ITTA JAMBS:

Lang's most visible chameleon continues to impress and interpret in lush orchestration and thematic envelope-pushing with Drag, a covers/concept album that plays on, yes, her sexual orientation but more heavily on smoking: the romance of it, the addiction of it, the contamination of it, and the fight to overcome it, only to succumb again.

It takes an artist as confident and campy as k.d. lang to pull off an album of songs made famous by artists like Peggy Lee (“Don’t Smoke in Bed”), Les Paul and Mary Ford (“Smoke Rings”), and the Hollies (“The Air That I Breathe”). Sometimes her conceit runs thin, especially when she gets too cocky, as in “Smoke Dreams.” But she triumphs through her inventiveness in plotting the arrangements and interpreting the lyrics. Then there’s her frank treatment of in-your-face sexuality: she destroys the macho mentality of Steve Miller’s “The Joker” and renders it completely feminine. And what she does with the line “I really love your peaches/I want to shake your tree” will make you blush.

Still, lang and co-producer Craig Street go mainly for a serious treatment of love, sex, and addiction. “Don’t Smoke in Bed” becomes a metaphor for sexual possessiveness — and for the dangers of promiscuity in the age of AIDS. Likewise, “My Last Cigarette,” with the line “Sometimes your drug chooses you,” is about summoning the strength to ditch a bad habit, a harmful relationship, a toxic love.

Whether you find Drag an object of craving or the ashes of lang’s earlier, varied musical incarnations depends on how much you buy into the forty-two-year-old country singer’s post-twang, torchy persona. Either way, it is an intoxicating puff piece.

**K.D. Lang**: Drag.
WARNER BROS. 46623 (53 min).

★★★★★

Canada’s most visible chameleon continues her foray into lush orchestration and thematic envelope-pushing with Drag, a covers/concept album that plays on, yes, her sexual orientation but more heavily on smoking: the romance of it, the addiction of it, the contamination of it, and the fight to overcome it, only to succumb again.

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**Star System**

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**Barbara Manning**: 1212.
MATADOR 221 (56 min).

★★★★★

For a singer/writer with a classic pop sensibility, Barbara Manning has always had a surprising attraction to darker territory. Her last two albums, with the now-defunct band S.F. Seals, were full of attractive, guitar-driven tunes, but a haunting undertone lingered after the hooks snapped you.

Titled after her December 12 birthday, 1212 is her most adventurous album yet, a beautiful song cycle about death, rebirth, and transcendence, but mostly about death. Not many singers would dare cover Richard Thompson’s cracked keynote song, “End of the Rainbow,” or Tom Lehrer’s mock-grisly “Rickity Tikity Tin,” which she does without the mocking. And few pop writers would attempt something as ambitious as The Arsonist Story, a suite looking into the psyche of a fire-starter and his disturbed parents.

In short, this is a perfect album for late-
night catharsis, and the heavy moments are offset by the pop shimmer of the arrangement and by Manning’s warm, unguarded singing. Both are put to good use in the most surprising cover, “Marcus Leid,” borrowed from the German progressive band Amon Duul II. It’s the tune that turns the album’s mood around, and you’d never think that a quirky song about Joan of Arc could sound so uplifting.

B.M.

THE MOMMYHEADS.

DGC 25129 (46 min)

I had a chance encounter with the Mommyheads in a New York subway about a decade ago and, finding them to be a vibrant young bunch of guys, had an intuition they’d go far. That they did, relocating to San Francisco. In an artistic sense, they’ve kept developing to the point where I can tout their major-label debut (and fifth album overall) as a fount of cleanly articulated pure-pop pleasure that simply refuses to budge from my CD player.

Adam Cohen, the band’s founder, songwriter, guitarist, and lead voice, hews to the timeless virtues of melody and songcraft while letting some quirks and a brainier-than-usual musicality shine through. He sings in a high quaver that’s reminiscent of his new album Resigned, because it intimates a lack of conviction—which is indeed borne out on much of this record. Flashes of brilliance, most of them arrayed toward the beginning, affirm Penn’s sub-

piano chords and a supple rhythm section that makes a comey virtue of restraint.

The Mommyheads seem to be rooted in the notion of pop as something that’s both ambitious and instantly appealing, something that’s accessible in tune while sounding slightly off-kilter. It’s a delicate and difficult balancing act, but it’s pulled off here with aplomb.

MICHAEL PENN: Resigned.

57/Erle 67710 (39 min; enhanced CD).

BLAKE MORGAN: Anger’s Candy.

N2K Encoded Music 10003 (40 min; enhanced CD).

It’s unfortunate that Michael Penn called his new album Resigned, because it intimates a lack of conviction—which is indeed borne out on much of this record. Flashs of brilliance, most of them arrayed toward the beginning, affirm Penn’s sub-

stantial creativity, while the bulk of the album confirms its underuse. The opening song, “Try,” demonstrates his knack for brooding, baroque power pop. It’s followed by “Me Around,” a bit of Beatlesque tunefulness that manages to be both jaunty and downcast, and “Like Egypt Was,” a piece of psychotically driven pop that draws you into its acrid mood. The rest of Resigned limps along in a cheerless funk whose nadir is “Small Black Box,” where a tortured analogy is drawn between a broken relationship and an airplane crash. And the A/V material of this enhanced CD doesn’t offer much; the in-studio vignettes are merely lacelike diversion.

A newcomer from New York City, Blake Morgan shares with Penn an emotional directness and a love of barbed pop. His debut album, Anger’s Candy, is longer on promise than delivered goods, although songs like the prickly but involving opener, “Lately,” hint at a deeper well of talent that may surface more fully on subsequent recordings. By and large, however, this is a labored effort that never quite finds its footing. Worse, the ECD’s multimedia content only makes the album seem colder and more uninviting than it already is.

TITANIC

(Original-Broadway-cast recording).

RCA Victor 68834 (73 min).

STEEL PIER

(Original-Broadway-cast recording).

RCA Victor 68878 (74 min).

The “disaster musical” may be an emerging trend of the late Nineties. Here we have two freshly minted slices of early-twentieth-century Americana, one depicting the epic shipwreck that burst the bubble of the Gilded Age, the other contemplating the Great Depression via the microcosm of a dance marathon in which dozens of the Crash’s victims foxtrot themselves into physical collapse. Both musicals rely heavily on spectacle, but, as distinct from cinematic restagings of these calamities, both use words and music to reflect on the meaning of these events and what they have to say about us as a people.

