

THE WORLD'S #1 A/V MAGAZINE

# Stereo Review

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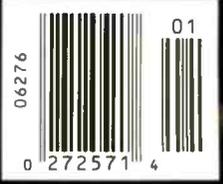
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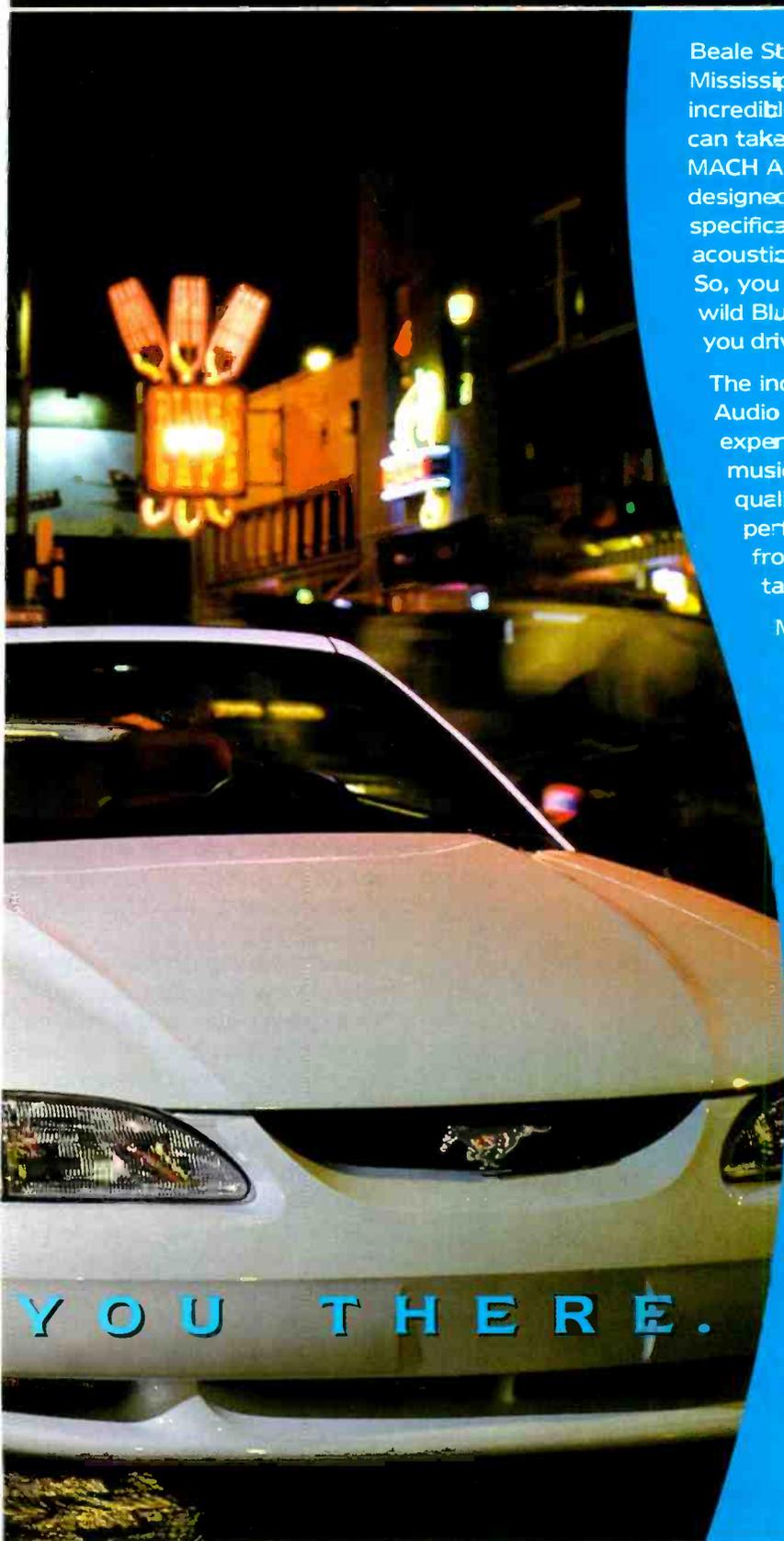
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Dolby Digital add-ons: Harman Kardon's ADP303 (top), Onkyo's ED-901, and Pioneer's SP-99D are three of the options in outboard AC-3 processors. For more, see page 60.

Photograph by Dave Slagle

# Stereo Review

INCORPORATING HIGH FIDELITY

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# BULLETIN

BY BOB ANKOSKO & WILLIAM LIVINGSTONE

## DVD: READY, SET, . . .

As we went to press, the last major hurdle to bringing DVD movie players to market was at least close to being removed, which would clear the way for the sale of players early in the new year. The DVD subcommittee of the multi-industry Copyright Protection Technical Working Group has "provisionally" endorsed an encryption system designed to prevent unauthorized copying of DVD's. Disc contents would be scrambled and then decoded by a special chip in the player that would be licensed to manufacturers.

Meanwhile, movie studios have hired an independent lab to test the encryption system — and they reserve the right to request changes if it's deemed to be too easily circumvented. That, in turn, would further delay the release of some DVD movies as well as players from at least some manufacturers.

## HOLY MACARENA!

In just one year, Los del Rio's *Macarena* (RCA) has sold 4 million copies, making it one of the top-selling singles of all time as certified by the Recording Industry Association of America. The other 4-million-sellers are Whitney Houston's *I Will Always Love You*, USA for Africa's *We Are the World*, Tag Team's *Whoop!* (*There It Is*), and Walt Disney's *Bambi*.

## NY PHIL BACK ON AIR

Thanks to funding from Time Warner, on January 25 the New York Philharmonic will resume live radio broadcasting from Avery Fisher Hall at Lincoln Center. The Philharmonic has been absent from the airwaves for eight years, and this new series will make it the only orchestra in the U.S. to broadcast live nationally. Airing once a month through May, the concerts will be heard in New York, Los Angeles, San

Francisco, Chicago, Houston, Cleveland, Baltimore, Boston, and possibly other cities. Kurt Masur will conduct most of them, but on April 19 guest conductor André Previn will lead the premiere of his own piece *The Magic Number*.

## NEW DEMO CD

The "Gold Stereo and Surround Sound Set-Up Disc," created by Chesky Records with help from STEREO REVIEW, is now available for \$9.98 (plus \$2 shipping and handling) from Chesky. The disc offers a number of musical selections as well as a variety of demo and test tracks for both stereo and home-theater systems. For credit-card orders, call 1-800-294-5894.

## A/V DIGEST

Atlas/Soundolier of Fenton, Missouri, has been awarded a patent for its THP-2 "vibrationless subwoofer," which is intended to be mounted in floors or ceilings. The \$299 system uses a special driver arrangement and isolation mounting system said to render the level of bass energy transmitted to adjacent rooms "nearly nonexistent." Problem is, with a rated low-frequency limit of only 50 Hz, the THP-2 hardly qualifies as a bona fide subwoofer. Nice try, guys. . . . Nakamichi is making its first move into home theater with the CA-1 A/V preamp (\$2,300), which provides both Dolby Digital and Dolby Pro Logic surround decoding; the PA-1 power amp (\$2,000), rated to deliver 100 watts into five channels; and the DE-1 AC-3 RF demodulator (\$450), for use with Dolby Digital-capable laserdisc players. . . . Sony has introduced a palm-size, solid-state voice recorder with 16 minutes of continuous recording time. Dubbed the Voice File, the \$190 device weighs less than 3 ounces and runs on a single AAA battery.



## GOLDEN EARS?

Were early CD players as screechy-sounding as many audiophiles have maintained over the years? To find out, the Prairie State Audio Construction Society, a Chicago-area club, conducted a blind listening test comparing a prototype Philips CD100 14-bit player (serial number 345) — one of the first models launched in the U.S. — with a Sony CDP-707ESD 18-bit reference player. During the ten-trial test, the administrator switched between the two units, which played copies of the same CD at precisely matched levels. While most of the eleven listeners were unable to reliably tell the two players apart, one participant did correctly identify them all ten times — although he admitted that he was largely guessing. Test organizer Tom Perazella, acknowledging that an audible difference did exist between the two CD players, described it as "quite small at best and nowhere near the earth-shaking differences attributed by the 'Golden Ears.'"

In another blind test performed by the club, four listeners compared the same Sony 18-bit player with a Panasonic portable 1-bit CD player. None were able to reliably discern a difference between the two. Says Perazella: "So much for the inferiority of single-bit units. This is especially interesting in light of claims by some of a lack of bass, rhythm, and drive."