Titanic, last season’s big Tony and box-office winner, is a first-rate musical drama that’s only marginally closer to Carousel than it is to Tosca. Composer Maury Yeston and crew have come up with a Broadway Gesamtkunstwerk that illustrates what Andrew Lloyd Webber (and his Miserables imitators) had in mind but hadn’t the craftsmanship to pull off. Although Steel Pier closed even before the cast album could be released, whatever problems the show had were not in its score. Songsmiths John Kander and Fred Ebb evoke the Thirties with snappy thoroughness, from swinging and syncopated numbers to comic opera. Their songs are more traditionally tunetul than those of Titanic. Neither of these two original-cast albums qualifies as anything like a disaster.

W.F.
PAUL WELLER: Heavy Soul.
ISLAND 524 277 (41 min).

Heavy Soul is the closest thing to a Jam album that Paul Weller has made since he broke up that great band fifteen years ago. In fact, if the Jam had stayed together after 1982's The Gift, which added heavier production and a soul-influenced sound, this is where it might have gone.

Weller has been on the right track since he broke up his disappointing Eighties band, the Style Council, and found a more personal vision of rock and soul. His previous record, Stanley Road, reached back to the glory days of English album rock, echoing the sound of Joe Cocker, Humble Pie, and, especially, Traffic. Those influences are still evident on Heavy Soul, but he has returned to the Jam format of guitar/bass/drums. The acoustic "Driving Nowhere" and "As You Lean into the Light" prove that Weller's melodic knack is stronger than it was in Jam days, but the title track, "Peacock Sun," and "Brushed:" all have a guitar-slinging bravado that recalls his old band.

After the introspective mood of Stanley Road, Weller now sounds truly content for the first time on record. Many of the songs are about accepting uncertainty — "I have no solutions, better get used to it" — but by the closing "Mermaids" he's celebrating romance with a bouncy, sta-la-la chorus. Good to hear that Weller's happiness has fired him up instead of mellowing him out. B.M.

Dwight Yoakam loves sneaking a song like Elvis Presley's "Little Sister" into his act, so this album of animated covers isn't such a surprise. What will knock you off your chair, however, is the big-band version of the Kinks' "Tired of Waiting for You," in which a Vegas-ized Yoakam swings like a Jack Jones for the Nineties. What's even weirder is that after the initial shock, he doesn't even sound that odd doing it.

Yoakam and Anderson are inspired in the lyric. Under these covers, he shows a bold interpretive skill that he and Anderson share in spades.

Weller has supervised homages to Thelonious Monk, Nino Rota, the Disney empire, and Kurt Weill. And now, Weill again. September Songs involves not only rock-and-rollers like Nick Cave and P.J. Harvey but also opera singer Teresa Stratas, jazz vocalist Betty Carter, and the late author William S. Burroughs. Because the cast is so diverse, September Songs is even more successful than Lost in the Stars, Weller's earlier Weill CD, at establishing the universality of the Weill songbook.

Cave's ravaged "Mack the Knife" takes some getting used to, but it is damn near definitive in its portrayal of murderous decadence. Likewise, Harvey looks through a glass darkly at "Ballad of the Soldier's Wife," and David Johansen steps out of his

Heavy Soul is terrific, its song choices speaking volumes about Yoakam's musical upbringing as well as that of producer/arranger Pete Anderson. Whereas some of the renditions don't alter the structure of the material, others are strip-down-start-over remakes. Two cases in point: the Clash's "Train in Vain," recast as near bluegrass with Ralph Stanley on banjo and harmonies, and the Rolling Stones' "The Last Time," in bluegrass overdrive with a Merle Travis-style electric lead guitar.

Yoakam and Anderson are inspired in the album's two standouts, "Wichita Lineman" and "I'll Be Your Baby Tonight." Yoakam explores a wider vocal range than ever before in the Jimmy Webb song, and Anderson's brilliant arrangement creates a fresh, exuberant sound, especially with the up-front percussion. The Beatles cut is likewise transforming, by way of a great, swirling electric guitar and Yoakam's insinuating reading of the lyric. Under these covers, he shows a bold interpretive skill that he and Anderson share in spades.

A.N.

Dwight Yoakam: Under the Covers.
REPRISE 46690 (42 min).

PAUL WELLER: September Songs — The Music of Kurt Weill.
SONY CLASSICAL 63046 (69 min).

Hal Willner has supervised homages to Thelonious Monk, Nino Rota, the Disney empire, and Kurt Weill. And now, Weill again. September Songs involves not only rock-and-rollers like Nick Cave and P.J. Harvey but also opera singer Teresa Stratas, jazz vocalist Betty Carter, and the late author William S. Burroughs. Because the cast is so diverse, September Songs is even more successful than Lost in the Stars, Weller's earlier Weill CD, at establishing the universality of the Weill songbook.
At the height of its popularity in the mid-Seventies, Renaissance played to capacity audiences in Carnegie Hall, but the band's progressive rock has since been largely unavailable on CD. Today, however, the catalog is growing. King Biscuit Flower Hour has released the two-part Renaissance at the Royal Albert Hall with the Royal Philharmonic Orchestra, recorded in 1977. Also out is Songs from Renaissance Days, a set of rarities on the King Biscuit imprint Mausoleum Classix. As for the original studio albums, the American CD rights to Prologue and Ashes Are Burning are being renegotiated, and Warner Bros., which owns the U.S. rights to the band's Sire albums, has U.S. rights to the name most associated with Renaissance is that of its long-time singer, the dazzling Annie Haslam. Whose most recent solo album, 1994's Blessing in Disguise (One Way), is her best to date. And these days, Haslam is especially active. In addition to projects with Steve Howe and Patrick Moraz, she is planning her next solo record, as well as benefit shows in Brazil for poor children and adolescents. (A live CD culled from Brazilian performances earlier this year is also expected.) She is currently in the midst of an East Coast tour, including a candlelight concert on December 12 in Montclair, New Jersey, and Christmas shows on December 20 and 21 in Upper Black Eddy, Pennsylvania. (For details, visit Haslam's Web site at http://www2.epix.net/~haslam. The best Renaissance site is at http://user.mc.net/jlt/nlights/index.html.) Those who are holding out for a Renaissance reunion, Haslam has three words: "Let it go." Sitting in her rural American home, she told me that "if I turned around and said, 'Let's do it,' everybody would. But I want to move forward." She remains proud of their heritage - "That band was so special with those five people" - and she continues to perform classic material, even unearthing "Spare Some Love" and "Let It Grow" for her current dates. But her own revitalized career signals a genuine new start for the singer. "It's my rebirth," she summed up. "This really is my own renaissance." - Ken Richardson

JAZZ

JOHN CLARK: I Will. POSTCARDS 1016 (54 min).