## MUSIC NOTES

Windham Hill has released "George Winston, Complete Solo Piano Recordings, 1972-1996," a seven-CD set. . . . Motown Records founder Berry Gordy has been honored with a star on Hollywood's Walk of Fame. . . . A statue of the late Ella Fitzgerald has been erected in Yonkers, New York, where

she lived from 1919 until 1992. . . . The American Classical Music Hall of Fame and Museum is now being set up in Cincinnati, Ohio. Suggestions for potential honorees can be sent to David Klingshirn, President, American Classical Music Hall of Fame, 2002 Carew Tower, 441 Vine St., Cincinnati, OH 45202.

ILLUSTRATION BY MIKE LEE

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Romeo And Juliet (Remastered)	*1987809
Diabolique	*1956002
Dracula:	
Dead And Loving It	*1932201
Mulholland Falls	*1963503
Othello (1996)	*1951805
Sense And Sensibility	*1936301
12 Monkeys	*1937705

## CLUB FAVORITES

Beavis & Butt-Head: The Essential Collection	1963404
Broken Arrow	*1941806
Casino	*1922707
Heat	*1922400
Jumanji	*1918002
Jurassic Park	*1264001
True Lies	*1327105
Bladerunner (Director's Cut)	*1097906
Forrest Gump	*1333202
Waterworld	*1472000
The Shawshank Redemption	*1345503
E.T.: The Extra Terrestrial	*0681106

Dead Man Walking	*1939800
Devil In A Blue Dress	*1498500
Ragtime (Widescreen)	*1959501
Screamers	1933001
Unforgettable	*1952100
The American President	*1923309
And Justice For All	0155903
Black Sheep	1951607
The Fisher King	0687103
Grumpier Old Men	*1922301
How To Make An American Quilt	*1921204
La Femme Nikita	*1427400
Get Shorty	*1502509



THE BIRDCAGE  
\*1970409



EXECUTIVE DECISION  
\*1955905



PRIMAL FEAR  
\*1987601



HEAVY METAL  
\*1486901



BRAVEHEART  
\*1491604



THE RETURN OF THE JEDI (THX)  
\*1415900

Goldeneye	*1920602
Money Train	*1923101
Leaving Las Vegas	*1501808
Never Talk To Strangers	*1502004
Richard III	*1932904
Sabrina (1995)	*1923408
Sudden Death	*1933407
To Die For	*1502701
White Man's Burden	*1502905
Predator	0364901
Under Siege 2:	
Dark Territory	1483007
Bad Boys	1451806
The Fugitive	1197706
The Abyss	0881102
Star Trek Generations	*1382803
Legends Of The Fall	*1371301
Pink Floyd: The Wall	*1293802
Clear And Present Danger	*1326305
Goodfellas	*0969808
Top Gun (Remastered)	*1429406
Tremors 2: Aftershocks	*1507805

Star Wars (THX)	*1416007
The Empire Strikes Back (THX)	*1415801
Backdraft	*0559005
Batman Forever	*1432509
First Knight	*1460104
The Wizard Of Oz	0001404
Desperado	*1485101
Outbreak	*1389501
Cliffhanger	*1149301
Interview With The Vampire	*1364405
Jaws	*0844605
The Silence Of The Lambs	0805309
The Professional	*1364801
Assassins	*1491109
Casper (The Movie)	*1427905
A Clockwork Orange	*1356005
Bridge On The River Kwai (Restored)	*1143809
Rob Roy	*1423201
Aliens (THX)	*1402601
Alien (THX)	*1402502

Apollo 13	*1447903
Die Hard With A Vengeance	*1462209
2001: A Space Odyssey	*0844308
Congo	*1453604
The Wild Bunch- (Director's Cut)	*1388008
Raising Arizona	*1491802
A Walk In The Clouds	*1496504
Virtuosity	*1483601
The Usual Suspects	*1479401
Strange Days	*1502608

## NEW RELEASES

American Graffiti	*1937101
Barb Wire (Director's Cut)	*1963305
City Hall	*1951706
Dark Man III: Die, Dark Man, Die	*1959006
Down Periscope	*1948504
Girl 6	*1948405
The Juror	*1943307
Kids In The Hall- Brain Candy	*1970607
Mary Reilly	*1969203
The Quest	*1971209
Serpico (Remastered)	*1971506
Sgt. Bilko	*1963602

Species	*1452309
The Bridges	
Of Madison County	*1509900
A Few Good Men	*1106301
Immortal Beloved	*1372309
Clueless	*1462506
Ferris Bueller's Day Off	*0427302
The Net	*1469907
Ghost	*0826008
Bram Stoker's Dracula	*1102904
Dragonlayer (Remastered)	*1352103
Under Siege	*1077908
Babe	*1479302
Copycat	*1490804

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# LETTERS

## Dynamic Range

Thanks to Ken Pohlmann for the goods on what is really going on at the recording end of the audio chain ("Signals," October). Indeed, I have always wondered about the thousands of dollars that some "audiophiles" spend on electronics to reproduce lousy recordings perfectly.

Dynamic range in particular has been puzzling me ever since the advent of the CD format. Though most CD players boast noise levels in the -90- to -100-dB range, do any master recordings actually take advantage of such a wide dynamic range? My hunch is that most recordings probably cover no more than about 50 dB — in other words, not much more than the best LP's. So do I really need to look for a 250-watt-per-channel amplifier for my 10 x 15-foot living room, or will my 40-watt receiver continue to do the job, since I am not into home theater?

CHARLES A. LEDUC  
Longueuil, Quebec

*Ken Pohlmann replies: Why buy an automobile with a top speed of 120 miles per hour? Because it's nice to know it's there if you need it. Similarly, the dynamic range and distortion levels of most recordings are inferior even to those of merely good playback equipment. Although the equipment adds some noise and distortion, it is probably minor compared with what's been recorded. On the other hand, do you want to look at a cloudy day through a dirty window? High-fidelity equipment gives you clean glass. Regarding power amplifiers, I'd rather listen to a 250-watt amp pumping out 40 watts than a 40-watt amp doing the same. In other words, headroom is worth paying for.*

## Gerry Mulligan

It was great to see an appreciation of Gerry Mulligan, Chet Baker, and a host of other musicians in Chris Albertson's review in November of the CD reissue "The Complete Pacific Jazz Recordings of the Gerry Mulligan Quartet" — just the incentive to dig out my carefully preserved monoaural LP's recorded in the 1950's and play them on equipment several decades newer. Besides records by individual artists, Pacific Jazz produced several great anthologies in a series called "Jazz West Coast." There was even a \$1.98 sampler LP with narration by Frank Evans that told all you'd ever want to know about the jazz movement at that time. Time for a revival.

JOHN GALLAGHER  
Sonora, CA

## Dolby Digital Demos

In the November issue you published a brief list of laserdisc movies suggested by Dolby Labs as examples of how thrilling Dolby Digital home theater can be. While I realize that not every movie could be listed,

how could *Speed*, with its stunning effects, have been left out? In just the first few minutes the aural cues from the surround speakers — together with the camera's view looking up the elevator shaft where Dennis Hopper's character has planted explosive devices — help to create the chillingly realistic illusion of actually being there.

On Side 1, Chapter 3, 5:22-5:30, the elevator counterweight rises diagonally upward across the screen from the lower right as the elevator descends with its occupants. At 5:47-5:50, as the elevator cables snap and drop down the shaft, the sound travels across the soundfield from rear to front.

On Side 1, Chapter 4, 6:39-6:42, as the car in which Keanu Reeves and Jeff Daniels are traveling goes airborne over the crest of the hill, the vehicle seems to come from behind and jump over your head — and make you duck the first time you experience it.

I use *Speed* as my main reference for judging the effect of component changes or adjustments to my home-theater system.

GLEN BARTHOLOMEW  
Brooklyn, NY

## Digital Audio 101

In "Digital Audio 101" (November), Ken Pohlmann states that "no information is lost between the samples." That assertion is true — you cannot lose what you never had to begin with — but misleading. He should have explained why whatever the sampling process misses (skips, disregards) is not important.

STEPHEN BARCLAY PLACE  
Vista, CA

*Ken Pohlmann replies: The Nyquist Theorem unequivocally states that discrete time sampling is a lossless process with respect to all signals whose frequencies are less than half the sampling frequency. But sampling systems must remove any signals whose frequencies are higher than that. The choice of where that half-sampling frequency will fall is entirely up to the system's designer; it's all the same in theory. So if the half-sampling frequency is above the upper limit of the audible range, as it is in all digital audio systems, nothing at all within that range is missed, skipped, or disregarded.*

## New Technologies

I wanted someone at STEREO REVIEW to know how pleased I was with the October issue, specifically the articles by Ken Pohlmann, Joseph Palenchar, and David Ranada on DVD and Dolby Digital.