French horn players rarely step up front in jazz, but there is often a call for them in the background. John Clark has heeded many calls from the likes of Gil Evans, Carla Bley, McCoy Tyner, and George Russell, but now he steps front and center with I Will, a gem that won't soon be forgotten.

Clark's compositions dominate the program. They range from "Bad Attitude," an intricate chamber piece where the instruments engage in a tantalizing dispute, to the mellow and richly textured little tune, where Alex Foster's pleading tenor saxophone and the leader's smooth horn have something mighty pretty to say. Then there are the more familiar tunes like "My One and Only Love," in a beautiful rendition that spotlights Clark's silken horn, and Sonny Rollins's "Airegin," which has Bob Stewart proving just how little a tuba can be. An album of shifting moods, I Will is an aural kaleidoscope that dazzles the ears. C.A.

CARMEN McRAE: Sings "Lover Man" and Other Billie Holiday Classics. COLUMBIA/LEGACY 65115 (47 min).

The first appearance on CD of Carmen McRae's 1962 salute to Billie Holiday is one of 1997's most essential reissues. For years, this was the album I pulled off the shelf when trying to convince a doubter that McRae at her peak was in the same league as Sarah Vaughan and Ella Fitzgerald.

McRae's voice here was still as pure as it had been on her overproduced Fifties sides for Decca, and she hadn't yet cultivated the mannerisms that made her recordings from the Seventies onward so disappointing. Unintimidated by the prospect of reinterpretting songs already given definitive interpretations by Holiday, she knew the difference between evocation and imitation — summoning up Holiday's ghost fleetingly in a few of the ballads, including "Some Other Spring," McRae's version of "Yesterdays," which she states simply at a slow tempo before taking it up, shows her to have been a
great actress as well as a great singer. And she swings “I Cried for You (Now It’s Your Turn to Cry over Me)” and “Travlin’ Light” from beginning to end, accompanied by a small group featuring trumpeter Nat Adderley and, in solos of erotic aggression, tenor saxophonist Eddie “Lockjaw” Davis.

Love Man achieves an unfussy perfection that puts McCartney’s much later Jooa tribute to Holiday to shame. Get this one before it disappears again.

F.D.

CHARLIE PARKER/DIZZY GILLESPIE: Diz ‘n Bird at Carnegie Hall. ROOST/BLUE NOTE 85061 (73 min).

Charlie Parker and Dizzy Gillespie are known as the fathers of bebop, and their performances at Carnegie Hall in 1947 are legendary. This recording captures the essence of their style and the atmosphere of the time. The music is a testament to their skill and innovation, and it is a must-listen for fans of jazz.


Here is a close-knit group that continues to produce splendid chamber jazz but somehow manages to elude the big spotlight. Five Concerts and a Landscape was recorded in New York between 1992 and 1995. Pianist Bluth, bassist Messina, and drummer Chattin move authoritatively through a program of three familiar selections and a Messina original, “The Dean’s List.” C.A.

JULIAN DAWSON: Move Over Darlin’ COMPAD 423 (47 min).

Britain’s Dawson rallies friends Richard Thompson, the Roches, Dan Penn, and Steuart Smith for a low-key collection of neo-folk and blues originals plus some odd covers. He has a raspery whisper that suits easily on the ear, and his star roster helps make this a lively-sounding record. Still, it never really gets up to speed, and it runs out of gas far too soon. A.N.

DR. JOHN: Trippin’ Live. SUREFIRE/WIND-UP 13047 (70 min).

The great Mac Rebennack arrives on his first authorized live album, reprising career-spanning favorites in loose, stretched-out versions that allow for multiple solos from his long-time veteran blues and jazz sidemen. There are slow spots, but by the time he ends the evening with a nearly unrecognizable though exceedingly exuberant “Goodnight Irene,” you’ll be praying the sun never comes up. A.N.

FLEETWOOD MAC: The Dance. REPRISE 46702 (79 min).

No doubt you’ve already seen this live reunion several times on TV. Now listen. They can still sing (including Stevie Nicks, except for the highest notes), they can still play, and they can still break our hearts, and their own, with “Landslide” and “Silver Springs.” And the four new tracks are all excellent (including Stevie’s), especially Lindsey Buckingham’s nifty “My Little Demon.” Great program, great sound — and that playing time! K.R.

ZIGGY MARLEY & THE MELODY MAKERS: Fallen Is Babylon. ELEKTRA 62032 (59 min).

Despite its Rasta-influenced title track, this is the Melody Makers’ poppiest and shallowest record yet. Most glaring is the cover of “People Get Ready”; done at too fast a clip with computerized beats and chippy backup vocals, it verges on cruise-reggae. The album is heavy on love songs, nice but clichéd messages, and feel-good sentiments. Too much party, not enough consciousness. B.M.

DELBERT McCLINTON: One of the Fortunate Few. RISING SUN 1017 (38 min).

On his first new album in four years, Delbert McClinton overhauls his irrepressible brand of roadhouse country-blues with a staggering array of guests, proving two things: nobody else writes with such deadpan humor about the characters who populate every town’s juke-joint culture, and nobody ever made such frayed vocal cords sound so fine. A.N.

SCOTTY MOORE/DJ FONTANA: All the King’s Men. SWEETISH 0002 (37 min; enhanced CD).

Here’s a short, sweet set of old-school rock-and-roll, with former Elvis Presley guitarist Moore and drummer Fontana joined by the proverbial cast of thousands. The liaison with the Band and Keith Richards in “Deuce and a Quarter” is a match made in heaven. Joe Ely and Steve Earle each get the Sun Records-era feel right, and Tracy Nelson showcases her bluesy power in the torchy ballad “All of This for Me?” The A/V material includes interviews and studio footage. P.P.

CECIL PAYNE: Scotch and Milk. DELMARK 494 (72 min).

Now 75, Payne plays baritone sax as eloquently as ever, his approach ranging from robust attacks to delicate caresses. There isn’t a regrettable moment on this generously timed CD, but there are high points, such as pianist Harold Mabern’s solo in “If I Should Lose You,” trumpeter Marcus Seales’ solo on “At Last Every Town’s Juke Joint Culture,” and Tracy Nelson showcases her bluesy power in the torchy ballad “All of This for Me?” The A/V material includes interviews and studio footage. P.P.

THE PLANET SLEEPS.

WORK/SONY WONDER 67772 (48 min; enhanced CD).

Lullabies from sixteen countries demonstrate a common thread that connects all cultures: the need to love and nurture our children. The expertly chosen songs also display our planet’s fascinating diversity of languages and musical styles. The multimedia content offers notes, lyrics, and a few sight-bites of locations and artists.

William Livingstone
HAYDN: Mass No. 14, in B-flat Major ("Harmoniemesse"); Te Deum.

Sandra Piau (soprano), Monika Groop (mezzo-soprano), Christoph Prégardien (tenor), Harry van der Kamp (bass); Choeur de Chambre de Namur; La Petite Bande, Sigiswald Kuijken (bass); Choeur de Chambre de soprano), Christoph Pregardien (tenor). Harry Sandra Piau (soprano). Mom Li ("Harmoniemesse"); Te Deum.

Haydn's last completed composition and forms a magnificent prince Esterhazy. It is Haydn's last composition, associated with Gustav Leonhardt and Sigiswald Kuijken from its inception, has established itself as one of the leading early-instrument ensembles in Europe, specializing in Baroque and Classical works. Its collaboration here with the Namur Chamber Choir and a first-rate quartet of soloists is impressive, and the performances are lively, colorful, and beautifully shaped.

E.S.

KANCHELI: Mourned by the Wind;
Light Sorrow.

France Springuel (cello); boys chorus: I Fiamminghi, Rudolf Werthen cond. TELARC 80455 (72 min).

The titles tell it all: this CD offers 72 minutes of dark, grim melancholy, unrelied by so much as a momentary gleam of hope. The music of the Georgian composer Giya Kancheli, frankly, makes for arduous listening. Nonetheless, it is intensely felt and often brilliantly composed, and those willing to devote the time will find much to reward their concentration.

Light Sorrow is a cantata, with texts from Goethe, Shakespeare, Pushkin, and a Georgian poet named Galaktion Tabidze, sung by two boy sopranos and a boys' choir. They drone the words tonelessly, as if from another world, while the orchestra roils ominously, occasionally erupting in terrifying explosions. Mourned by the Wind, subtitled "Liturgy for Orchestra and Solo Cel-

Leonard Slatkin's new RCA Victor CD of "space music" with the Philharmonia Orchestra leads off with Edward Varèse's orchestral blockbuster Arcana. The out-of-this-world sonic events in this 17-minute work — replete with howling dissonance, propulsive rhythmic figuration, and occasional delicate interludes laced with sardonic march episodes — makes its discursive, Gustav Holst's The Planets, seem like an Edwardian tea party in comparison.

Slatkin gives the Varèse a sharply defined reading that makes its mix of passacaglia and rondo elements quite intelligible on repeated hearings. The sound's the thing, however, what with the large array of brass and the six percussion players, complete with stringed lion's roar.

The Planets gets a sharply articulated treatment, especially in the opening "Mars" movement, which is adamantine and mercilessly relentless. The third movement, "Mercury," is, well, mercurial beyond any other performance I have ever heard. The famous "hymn" section of "Jupiter" is broadened out, but not as excessively as in some performances I've heard. The great "Saturn" movement is as haunting as ever, with its sad processional and climactic outcry

OUT OF THIS WORLD

Leonard Slatkin

Leonard Slatkin's new RCA Victor CD of "space music" with the Philharmonia Orchestra leads off with Edward Varèse's orchestral blockbuster Arcana. The out-of-this-world sonic events in this 17-minute work — replete with howling dissonance, propulsive rhythmic figuration, and occasional delicate interludes laced with sardonic march episodes — makes its discursive, Gustav Holst's The Planets, seem like an Edwardian tea party in comparison.

Slatkin gives the Varèse a sharply defined reading that makes its mix of passacaglia and rondo elements quite intelligible on repeated hearings. The sound's the thing, however, what with the large array of brass and the six percussion players, complete with stringed lion's roar.

The Planets gets a sharply articulated treatment, especially in the opening "Mars" movement, which is adamantine and mercilessly relentless. The third movement, "Mercury," is, well, mercurial beyond any other performance I have ever heard. The famous "hymn" section of "Jupiter" is broadened out, but not as excessively as in some performances I've heard. The great "Saturn" movement is as haunting as ever, with its sad processional and climactic outcry

of the female choir Holst called for, but it works superbly, adding up to the most unearthly performance of "Neptune" in my experience.

David Hall


Philharmonia Orchestra; New London Children's Choir; Leonard Slatkin cond. RCA VICTOR 68819 (67 min).
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CLASSICAL MUSIC

MOZART: Il Re Pastore.


Written when Mozart was 19, Il Re Pastore is not a true opera but rather a serenata, a small-scaled confection offered as an evening's entertainment. In most cases, there was little action, just sung comment on a particular situation—here the near-loss and subsequent reunion of two pairs of lovers, whose separation had been threatened by the well-meaning attempts of the king, Alessandro, to bring peace and order to Sidon (Macedonia).

It's pretty tenuous stuff, but Mozart's music transcends the confines of his libretto. One example: Tamiri's joyous aria in Act I, "Di tante sue procelle," revealing her love for Agenore, which is splendidly sung by Inga Nielsen. Her performance throughout is well contrasted by the appealing purity of Eva Mei as the more girlish Elisa, who is betrothed to Aminta, the titular young Shepherd King.

Mozart's simplicity, or seeming-simplicity, is revealed in Aminta's vow of fidelity to Elisa, "L'amere, sarò costante," the work's most famous passage. The transparency of the musical line achieved by Ann Murray as Aminta is particularly affecting. Deserving special mention is the dramatic finale of Act I, a duet disclosing the feelings of the two pastoral lovers about to be separated. As Alessandro, tenor Robert Sacca is amusingly self-satisfied in his aria "Si spande al sole in faccia:" an example of how Mozart's gentle humor leavens the score. Tenor Markus Schlüer's Agenore, a rather pompous and insensitive Sidonian nobleman, provides satiric commentary on courtly behavior.