The electronics world is moving so fast that keeping up with the new terms and just what they imply can be a mind-numbing experience. I have been a STEREO REVIEW reader for about twenty years and have learned to depend on you for a clear presentation of new technologies. However, I be-

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Center Speaker

For many, many people, *MovieWorks* is the perfect home theater speaker system. It delivers incredible no-compromise performance that doesn't require disclaimers or apologies. We don't know of any other system in its price range that approaches its performance.

### What Is *MovieWorks*?

*MovieWorks* is a set of carefully matched speakers – including a powered subwoofer – for Dolby Pro Logic<sup>®</sup> or Dolby Digital<sup>®</sup> (AC3) surround sound systems. Each speaker is designed to accurately reproduce music and movie soundtracks with outstanding realism.

### Main Speakers.

The left and right speakers in *MovieWorks* use a two-way, shielded design. They are acoustically similar to the satellite speakers in our acclaimed *Ensemble*<sup>®</sup> speaker system, which *Audio* magazine called "the best value in the world."

### The Center Speaker.

The center speaker is a wide-dispersion, high-output shielded design with two 3 1/2" midrange drivers and a tweeter identical to that in the main speakers. Its low profile makes it ideal for use above or below a TV monitor.

### The Surround Speakers.

For the rear channel, we chose an acoustically matched dipole radiator speaker. Each speaker has two high-frequency drivers – one facing forward, one to the rear. They send out-of-phase signals to the front and rear of the room, where they reflect off walls, "surrounding" the listener. We feel dipole speakers are ideal for home theater – including Dolby Pro Logic and Dolby Digital (AC3) systems.

*"The Cambridge SoundWorks dipole surround speaker sounded absolutely great. These will stay on my surround speaker shelves for a long time."*

Home Theater magazine-3/96

### The Powered Subwoofer.

For bass reproduction, we chose an amazing powered subwoofer. It uses a 12" woofer with a 140-watt amplifier for outstanding bass in music and soundtracks. *Sound & Image* says it's, "a winner, pounding out first-rate 108 SPL...a knockout."

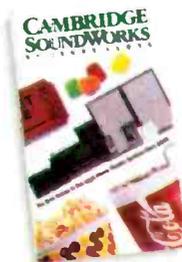
### Satisfaction Guaranteed.

At \$1,299, we think *MovieWorks* is the ideal home theater sound system for people who aren't willing to compromise on performance.

Try *MovieWorks* in your own home, with your favorite music and movies. If within 30 days you decide you don't love it, send it back for a full refund.

*"Cambridge SoundWorks' Powered Subwoofer was clearly the best subwoofer of the pack...it blew them away on dynamics."*

Stereo Review-9/96



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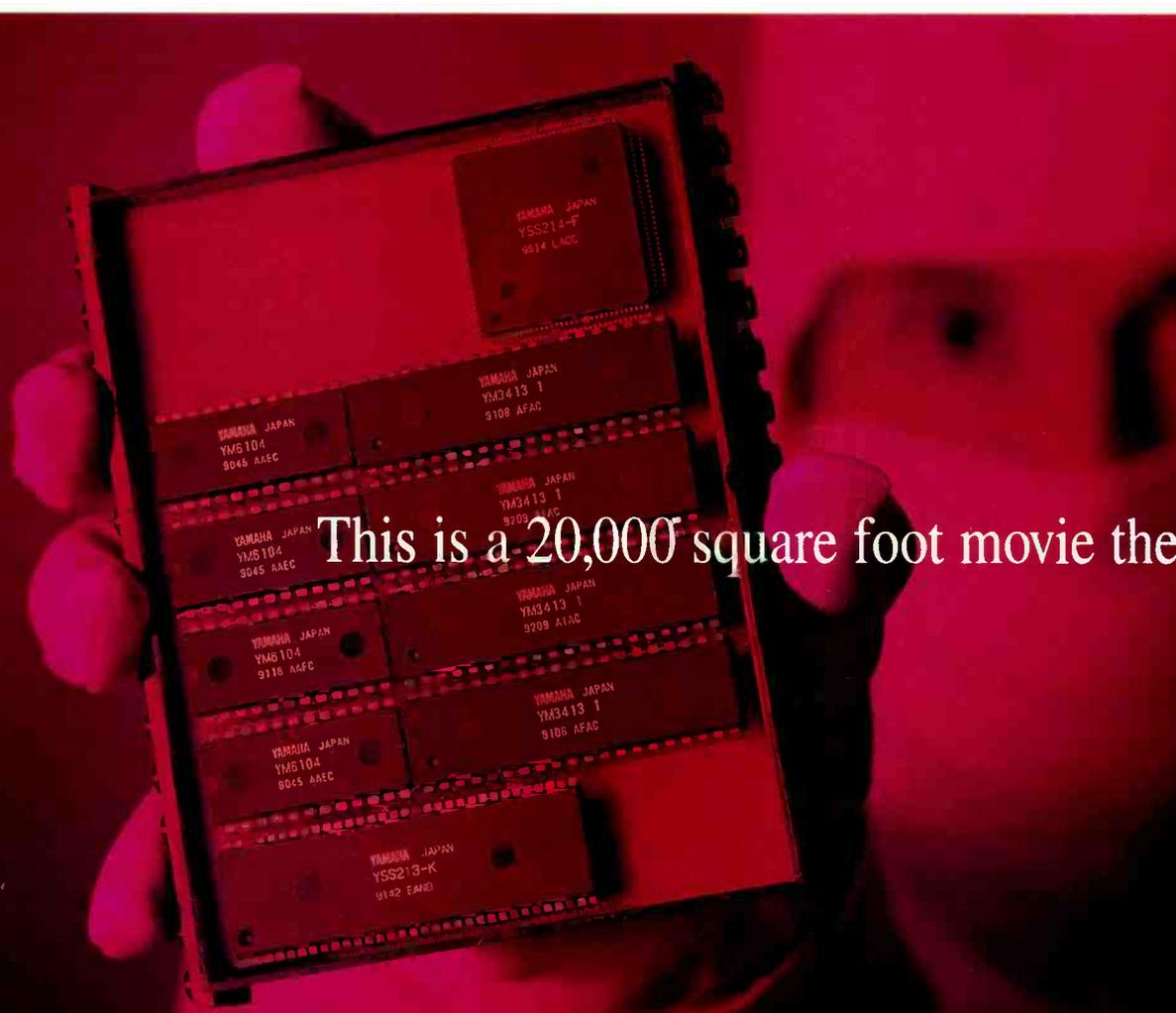
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CIRCLE NO. 6 ON READER SERVICE CARD

## HOW DOES *MovieWorks* COMPARE TO THE COMPETITION?

	DIPOLE SURROUND SPEAKER?	WOOFER SIZE	SUBWOOFER POWER	PRICE
<b>CAMBRIDGE SOUNDWORKS</b>	YES	12"	140 WATTS	\$1,299
POLK (M5, M3II, CS250S, PSW300)	NO	10"	125 WATTS	\$1,499
BOSTON ACOUSTICS (Micro9C, 90X, 90C)	NO	8"	75 WATTS	\$1,399
KLIPSCH (KSS3, KSS2, KSS1)	NO	6.5"	50 WATTS	\$1,199



This is a 20,000 square foot movie theater.