The work was recorded live in Vienna's Musikverein, justly renowned for its remarkable acoustics. There is a fine clarity in the recording, enhanced by the crisp playing of period instruments by the members of the Concentus Musicus Wien. Nikolaus Harnoncourt conducts with a sure and sensitive hand. The accompanying booklet contains interesting explanatory notes.

R.A.

MUSORGSKY: Dream of the Peasant Griotsko; Khovanschina, Introduction and Galitzin's Journey; Pictures at an Exhibition (orch. Ravel).

New Jersey Symphony, Zdenek Macal cond. DELOS 3217 (56 min).

The New Jersey Symphony Orchestra may not be in the same class as the Philadelphia, Cleveland, or Chicago aggregations, but its players acquit themselves with convincing credibility and spirit in this all-Mussorgsky program under conductor Zdenek Macal.

Dream of the Peasant Griotsko is taken from the composer's unfinished Ukrainian opera, Savotchinsky Fair, and is essentially a highly effective choral-orchestral expansion by Vissarion Shebalin of A Night on Bare Mountain in the Rimsky-Korsakov version, which was incorporated into his 1938 completion of that score. This is the first time I've heard it since several LP versions in the 1950s and 1960s. It is mighty stirring stuff, and it's performed here with uninhibited zest by the orchestra and the Westminster Choral, with valuable contributions by the bass-baritone Clayton Brainerd.

For some reason, Delos saw fit to place the poetic and familiar Introduction to Khovanschina after the great Act IV entr'acte, here titled "Galitzin's Journey." Anyone who has heard Leopold Stokowski conduct this music, on or off records, will be forever haunted by the overwhelming sadness it conveyed in his hands. Macal and his New Jerseyans come the closest I have heard to matching that achievement.

It is tempting to call Macal foolhardy for tackling the Mussorgsky-Ravel Pictures at an Exhibition in competition with recordings by just about every orchestra of note throughout the world. Yet what the performance may lack in ultimate finesse it makes up for in vibrant spirit and expert pacing—"The Hut on Fowl's Legs" is a prime example. The fine sound captured by engineer John Eargle, with lots of oomph and sharp focus, is a major plus.

D.H.

RAVEL: Daphnis et Chloé, Suites Nos. 1 and 2; Rapsodie Espagnole; La Valse; Boléro.

Vienna Philharmonic, Lorin Maazel cond. RCA VICTOR 68600 (75 min).

Lorin Maazel has recorded all this music before, and, with one exception, rather more persuasively than on this disc. The exception is his exciting treatment of the well-worn Boléro, which comes across here with unexpected freshness and intensity. The pacing is a bit brisker than indicated in the score, but Maazel makes it work brilliantly.
and the Viennese players, especially the brass, sound as if they were enjoying their little holiday from Brahms and Bruckner. Most of the other pieces, in contrast, are taken at tempos noticeably broader than the norm. The Rapsodie Espagnole, with its four clearly delineated sections, seems to take this treatment more gratefully than La Valse or the second suite of "orchestral fragments" from Daphnis et Chloé. Tempo is only one element in readings that, after all, do project a great deal of evocative power, as well as a sense of personal involvement all too often missing from performances we can admire mainly (or only) for their clinical precision. Yet for all the sensuous sound-weaving Maazel brings off, for me his approach to these three works lacks vitality, and there is no scarcity of fine alternative recordings. The Daphnis Suite No. 1, however, is both poetic and animated, and the Boléro, as noted previously, is downright magical.

R.F.

A. SCARLATTI: Cantatas, Volume I.
Christine Brandes (soprano); Arcadian Academy, Nicholas McGegan cond. CONIFER 51293 (72 min).

Alessandro Scarlatti, who founded a musical dynasty in Italy that proved to be almost as prolific as the Bach family to the north, wrote more than 600 cantatas. More dramatically intense than a song, yet shorter and more compact than an opera, the cantata typically sets a single scene, usually on a classical or bucolic subject, for a solo vocalist and a small instrumental band, making it ideal for private soirees. Scarlatti wrote most of his cantatas in Rome for a musical and literary salon that came to be known as the Arcadian Academy. Now early-music specialist Nicholas McGegan pays homage with a new series of recordings of a number of the cantatas, performed by an ensemble named after Scarlatti's salon. This first disc is a jaunty, buoyant set of four of them, played and sung with virtuosic panache and lucidly recorded by the Conifer engineers.

The best known of the cantatas here is "Giti Lusingato," a ballad about an English soldier taking leave of his wife; the others include a brief, vivid sketch of the myth of Ariadne and a very full version of the Orpheus myth. The latter is a natural choice for the soloist, Christine Brandes. Her soprano voice has a melting, silvery tone, which she produces with effortless grace and eloquence. Her rendition of Orpheus's keening lament for his lost lover Eurydice, full of amazingly demanding chromatic melismas, is a particularly virtuosic display...
CLASSICAL MUSIC
of her technical finesse and fine emotional shading — which pretty much sums up what you want from a singer of Baroque music. J.J.

R. AND C. SCHUMANN: Songs.
Barbara Bonney (soprano); Vladimir Ashkenazy (piano). LONDON 452 898 (69 min).

It is a pleasure to find increased attention paid to the songs of Clara Schumann by current recitalists. Much influenced by her husband, Clara also emphasized brilliant piano writing in her songs, favored effective postludes, and frequently treated the poetic texts arbitrarily, never allowing them to hamper her musical design.

For Robert Schumann’s “Wabern,” the perfect opening for Barbara Bonney’s recital disc, a more substantial (or male) voice may perhaps be preferred, but her fresh and girlish timbre proves ideal for most of the material here, particularly Robert’s “Mondnacht,” delivered with rapt tenderness, and the feathery “Er Ist’s,” to which she brings an appropriate springtime exuberance. She is equally perfect in two lighter Clara Schumann songs on texts by Heine (“Ich Stand in Dunklen Traumen” and “Sie Liebten Sich Beide”). At the same time, she captures Robert’s “Waldesgespräch” with full awareness of its eerie dialogue, and she brings a variety of dramatic expression to the much-recorded Frauenliebe und Leben cycle.

In some instances (Clara’s “Er Ist Ge- kommen in Sturm und Regen” and “Lore- lei,” to name two), Vladimir Ashkenazy, whose pianism commands attention and praise throughout, takes on a somewhat unnatural dominating role. His contribution to the success of the recital is nonetheless essential, and his part in Clara’s stormy “Leb- eszauber,” with its fierce repeated chords, is awe inspiring.