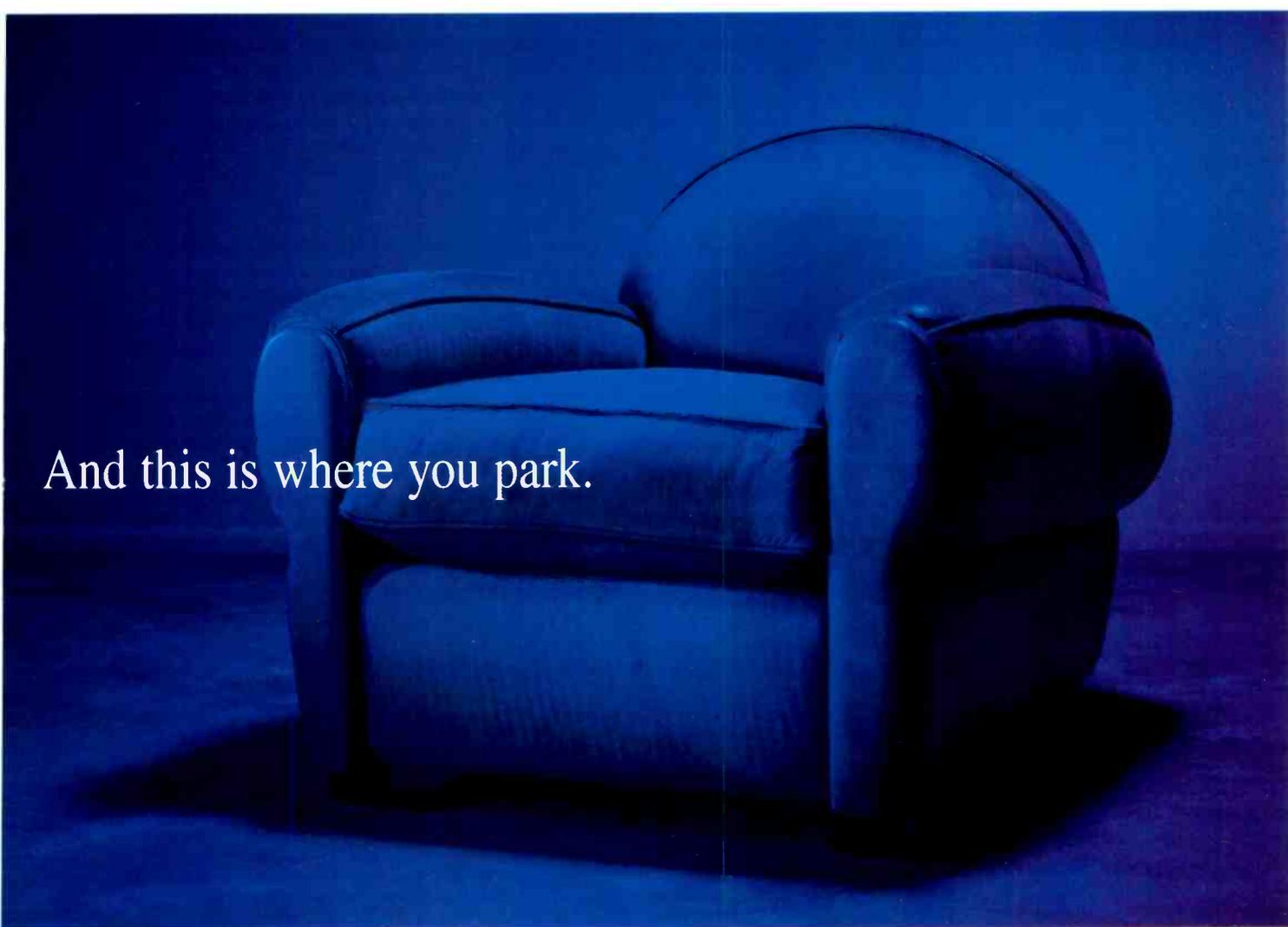
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**The Theater**

*The DSP-A3090 lets you choose from 30 sound field modes. From L.A.'s Roxy and New York's Cellar Club, to churches and concert halls around the world. Seven-channel amplification sends 80 watts to each of the main, center and rear speakers, plus 25 watts to both front effects speakers. Analog, video and S-video, plus RF, coaxial and optical digital inputs link you to today's and tomorrow's Dolby Surround AC-3 components.*

We did leave out a few hundred seats, some plush carpet and the kid screaming in the 13th row. But what we've given you instead is something no home theater owner has ever heard before. • The theater. • It's the expansive acoustic environment that gives a trip to the movies its sense of grandeur. And until recently, it just wasn't possible from a sound system designed to coexist with a sofa, an easy chair and a pair of potted plants. • But that was before decades of Yamaha experience in sound field measuring and processing, custom integrated circuit design and audio microchip fabrication culminated in the new DSP-A3090 Digital Sound Field Processor. Introducing unique technology that creates the unmistakable sensation of a first-run theater's acoustic spaciousness. Combined with the unparalleled accuracy and



And this is where you park.

dynamic range of Dolby® Surround AC-3.™ Every director has something specific in mind when mixing a film's soundtrack for the big screen. And the DSP-A3090's proprietary Yamaha processing techniques maintain the depth, openness and realism of that vision. While also preserving the directional relationships of every sound. So whether it's a musical score, or *T. rex's* roar, you'll hear it exactly how, and where, the director intended. • That's Tri-Field Processing. And it's made possible by the latest generation of Yamaha Cinema DSP. The technology that's kept us at the forefront of home theater for more than a decade. • Audition the DSP-A3090 for yourself. Just call 1-800-4YAMAHA for the dealer nearest you. Or visit us on the web at <http://www.yamaha.com> • Then drive off carrying a 20,000 square foot movie theater. • With the easiest parking in town.

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WHERE HOME THEATER LIVES.



#### The Technology

*The sophisticated micro-circuitry that makes our new Cinema DSP possible is designed and produced exclusively by Yamaha. Our microprocessors apply the vast library of sound field data we've amassed creating products for audio professionals, both on the stage and in the studio. And they're manufactured with the advanced processes we've perfected through years of experience fabricating our own custom chips.*

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Yamaha's flagship DSP-A3090 processor isn't the only way to experience the critically acclaimed realism of Dolby® Digital AC-3™ Surround. Through 1/31/97, you can take home the same kind of excitement—plus big savings—when you add AC-3 to your new Yamaha home theater system. Just buy either of our RX-V2090 or RX-V990 AC-3-ready receivers—add the DDP-1 AC-3 Surround Processor—and get an instant \$100 cash discount. Not to mention a system that will change the way you listen to movies forever. For the dealer nearest you, call 1-800-4 YAMAHA or visit <http://www.yamaha.com>



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lieve the articles by Messrs. Pohlmann, Palenchar, and Kanada went beyond the usual even for STEREO REVIEW in their thoroughness in presenting the landscape of technologies and products we are faced with in DVD. Whoever thought of having these writers put this three-article set together for the October 1996 issue hit the ball out of the park. The articles were clear, concise, and well written and answered many of the questions I had been asking myself for some time.

BRUCE F. WOLLENBERG  
Minnetonka, MN

## The Demise of Dialogue

I can clear up the "Disappearing Dialogue" problem discussed in November's "Audio Q&A." You have only to go to your neighborhood movie theater to discover that dialogue is a lost art in most current films. What is said is often written by a director who, to put it mildly, is no Tom Stoppard, then mumbled by actors who could not project a line if their lives depended on it, and finally buried under a rock soundtrack. The loss is insignificant. Don't bother to try to hear what is being said.

WILLIAM K. SAUNDERS  
San Francisco, CA

## DCC Footnotes

As you said in the response to Kyle Graves's October letter, it is true that Matsushita (Technics/Panasonic) and Radio Shack have dropped their DCC products, but Philips is still selling DCC decks in the U.S. New units are available from Philips/Magnavox outlet stores across the country (customer-service number, 1-800-531-0039) and are periodically available from various mail-order outlets. At this writing J&R Music World (1-800-221-8180) and Radio Shack are both selling first-generation decks at closeout prices.

Blank DCC's are usually hard to find through local record stores, but they are easily available by mail order. J&R has offered tapes from Fuji, Maxell, and Philips, and Fuji tapes are available from Tape World (1-800-328-8273). BASF tapes are available from Tape Warehouse (1-800-659-8273) and Philips tapes through its own stores. Maxell, TDK, and 3M/Scotch have all dropped their DCC products, but BASF and Fuji have said they are going to continue selling DCC's indefinitely, and other brands can sometimes be found.

On the Internet there's the DCC-L mailing list, where current and prospective DCC owners discuss various technical issues and sources for recorders and tapes. Information about the list and archives from it are available on the World Wide Web at [www.lightlink.com/drogers/DCC-L](http://www.lightlink.com/drogers/DCC-L).

With the coming of superior DVD audio, and the improved sonics of MiniDisc, it's clear that DCC is not the recording medium of the future. But the format has a lot of benefits for those who want a durable, inexpensive digital recording medium today. For less than half the cost of a DAT deck, you can buy a DCC deck and enjoy recordings

that are sonically indistinguishable from a CD, with money left over for essentials like food and blank tapes. DAVID D. ROGERS  
Northridge, CA

*Thanks for the additional information, but as far as Philips DCC equipment goes, the company told us that once decks already in the retail pipeline are gone, there won't be any more.*

## Faux Jewel Boxes

Am I the only avid CD collector who objects to the new and increasingly common "Double Decker" type of jewel box? It is not possible with these to follow the simple and safe procedure of placing the box on a flat surface, pressing your forefinger down on the central spindle that holds the disc, and lifting it out by the edges. Instead, you have to twist and turn the disc (usually with little success) and eventually flex it to pry it loose! Returning it to the box is equally difficult if you prefer not to leave fingerprints.

Wouldn't it be more practical to insert the discs in protective sleeves and place those inside some type of box? Sony seems to be attempting to alleviate some of this frustration with the innovative packaging for its Masterworks Heritage vocal series. Why can't other major companies devise a more satisfactory, space-saving package for multiple CD's that still allows for the inclusion of extensive, easily accessible notes? How do other CD collectors feel about this?

TOM ISRAEL  
Lebanon, PA

## Lost in the Dark

Doesn't anybody get tired of black-colored equipment? Don't you know that if you're lucky you may live long enough to need a flashlight to see the controls, especially at night? The readouts may use darling little LED's, but the buttons are cleverly hidden. Operating jet-black audio components is a real pain — never mind trying to plug in cables while reading the embossed black 9-point labels in the back upside down.

Black equipment may look cool, but I'll bet that the first company to offer components in beige, blue, taupe, or whatever — with nice, big, black contrasting letters and numbers — will make a fortune no matter what they sound like.

DON JONES  
Albuquerque, NM

## Corrections

The price of the Sunfire True Subwoofer is \$1,250, not \$1,100 as stated in our December 1996 test report. The photos for the November "Systems" feature were taken by E. Alan McGee, not David W. Lucas. □

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

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*Matthew Polk,  
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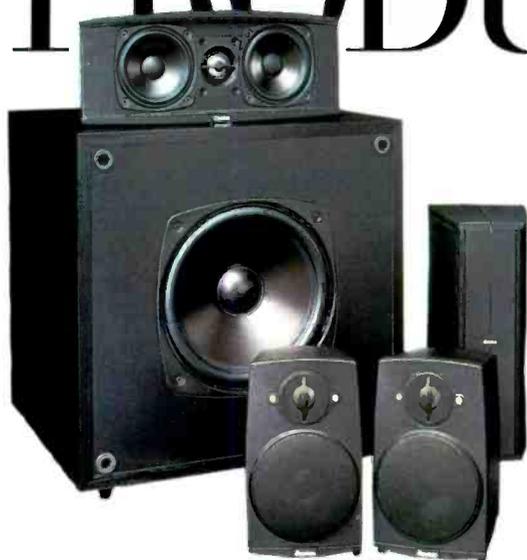
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# NEW PRODUCTS



## ▲ BOSTON ACOUSTICS

Boston Acoustics' four-piece Micro90t home theater speaker system includes two satellites, each with a 3½-inch mid-range and a 1-inch dome tweeter in a 6⅞-inch-tall aluminum cabinet. The center speaker has two 3½-inch midranges and a 1-inch dome tweeter, and the

powered subwoofer has an 8-inch driver and a 75-watt amp in a 15-inch cube. Shown but not included are the VRS dipole surrounds (\$350 a pair). Price: \$1,000. Boston Acoustics, Dept. SR, 300 Jubilee Dr., Peabody, MA 01960; [www.bostonacoustics.com/boston](http://www.bostonacoustics.com/boston).

• Circle 120 on reader service card



## ▲ HARMAN KARDON

Harman Kardon's PT2500 A/V preamp with AM/FM tuner offers Dolby Pro Logic and Dolby 3 Stereo decoding, as well as two other surround modes. It has five audio inputs, four video inputs, and two video monitor outputs,

and with its 5.1-channel preamp outputs it can be mated with an outboard Dolby Digital surround decoder. Price: \$479. Harman Kardon, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797.

• Circle 122 on reader service card

## ▼ AUDIOCONTROL

The THX-certified Bijou home theater equalizer by AudioControl provides eleven bands of ⅓-octave equalization (EQ) for the front left, right, and center channels, twelve bands of ⅓-octave EQ for stereo subwoofers, and eight bands of EQ for each rear surround spaced at ⅔-octave

or full-octave, depending on frequency. The sliders provide ±6 dB of control for each band. A clear Lexan security cover is supplied. Price: \$995. AudioControl, Dept. SR, 22410 70th Ave. W., Mountlake Terrace, WA 98043; [www.audiocontrol.com](http://www.audiocontrol.com).

• Circle 121 on reader service card



## ▼ ONKYO

Onkyo's TX-DS939 flagship A/V receiver has two 24-bit Motorola chips for eighteen surround modes, including Dolby Digital, Home THX Cinema 5.1, and Dolby Pro Logic. Amplifier power is rated at 100 watts to each of five channels; discrete, no-negative-feedback circuits limit

distortion. Inputs for thirteen sources are provided, as is an acoustic analyzer that uses a supplied microphone to automatically match the receiver's output to your listening room. Price: \$2,800. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446; [www.onkyo.co.jp](http://www.onkyo.co.jp).



# NEW PRODUCTS

## ▼ NAD

NAD's AV 711 A/V receiver delivers just 40 watts to the front left, right, and center channels and 20 watts to the rear surrounds, but the amp stages use discrete devices and are said to drive reactive, low-impedance speakers to 115-watt

dynamic peaks. Dolby Pro Logic and Hall modes are provided, as well as four audio and two video inputs and a thirty-preset AM/FM tuner. Price: \$499. NAD, Dept. SR, 89 Doug Brown Way, Holliston, MA 01746.

• Circle 123 on reader service card

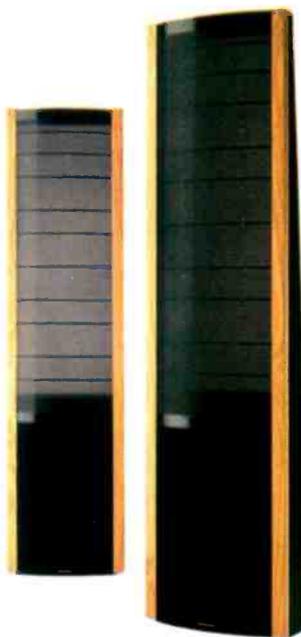


## ▼ MTX

The MTX MP42 speaker is designed for home theater or music applications. Measuring 12 $\frac{5}{8}$  x 4 $\frac{7}{8}$  x 5 inches, each MP42 has two magnetically shielded 4-inch polypropylene woofers with butyl surrounds and a 1/2-inch dome tweeter. The cabinet, available in textured black or white, is made of weatherproof

ABS plastic. Separate cosmetic endcaps are provided for hiding the supplied wall-mount bracket or for bookshelf, center-channel, or floor-stand applications. Bandwidth is given as 110 Hz to 20 kHz. Price: \$90. MTX, Dept. SR, 4545 E. Baseline Rd., Phoenix, AZ 85044.

• Circle 126 on reader service card



## ◀ MARTIN-LOGAN

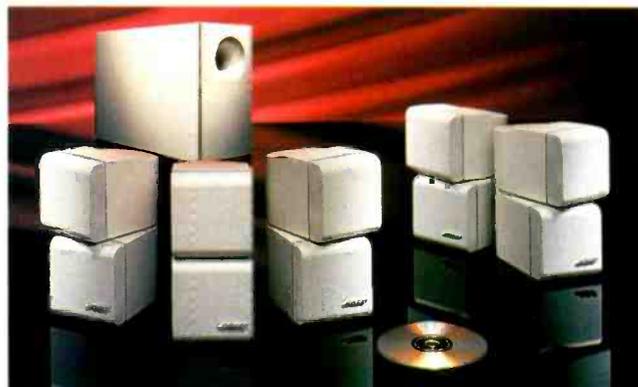
The reQuest from Martin-Logan is an update of the company's Quest speaker. Standing 71 inches tall, the reQuest has a new 12-inch woofer and a new crossover that are said to improve bass resolution while providing a better blend with the speaker's wide-dispersion curvilinear electrostatic transducer. Also new is a slimmer cabinet that occupies just 1 $\frac{1}{2}$  square feet of floor space. Price: \$4,495 a pair. Martin-Logan, Dept. SR, P.O. Box 707, Lawrence, KS 66044.

• Circle 124 on reader service card

## SHURE ▶

Shure has revived its classic V15 phono cartridge as the V15VxMR. It requires only a gram of force (for minimal record wear) and has a dynamic stabilizer that is said to improve tracking. Price: \$300. Shure, Dept. SR, 222 Hartrey Ave., Evanston, IL 60202; phone, 1-800-257-4873.

• Circle 125 on reader service card



## ▲ BOSE

The Acoustimass 10 home theater speaker system from Bose includes five 6 $\frac{1}{4}$ -inch-tall swiveling double-cube satellites plus a bass module measuring 14 x 22 x 7 $\frac{1}{2}$  inches. Each satellite has a pair of 2 $\frac{1}{2}$ -inch drivers, while the bass module houses three 5 $\frac{1}{4}$ -

inch woofers. The cubes are magnetically shielded and feature overload protection. The Acoustimass 10 is available in white or black. Price: \$1,299. Bose, Dept. SR, The Mountain, Framingham, MA 01701-9168.

• Circle 127 on reader service card

▶ **Micro Reference Series**

Big theater sound from small, sculpted satellites.

**Compact Reference Series**

Incredible sound from compact speakers.

**Lynnfield VR Series**

Audiophile sound with the full impact of Dolby® Digital.

**Boston Acoustics THX® System**

Dubbing studio quality sound.