Overall, this is a very fine program. Bonney’s German is exemplary, and she communicates the poetic essence with clarity and pinpoint intonation. G.J.

SIBELIUS: Symphonies Nos. 1 and 4.
Lahti Symphony, Osmo Vanska cond. BIS/QUALITON 861 (76 min).

Having recorded several of Sibelius’s less familiar works for Bis, Osmo Vanska and his fine little orchestra now set off on a complete cycle of the symphonies. Though its strings are usually augmented for recording, the Lahti orchestra is smallish, probably about the size of those available to Sibelius when he introduced his symphonies. The reduced proportions do bring certain benefits, mainly in terms of clarity, which helps the listener focus on structural details, and the overall high level of the playing, the genuine commitment from every stand. Sumptuousness, after all, is precisely what is not called for in the Sibelius Fourth, and the transparency of the recording itself is superbly appropriate to the austere character of this work, insuring maximum impact for the brooding low strings in the opening movement and the chill solitude of the curious finale. There are similar benefits to the beautifully played clarinet solo that opens the First Symphony and the articulation of the timpani theme in its scherzo.

While the entire First Symphony gains in dignity as well as vigor from Vanska’s brisk pacing and his straightforward way of shaping a phrase, his Fourth is a good deal more expansive than the norm. The added breadth in the opening movement suits its bleak landscape well enough, but the slow movement is distended to 14 minutes — 2 minutes longer than usual. Momentum tends to sag here, and the emotional climax of the work doesn’t quite come off. That is the only real disappointment in either work, but it is quite a critical one. Nonetheless, there is a powerful integrity in these performances, and in the way Bis presents them. R.F.

STRAVINSKY: Violin Concerto.
PROKOFIEV: Violin Concerto No. 2.
Itzhak Perlman (violin), Chicago Symphony, Daniel Barenboim cond. TELDEC 98255 (46 min).

The performance of the Stravinsky Violin Concerto is full of verve and character, thanks in no small measure to the hand-in-glove collaboration of Daniel Barenboim and his Chicagoans with soloist Itzhak Perlman. This music can be made to sound pretty straitlaced in its Neoclassical way, but Perlman’s nimbleness, wit, and warmth are totally disarming. The sound of the live concert recording from fall 1994 is fine and dandy.

While Perlman has recorded the Stravinsky only once before (with Ozawa and the Boston Symphony in 1980 for Deutsche Grammophon), this is his third time around with the Prokofiev Second Concerto. He displays great intensity in the lovely slow movement and dazzling virtuosity in the finale. The sound of the May 1993 recording, also made live in concert, is okay, even with Perlman very much front and center, but there is some unusually obtrusive room noise (air conditioning?) at the start. Moreover, this performance is identical to the one on a 1993 Erato CD, where it is paired with the Mendelssohn Violin Concerto. And the Teldec CD times out at a measly 46 minutes, the decidedly more generous recordings of the Stravinsky by Cho-Liang Lin (Sony) and Kyung-Wha Chung (London) include both Prokofiev concertos. D.H.

TAN DUN: Symphony 1997
(Heaven, Earth, Mankind).
Yo-Yo Ma (cello); Imperial Winds Ensemble of China; Yip’s Children’s Choir, Hong Kong
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MUSIC FOR AN AUDIENCE

The American composer Lowell Liebermann (born 1961) has been demonstrating that it is still possible to write music that audiences actually like to hear without condescending, "dumbing down," or compromising creative standards or individuality. Liebermann was the youngest and least known of the three composers from whom the Steinway Foundation commissioned concertos for the inaugural concert of its 21st Century Piano Project at the Kennedy Center in Washington in 1992. Each was played by a different soloist with the National Symphony under Mstislav Rostropovich.

The unabashed romantic exuberance of Liebermann's four-movement Second Concerto, with a wickedly playful little scherzo and a similarly brief and energetic finale framing the striking pas-sacaglia slow movement, made it the clear audience favorite. Here was music, brilliantly idiomatc in the writing for both piano and orchestra, that embraced the tunefulness and vivid coloring of Rachmaninoff and Liszt, yet was in no sense a bag of clichés or a rejection of contemporary language. Its muscularity and drive appeared neither sardonic nor belligerent, but seemed to be manifestations of a definitely upbeat vitality.

The pianist on that occasion was Stephen Hough, who had given the premiere of Liebermann's First Concerto in 1988 and is a pre-eminent champion of his music. His participation in the Hyperion recording of both concertos, with the composer conducting the BBC Scottish Symphony, is an assurance of authenticity in the most meaningful sense, involving wholehearted commitment and the most thorough preparation on everyone's part. Both the First Concerto — a more concise and somewhat more darkly colored work in three movements, the last an especially imaginative "Maccabber Dance" — and the Second receive absolutely glorious performances. Liebermann, an experienced conductor, clearly knows how to get exactly what he wants from the orchestra, which for its part responds with both confidence and apparent enthusiasm.

Hough, who also contributed the comprehensive annotation, fills out the disc with six of the eighteen solo pieces that make up the Album for the Young that Liebermann assembled in 1993, among them homages to Faure and to Alkan, an ostinato in the spirit of Satie, and "Starry Night," the piece on which Liebermann subsequently based the love duet in his opera The Picture of Dorian Gray. Of these is as long as 2 minutes, like the concertos, they are recorded with exemplary and full-bodied realism. Richard Freed

LIEBERMANN: Piano Concertos Nos. 1 and 2; Album for the Young (excerpts).
Stephen Hough (piano); BBC Scottish Symphony, Lowell Liebermann cond.
HYPERION 66966 (56 min).

The 40-year-old Tan Dun was born in China but has lived in the U.S. since 1986. His most ambitious work to appear thus far is the Symphony 1997 (Heaven, Earth, Mankind), composed to commemorate the July 1 reversal of British-rulled Hong Kong to the People's Republic of China. The cellist Yo-Yo Ma plays a major role; his solos link the first and last parts, and he is the protagonist in the central part ("Earth"), a concerto for bianzhong, cello, and orchestra. A bianzhong is an array of tuned bells, and the one heard here is an amazing array of sixty-five bells, more than 2,400 years old, that were recovered in 1978 from a princely Chinese tomb along with more than a hundred other instruments of the period, all in a perfect state of preservation. Tan's score marks their first significant modern use and as such is both a musical and a sonic tour de force.