# Audiophiles are getting into metal.



## INTRODUCING THE DIE-CAST ALUMINUM MICRO90 SYSTEM FROM BOSTON ACOUSTICS.

Regardless of your musical leanings, the new Boston Micro90 will alter your view of subwoofer/satellite systems. One reason: The satellites are die-cast from an aluminum alloy, creating a housing of incredible strength and rigidity. So all of the speaker's energy is projected as pure, clean acoustic output instead of being wasted as cabinet vibration. That's how a Micro90 satellite, which fits in the palm of your hand, can fill a room with astonishing sound. Its anodized aluminum tweeter with AMD handles lots of power, yet reproduces highs with virtually zero distortion. And its optional swivel-mount pedestals make for simple shelf or wall mounting. The Micro90's powered subwoofer, with its clean 75-watt amp and 8-inch DCD bass unit, produces enough bass to satisfy fans of both Ozzy and Offenbach. Best of all, the Micro90 is available in a complete home theater package, with a matching die-cast center channel and your choice of direct or diffuse-field surrounds. Hear the Micro90 at your Boston dealer.



This Micro90t Home Theater Package includes: Two die-cast satellites; a die-cast, sonically matched Micro90c center channel; a 75-watt powered subwoofer and a pair of VRS diffuse-field surrounds (available separately).

**Boston**Acoustics

300 Jubilee Drive, Peabody, MA 01960 (508) 538-5000. [www.bostonacoustics.com](http://www.bostonacoustics.com)  
Dolby is a registered trademark of Dolby Laboratories, Inc. THX is a registered trademark of Lucasfilm Ltd.

# NEW PRODUCTS

## ATLANTIC TECHNOLOGY ▶

Atlantic Technology's 162 PBM powered subwoofer packs an 8-inch composite-cone driver and a 75-watt amplifier into a small 10 x 14½ x 12½-inch cabinet. It features a steep 24-dB/octave low-pass crossover that is continuously adjustable from 60 to 150 Hz, and it provides both

speaker- and low-level inputs and outputs for installation flexibility. An automatic on/off circuit is also onboard. Operating bandwidth is given as 20 to 150 Hz. Price: \$299. Atlantic Technology, Dept. SR, 343 Vanderbilt Ave., Norwood, MA 02062.

• Circle 128 on reader service card



## ▼ ALLEGRO

The MBC4035 unified remote from Zenith's Allegro line can control a mix of seven components, including two TV's or VCR's, a cable box, a CD player, a stereo receiver, a satellite system, and a laserdisc player. An auto-find setup feature scans a preprogrammed library for each brand's operating codes. The forty-one Night Vision glow keys absorb and retain light for use in dark rooms. The keypad includes a cluster to operate most on-screen menus. Price: \$30. Allegro by Zenith, Dept. SR, 1000 Milwaukee Ave., Glenview, IL 60025.

• Circle 129 on reader service card

## ▼ ELAN

Elan's Z-660 multichannel distribution amplifier delivers six channels of 60 watts each or up to three channels of 120 watts each for home theater or multiroom systems. It is said to use audiophile-quality components while providing multiroom features such as remote turn-on and so-

phisticated infrared (IR) pass-through functions to allow control of equipment from the remote room. Green and red LED's indicate signal and IR activity and clipping conditions. Price: \$699. Elan, Dept. SR, 2428 Palumbo Dr., Lexington, KY 40509.

• Circle 130 on reader service card



## ▲ M&K

The Bookshelf-75 is a flexible, budget-minded speaker from M&K. The 14½-inch-tall, magnetically shielded cabinet contains a 6½-inch woofer and the same 1-inch soft-dome tweeter used in M&K's more expensive models. A removable plug on the front converts the speaker from a sealed system (for use with a subwoofer) to a vented system (for additional lower-bass output in full-range mode). Low-frequency limit is given as 55 Hz ±3 dB (vented). Finish is black ash. Price: \$450 a pair. M&K, Dept. SR, 10391 Jefferson Blvd., Culver City, CA 90232.

• Circle 131 on reader service card



## ▼ VANTAGE POINT

Vantage Point's Contours A/V furniture is available in three wood finishes or in green or bronze tubular steel with matching glass shelves. The CTAGG401 rack measures 34 x 24 x 18 inches and supports a 27-inch TV. The

CTSG24G speaker stands are 24 inches tall. Price: rack, \$350; stands, \$185 a pair. Vantage Point, distributed by Sonic Integrity, Dept. SR, P.O. Box 3266, Santa Fe Springs, CA 90670.

• Circle 132 on reader service card



# Ace Ventura, Aladdin, Night of the Living Dead. This is serious stuff.

**Micro Reference Series**

Big theater sound from small, sculpted satellites.

▶ **Compact Reference Series**

Incredible sound from compact speakers.

**Lynnfield VR Series**

Audiophile sound with the full impact of Dolby® Digital.

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Dubbing studio quality sound.



## THE BOSTON CR HOME THEATER PACKAGE. A SERIOUS SYSTEM FOR \$999.

If you take your movies seriously, this is for you: the Compact Reference Home Theater Package. It features our much-touted CR7 main speakers. They impressed *Audio* magazine enough to call them "Great Performers." Plus, they said, "[The CR7's] sound is smooth and well balanced, and their bass competes with that of larger speakers." In the center: the CR1 center channel. Its tweeter is identical to the CR7's, and both speakers' bass units are tonally matched. So left/right pans are seamless, tonal balance is smooth and dispersion is broad. For surrounds, choose between our compact, flexible CR6 monitor with swivel-mount bracket or our award-winning CRX diffuse-field surround. Finally, there's the newest CR family addition: the CR400 powered subwoofer. It's a serious subwoofer in a compact package. The CR400's 75-watt amp and 8-inch DCD bass unit produce remarkable bass effects down to 35Hz (-3dB). And it offers volume control, a variable crossover and a polarity switch—features you'd only expect to find in larger, more expensive subs. Test-listen the CR Home Theater Package at your local Boston dealer. You won't hear anything else like it. Seriously.



Our \$999 CR Home Theater Package includes: a pair of CR7 mains, a CR1 center channel speaker, CR6 surrounds with brackets and a CR400 powered subwoofer.

**Boston**Acoustics



## SIGNALS

KEN C. POHLMANN

# The Fall and Rise (and Fall?) of MiniDisc

**C**onsider a blank piece of paper. You can focus your consciousness on its whiteness to achieve a state of Zen bliss. You can fold it into an airplane, a duck, or any other origami shape. More important, you can store things on it. In fact, paper is the greatest storage medium ever invented. Ever since the ancient Egyptians pounded papyrus into paper six-thousand years ago, paper has recorded our greatest thoughts (the texts of the Dead Sea Scrolls) and our most banal (the lyrics for the Beatles' *She Loves You*). It is the ideal low-density storage medium. If you write on it with a pencil, it is erasable and rewritable. If you use a pen, it is write-once. Paper can hold black-and-white or color, and it's good for multimedia, able to hold both text and graphics. Paper is read optically, by viewing the contrast in light reflecting from its surface. As a result, you can read the same words again and again without wearing out the paper. A paper page can be read in detail or quickly scanned. Even a great number of pages allows random access and can be easily bookmarked. Whether it holds something beautiful (the *Mona Lisa*), something profound (the *Declaration of Independence*) or something that fills the blank space between two ads ("Signals"), paper is simply great. Despite technologists' predictions of a paperless society (predictions that are usually printed on paper), I suspect that paper will be around for a long, long time.

Most other storage media and their messages are short-lived in comparison. The graffiti sprayed on subway cars do not last long, and the messages traced by skywriting airplanes quickly dissipate. High-tech digital storage media also seem to come and go with great rapidity. Perhaps that is because they are not made of low-tech paper. Thomas Edison was working with a paper disc recorder (storing telegraphic dots and dashes) when he first conceived of the audio phonograph. He immediately realized that paper wasn't suitable, so he used tin foil instead, and later wax and celluloid. His cylinder endured for about fifty years. Its rival, the

analog disc, now almost 120 years old, endures even to this day. Most other audio media are less lucky. The eight-track tape cartridge, for example, like James Dean, burned brightly but briefly before disappearing.

Some audio storage media never get a toehold at all. When Philips launched the Digital Compact Cassette (DCC) tape format, and Sony launched the MiniDisc (MD) format, both companies hoped that their inventions would replace the analog cassette. Despite very vigorous promotion, for a variety of reasons (perhaps starting with the fact that the new media competed more against each other than against the cassette), neither DCC nor MD fared well, and the analog cassette is still rolling along. DCC has been official-

**DCC has been officially  
pronounced dead,  
but the MD format is still  
clinging to life.**

ly pronounced dead by its maker, but the MD is still clinging to life in a desperate attempt to become more than a footnote in the history of audio storage devices.

There is a lot to like about the MiniDisc. It is small (64-millimeter diameter) and cute. It is both writable and erasable, and it provides both random access and shock-resistant portability. Although it has a 16-bit, 44.1-kHz digital audio data stream, just like a CD's, an MD recorder uses data compression to store 74 minutes of music within its small 140-megabyte capacity. The adequacy of MD's data-compression algorithm was criticized when it was introduced, but in reality the sound quality of even first-generation MD products was pretty good. Subsequently the algorithm was improved, and today most listeners cannot hear a difference between a CD and an MD recording of it, especially in the portable environments where MD is strongest. Whether as a

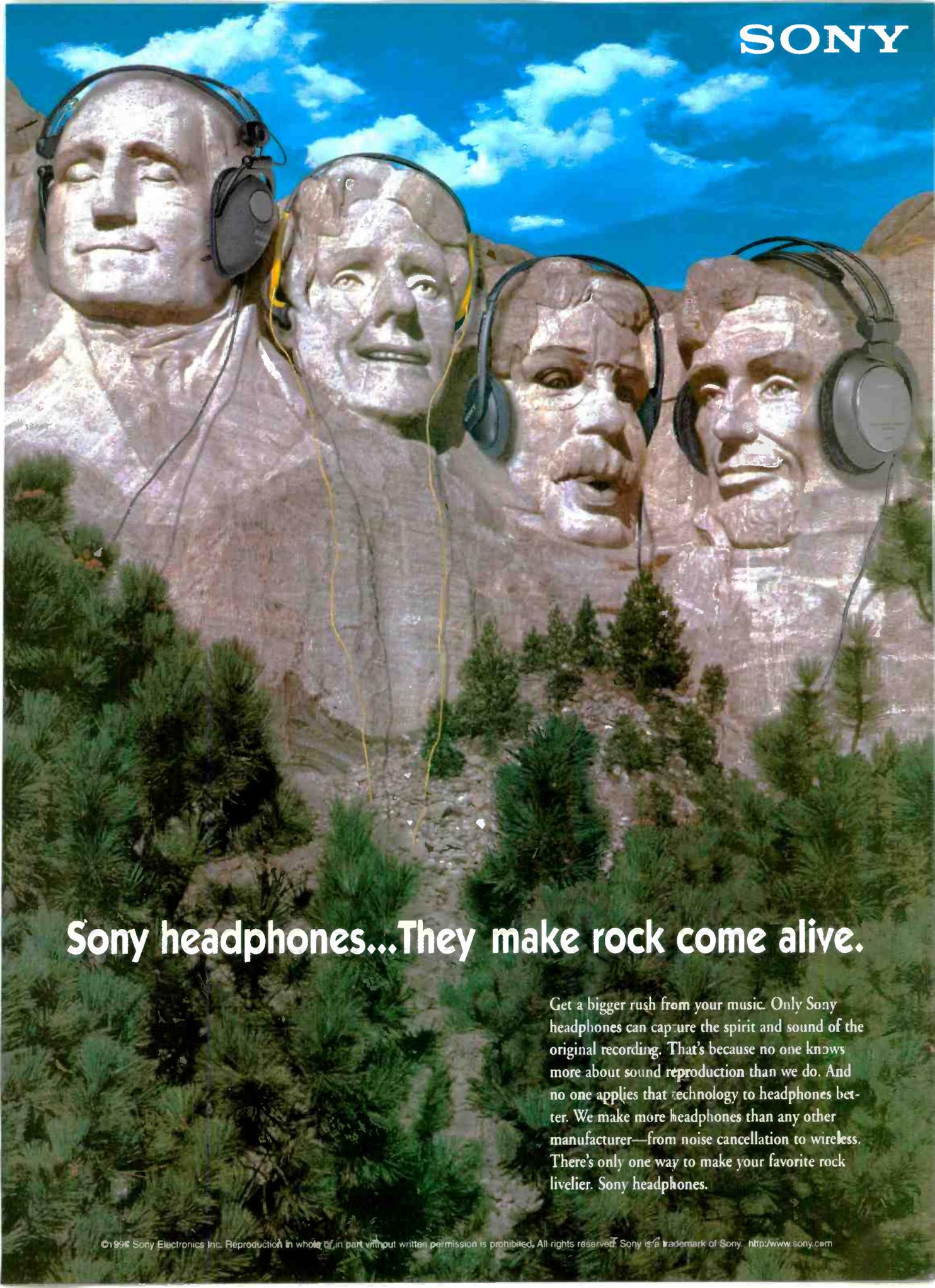
home player/recorder, a car player, or a shirt-pocket player, MD would seem to have good prospects.

At least Sony thinks so. Convinced that MD is far from a lost cause, and heartened by its being a big hit in Japan, Sony is working hard to reawaken the U.S. buying public to the advantages of MiniDisc. The company is running ad campaigns in several metropolitan areas, and it's offering a bundled system comprising a home MD recorder and a portable MD player. Sony believes that the analog cassette is as vulnerable as ever, and with or without record-label support for prerecorded MD's, Sony argues that the MD is exactly what people want and need for convenient digital recording and playback. In particular, with DCC gone, Sony thinks that MD has a clean shot at the analog cassette.

Sony is also encouraged by the DAT-like emergence of MiniDisc in semi-professional "ministudio" applications. These four-track boxes have enough mixing, editing, and storage capabilities that home recordists can produce their own music demos. Ministudios have traditionally used cassette storage, but new MD ministudios were introduced this past fall. Priced at \$1,000 or more, they use MD-data discs (which are incompatible with MD-audio discs) to provide sophisticated editing and track-copying capabilities that far surpass those of cassette-based ministudios.

While there are certainly still signs of life in MD, the question of its life expectancy remains. Although it is not yet successful, it is growing old. Development of the MD began way back in 1986, and it was launched in 1992, when the world was a much simpler place. Now there is a variety of excellent, low-cost, optical media available, with more on the way. After years of delay, including some strategic corporate foot-dragging to give CD-recordable (CD-R) a chance to establish itself in the market, the CD-RW (rewritable) format has been introduced. A CD-RW recorder can record and erase and rerecord its own CD-RW discs, read and record CD-R discs, and read CD-audio and CD-ROM discs. Although initially aimed at computer users, there is no reason (aside from a few copyright concerns) why CD-RW couldn't be used for purely audio applications. In addition, already on the horizon is CD-RW's successor, the high-density, rewritable DVD-RAM format. Its 80-millimeter implementation, holding 5.2 gigabytes of rewritable data, would devastate the MD format.

Clearly, the clock is ticking for MD, just as it ticks for all technologies. Ultimately, no one can predict the fate of the MiniDisc, or that of its current or future rivals, but one thing is certain. We will write their obituaries on paper. □