The opening "Heaven" section features children's choir and bianzhong in five contrasting episodes, preceded by a shorter version of the "Song of Peace" that concludes the entire work (both versions feature Ma's cello). "Heaven" climaxes in a vivid evocation, using sampling techniques, of Chinese opera on Hong Kong's Temple Street — a marvelous label of sounds. The music drifts between Chinese and Western idioms, and there's a clear reference to the "Ode to Joy" in Beethoven's Ninth Symphony.

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The bianzhong was recorded in the museum where it is kept in Wuhhan, China, the 300-strong children's choir and the Hong Kong Philharmonic in Hong Kong, and Ma in Mechanics Hall in Worcester, Massachussetts. How's that for technology! Yet the result comes off surprisingly well under the composer's direction, adding up to a singular, entertaining, and often stirring listening experience. D.H.

Tchaikovsky: Variations on a Rococo Theme; Eugene Onegin, Lensky's Aria; Nocturne; Andante Cantabile; Souvenir de Florence.
Mischa Maisky (cello); Orpheus Chamber Orchestra. DEUTSCHE GRAMMOPHON 453 460 (73 min).

Using the standard Fitzenhagen edition, which omits the eighth variation and changes the composer's original ordering, the cellist Mischa Maisky makes the best possible case for Tchaikovsky's engaging Rococo Variations, offering a beguiling mix of volatility and finesse. His handling of the treacherous harmonic for the solo instrument is perfectly to the point. In the famous Eugene Onegin aria and the lovely Nocturne, Op. 19, No. 4 (originally for piano but here arranged with a lovely flute obbligato), Maisky displays his mellifluous tone to fine advantage. The sentiment becomes a bit overripe in the always lovely Andante Cantabile arranged from the String Quartet No. 1, but by and large all of the solo-cello work on this CD falls lightly on the ear.

Maisky, however, plays no role in the Souvenir of Florence, a late work composed for six top string players of the St. Petersburg Chamber Music Society. Nowadays it is often heard in string-orchestra guise as in the present version. The music is not especially Italianate in flavor, but it is fine vintage Tchaikovsky. A vigorous waltz with a contrasting lyrical episode is followed by a serenade-like slow movement with a restless middle section. The third movement's Russian dance elements are overlaid with an edgy, anxious aura. The finale is tant and brilliant, with finely crafted fugal textures leavened with a fine "big" tune. The Orpheus Chamber Orchestra players acquire themselves splendidly here and elsewhere, and the recording benefits throughout from the sonic excellence of the State University of...
Collections

**ROBERTA ALEXANDER AND DAVID TRIESTRAM: With You.**
Roberta Alexander (soprano); David Triestram (piano). ETCETERA 1190 (59 min).

★★★★★
Flawlessly performed by a couple of pros, this fine new collection of Broadway songs will transform your living room into a chic, sophisticated nightclub. Soprano Roberta Alexander and her partner, pianist David Triestram, offer the exquisite sentiment of Alec Wilder in such wistful ballads as "Blackberry Winter" and "Good-Bye, John," both written for cabaret legend Mabel Mercer, and the brilliant, brittle humor of early Sondheim in numbers like "Can That Boy Foxtrot!" Cut from the original production of Follies, it gives Alexander a chance to wring every drop of risque irony from the lyrics.

She is a distinguished opera performer and lieder singer, but she doesn't let that get in her way. She molds and shapes the tender ballads with unerring taste, never lapsing into the plummy grandeur that mars so many collections of this kind. The program is expertly chosen and well paced. Just when the mood is on the verge of moping, it shifts to a humorous number, such as Tom Lehrer's outrageous "Poisoning Pigeons in the Park" or Shire and Maltby's ingenious "Crossword Puzzle," in which a woman ruminates about her lost love while trying to solve the puzzle in the Sunday paper.

For all Triestram's virtuosity at the keyboard — he races with perfect poise through the fiendishly difficult boogie-woogie in Bernstein's "I Can Cook, Too" — he's obviously much more than an accompanist. The very pleasant voice he reveals in a short duet with Alexander in another Bernstein number, the heartbreaking "Some Other Time," left me wishing he'd been given a bit more to do vocally. The recording is just as intimate as the mood: this is a CD to play at the end of a perfect evening.

**CARMINA BURANA.**
Boston Camerata, Joel Cohen cond. ERATO 149t (73 min).
★★★★
What we have on this CD is not the famous Carl Orff work but an imaginative reconstruction of some of the racy originals from the thirteenth-century Bavarian manuscript that Orff used as his source. The very secular texts are in medieval Latin, German, French, and Provençal, sometimes all at once. The subjects include all the possible sins: gluttony, gambling, drunkenness, avarice, hypocrisy, corruption, injustice, and, above all, lust. Even in their jumbled, multilingual form, the texts can be figured out with some assurance; not so the music. Some of the poems carry little scribbles above the words that suggest musical notation, but their exact musical meaning is not always obvious.

To make the songs performable, the Boston Camerata's director, Joel Cohen, adapted well-known melodies from other, better sources — including Gregorian chant — that were suggested by the texts or otherwise seemed appropriate. The arrangements for solo and ensemble voices, with members of the Harvard University Choir joining the singers of the Camerata, include a generous use of period instruments, and to my ears (and in spite of disclaimers) the lively performance style owes something to Orff. I had a little trouble with some of the trumpet fanfares and cascades of small bells, and there is one song that has an intrusive white-noise effect that may be some kind of incomprehensible technical glitch. Aside from those few odd touches, these are very likable performances.

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CLASSICAL MUSIC

QUICK FIXES

BACH: Two-Part Inventions; Sinfonias (Three-Part Inventions); Four Duets.
Peter Serkin (piano). RCA Victor 68594 (71 min). ★★★
Anyone who studies classical piano knows the Bach Two-Part Inventions and the Sinfonias (or Three-Part Inventions) as brief, ingenious keyboard studies for beginners that are, with a few exceptions, more engaging to play than to listen to. The lesser-known keyboard duets — in effect, longer and more highly developed inventions — represent Bach at his most masterfully and inspire high-quality playing from Peter Serkin. Among the inventions, only the longer, minor-key, chromatic pieces evoke equally expressive performances; most of the rest is merely smooth, knowing, and decorative. E S.

BEETHOVEN: Piano Concertos Nos. 3 and 4.
Jos van Immerseel (fortepiano); Tafelmusik, Bruno Weil cond. Sony 62824 (69 min). ★★★
Jos van Immerseel plays a beautifully preserved Tröndlin fortepiano, made in Leipzig at just about the time these concertos were introduced, and he takes a fairly conventional interpretive approach: no mincing phrases, no clunky articulation, no eccentricities of any kind, and there's real give and take between him and conductor Bruno Weil. Exceptionally natural sound, too. R F.

RACHMANNINOFF: Piano Concertos Nos. 1 and 2.
John Lill (piano); BBC National Orchestra of Wales, Tadaaki Otaka cond. Nimbus 5511 (65 min). ★★★
John Lill's renditions of Rachmaninoff's first two piano concertos (he has also recorded the other two for Nimbus) are authoritative, if a bit on the deliberate side, and marked by sensitivity in the slow movements and ample virtuosity elsewhere. Tadaaki Otaka and the BBC Welsh players provide superb collaboration that is matched by richly detailed sonics. D H.

Roy Goodman (harpsichord); the Hanover Band, Roy Goodman cond. RCA Victor 61903 (58 min).

S ans Souci was Frederick the Great's country retreat near Berlin (the name means "carefree"). The king was himself an excellent flutist and a capable composer, and he surrounded himself with a first-class musical establishment, including Carlo Philip Emanuel Bach, Johann Joachim Quantz (his personal teacher, composer, and music director), and Carl Heinrich Graun (head of the newly founded Berlin Opera). Johann Philipp Kimberger, best remembered as one of J. S. Bach's pupils (he collected and edited Bach chorale arrangements) and an academic theorist, is represented here by a completely unacademic Symphony in D Major in an up-to-date and extremely lively Italianate style. The Quantz Concerto for Flute, Strings, and Continuo in G Major — one of more than 300 concertos that he wrote for the king to play — is typical of his perky, sophisticated, carefree style.

The two arias by Graun are disappointingly routine opera seria imitated from the Italians; neither Nathalie Stutzmann, one of our greatest contraltos, nor conductor Roy Goodman can figure out what to do with them. The excellent Hanover Band fares better with the instrumental pieces, and the best of these is the C. P. E. Bach Concerto for Oboe, Strings, and Continuo in E-flat Major. For two movements, at least, it transcends the merely carefree and reaches a deeper level of expression. E S.

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ICH BIN EIN FUNKAUSTELLUNG

Corey Greenberg

I'm e-mailing this column from Berlin, having spent the better part of a week here for the International Funkaustellung, or IFA, for short. Funkaustellung is kind of like our yearly Consumer Electronics Show (CES) held in the U.S., except that they hold it every other year and the humble bratwurst replaces the Dove bar as the most popular concession item. It's also longer than CES, running a whopping nine days, from August 30 to September 7. The IFA is far and away Europe's largest consumer-electronics show, with more than half a million consumers attending. It's a good thing. The show runs nine days!

This was an interesting show for me because I'm used to trade shows being primarily for dealers, distributors, and the press. But even though over 5,000 members of the international press were expected to attend IFA this year, the show really isn't about the trade hobnobbing with itself. I attended the opening day, which was billed as "Press Day," and found that it was pretty much "We're Still Setting Up Our Booth but Feel Free to Gawk and Be Largely Ignored Day." Unlike CES or the CEDIA (Custom Electronic Design and Installation Association) home-theater/custom-install expo, Funkaustellung is all about consumers. And specifically European consumers, who are very different from you and me, and I don't just mean in terms of hygiene and funny-sounding words for "hot dog."

See, the European hi-fi market is about five years behind America in terms of evolution and trends, and in some ways I think it's always going to be different from the U.S. market. For instance, I got the impression that a component's looks are far more important over here than its sound quality, which would explain the proliferation of truly gorgeous yet sonically hideous European speakers that the people over here seem to go for. I didn't hear a lot of good sound, but I sure did see a lot of shiny chrome woofer-mounting rings set against beautiful blond wood. And, in keeping with long-time German loudspeaker tradition, they seem to like enough treble over here to sear a tuna steak.

But the biggest difference between where we're at and where the European market is at is home theater. We're probably in Year 5 of the U.S. home-theater boom, and, as a result, the concept is no longer a strange and new alternative to the old stereo hi-fi scenario but rather the accepted norm among audiophiles and the general public alike. But in Europe, home theater and surround sound are very new and very small. Of the half-dozen halls devoted to audio at Funkaustellung, only one small adjoining hall was given over to home theater, and even then the demonstrations were more about large PA-style speakers set in each corner of the demo theater than about the concept of using multiple, conventional-size speakers to reproduce movie soundtracks in a typical living room.

It's not just the Germans — I've read the British home-theater mags, like What Home Cinema? and Spam Spam Home Theater and Spam, and they don't get it, either. Just as the U.S. market went through an initial period of total confusion about the best way to do home theater, the demos at IFA indicated a state of home-theater infancy that made me feel like a time traveler come to help steer the Euros past the mistakes we've already made. People of Europe, I have come from the future to warn you: If an American comes over and starts talking about how passive surround processors are better than active ones, shoot. Shoot to kill. Trust me on this one.

Surprisingly, big-screen TVs were AWOL at IFA. I didn't know that big-screen TV was a peculiarly American thing, but I guess it is — although there were many widescreen 16:9 sets scattered all over the show, I didn't see a single rear-projection TV anywhere. The few displays larger than 27 inches were either prototype wall-mounted plasma displays stills, and a pair of mouth-watering go-go dancers in orange hot pants. I never dreamed that you could combine organ-trio jazz with circus juggling, go-go dancing, and gangsta rapping. But I'm telling you, those Germans pulled it off, and how!

THE BIGGEST DIFFERENCE BETWEEN WHERE WE'RE AT AND WHERE THE EUROPEAN A/V MARKET IS AT IS HOME THEATER. HOME THEATER AND SURROUND SOUND IN EUROPE ARE VERY NEW AND VERY SMALL.

Did this jazz-rap-circus-a-go-go have anything to do with Grundig, its products, or the state of European consumer electronics? Not in the slightest. But I do know that half a million Germans packed the huge Messe Berlin convention center for over a week, and that only a few more than two thousand Americans saw fit to attend a recent open-to-all hi-fi show in San Francisco. Why can't the U.S. consumer-electronics industry get more than a handful of American consumers to come to a hi-fi show? As the Germans would probably tell us, we need to put a little more funk in our stellung.
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