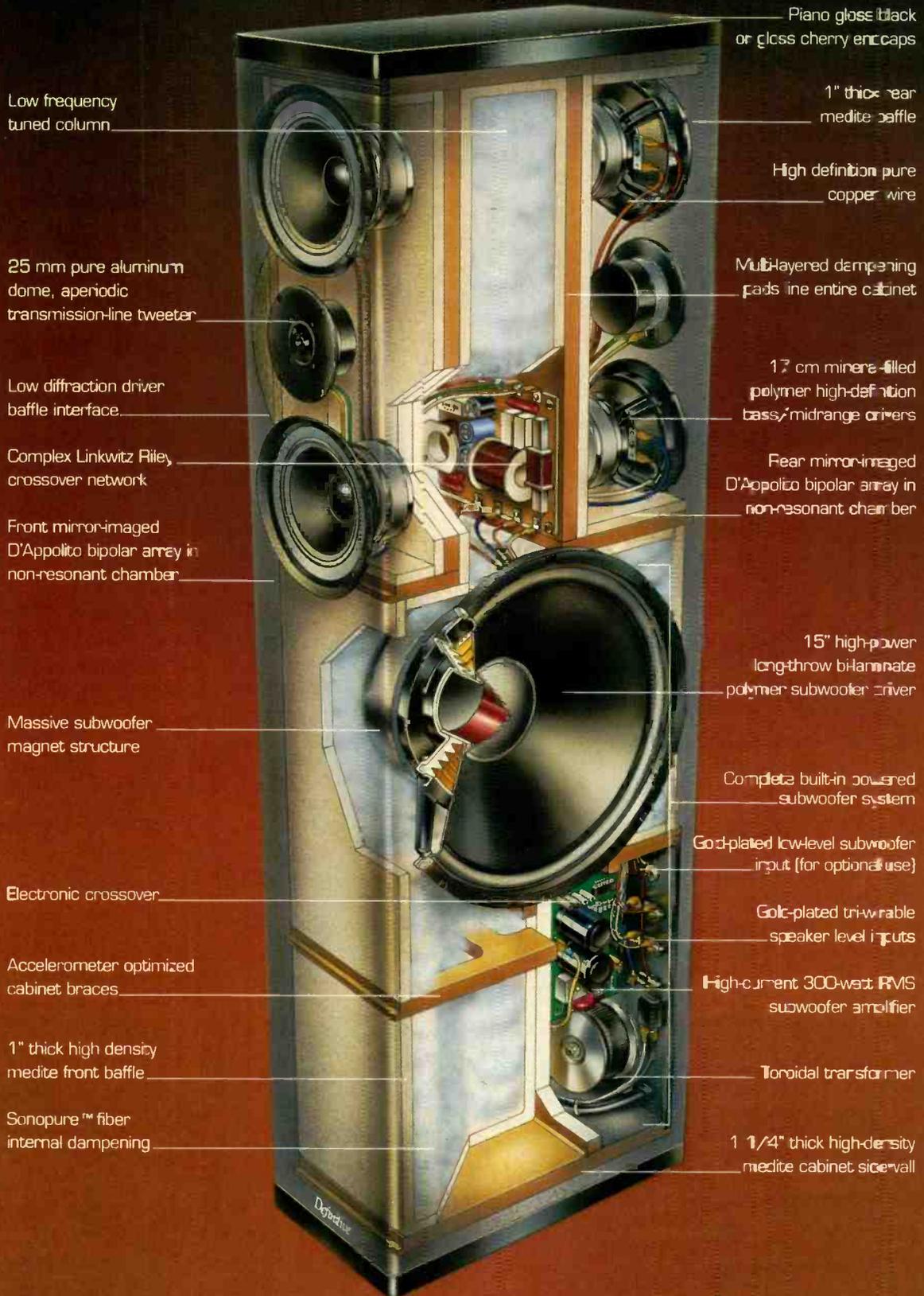


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# Inside Definitive's Revolutionary BP2000



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 encas

1" thick rear medite baffle

High definition pure copper wire

Multilayered dampening 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 bilaminate 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 side wall

**"Definitive's new BP2000 absolutely kills most more-expensive speakers!"**

—Eran Butterworth, *Home Theater Technology*

# Julian Hirsch Says, "...I Would Choose These Speakers for Myself."

*BP2000 is "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..."*

—Julian Hirsch, *Stereo Review*

*"This slammin' system will probably kill any other you've ever heard or seen."*

—Brent Butterworth, *Home Theater*

## Speaker of the Decade

The experts agree: Definitive's BP2000s are an amazing achievement! We have literally reinvented the loudspeaker and combined a six-driver dual D'Appolito bipolar array with a built-in (side-firing) 300-watt powered 15" subwoofer. (Yes, a complete powered subwoofer built into each speaker!) The result is extraordinary sonic performance beyond anything you've ever heard.

Both music and movies are reproduced with unequalled purity, transparency and lifelike realism. And the astounding high resolution imaging and awesome bass impact totally envelop you in sonic ecstasy.



*Definitive's complete AC-3\* ready BP2000 Home Theater System is the perfect choice for ultimate music and movie performance.*

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See our dealer list on page 24

## The Ultimate Home Theater

In addition to being an audiophile's dream, the BP2000s are also the main speakers in Definitive's AC-3\* ready Ultimate Home Theater System. This astonishing system is absolutely the finest sounding available. It recreates a "you are there" spatial reality that actually puts you into the soundspace of the original cinematic action.

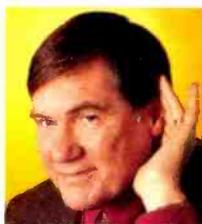
The complete system combines the BP2000s (\$1499 ea.) with a C/L/R 2000 center (\$650 ea.) and BPX bipolar surrounds (from \$399 ea.). Of course, dual 15" powered subwoofers are already built into the sleek BP2000 towers. Truly the ultimate listening experience! Visit your Definitive dealer today.

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- AK- Alaska Audio: Juneau; Pyramid: Anchorage.
- AL- Cohen's Electronics: Montgomery; Kincaid's TV: Tuscaloosa; Likis Audio: Birmingham.
- AR- Custom Audio Video: Little Rock.
- AZ- Jerry's Audio Video: Phoenix, Tucson.
- CA- Access to Music: Larkspur; Acurate AV: S. Lake Tahoe; Audio Concepts: Long Beach; San Gabriel Bay Area Audio: San Jose; Roots Camera: Fresno; Ormather Hansen: West LA; Coast Sale/Idler: Atascadero; Santa Maria; Creative Stereo: Santa Barbara; Ventura; David Rutledge Audio: Palm Desert; DB Audio: Berkeley; Digital Ear: Justin; Dow Stereo Video: San Diego & Suburbs; La Jolla, El Cajon, Chula Vista, Escondido; Leo's Home Theater: Visalia; Monterey Stereo: Monterey; Pacific Coast AV: Newport Beach; Paradyme: Sacramento; Performance Audio: San Francisco; Systems Design: Redondo Beach; Videotek: Westminster; Westchester TV: Bakersfield; Wilson Home Theater: Woodland Hills.
- CO- Audio Visions: Grand Junction; Listen Up: Denver, Boulder, Colorado Springs; Soundtrack: Denver & Suburbs, Boulder, Ft. Collins, Colorado Springs.
- CT- Al Franklin's: Greenwich; Audio Etc.: Orange; Carston's Audio Video: Danbury; Roberts Audio Video: New London; The Sound Room: Westport; Stereo Shop: Hartford.
- DC- Suburbs: Herndon.
- DE- Sound Studio: Newark, Wilmington.
- FL- Absolute Sound; Winter Park; Audio Advisors: West Palm Beach; Audio Center: Deerfield Beach; Audio Video Store: Tallahassee; The Audiohouse: Vero Beach; Cooper for Stereo; Clearwater; Hoyt Stereo: Jacksonville; Palm Audio: Destin; Sound Components: Coral Gables; Sound Ideas: Gainesville; Sound Insight Ft. Pierce; Stereotypes: Daytona Beach; Stuart AV: Stuart.
- GA- Audio Warehouse: Savannah; Laser Disc Enterprises: Atlanta; Merit TV: Columbus; Stereo Connections: Valdosta; Stereo Festival: Atlanta.
- HI- Audio Center: Honolulu, Waipahu.
- IA- Audio King: Cedar Rapids; Des Moines; Archer Audio Video: Ft. Dodge; Audio Video Logic: Des Moines; Audio Visions: Sioux City; Camera Corner: Davenport.
- ID- Ultimate Electronics: Boise; Wise Buy: Idaho Falls.
- IL- United Audio Centers: Chicago & Suburbs; Camera Corner: Bloomington; Good Vibes: Champaign; Jon's Home Ctr.: Quincy; Sound From: Crystal Lake; Sundown AV: Springfield.
- IN- Blue Sky: Evansville; Wayne, Mishawaka; Good Vibes: Lafayette; Kings Great Buys: Ellettsville; Quark Audio: Clarksville; Indianapolis.
- KS- Accent Sound: Overland Park; Advance Audio: Wichita; Audio Junction: Junction City, Manhattan.
- KY- Ovalion Audio: Lexington, Louisville.
- LA- Alterman Audio: New Orleans; Metairie; Lake Charles Music; Lake Charles; Mike's Audio: Baton Rouge; Wright's Sound Gallery: Shreveport.
- MA- Cookin': Chestnut Hill, Saugus; Goodwinds Audio: Boston; Shrewsbury; Nantucket Sound; Hyannis; Northampton Audio; Northampton; Pittsfield Radio; Pittsfield.
- MD- Gramophone: Baltimore; Elliott City; Myer-Emco: Catonsville; Beltsville, Rockville; Soundscape: Baltimore.
- ME- Cookin': Portland.
- MI- Pecar's: Detroit; Troy; Classical Jazz: Holland; Classic Stereo: Kalamazoo; Grand Rapids; Stereo Center FRV: Flint; Court St. Listening Room: Midland, Saginaw.
- MN- Audio King: Minneapolis & Suburbs; Rochester, St. Cloud; Audio Designs: Minnetonka.
- MO- Independence AV; Independence; Reference Audio: Sedalia; Sound Centre: St. Louis.
- MS- Ideal Acoustics: Starkville; McLeiland TV: Hattiesburg; Players AV: Ridgeland.
- MT- Aspen Sound; Missoula; Avitell; Bozeman; Car & Home Stereo Ctr.; Billings; Rocky Mt. HI. FI: Great Falls.
- NC- Audio Video Systems: Charlotte; Audio Visions: Wilmington; Now Audio Video: Durham, Greensboro, Raleigh, Winston Salem; Audio Lab: Wilmington.
- NE- Custom Electronics: Omaha, Lincoln.
- NH- Cookin': Nashua, Manchester, Newton, Salem, S. Nashua.
- NJ- Hal's Stereo: Trenton; Monmouth Stereo; Shrewsbury; Sound Waves; Northfield; Woodbridge Stereo: West Caldwell, Woodbridge.
- NM- Ultimate Ect.: Albuquerque; Sound Ideas: Albuquerque.
- NV- Ultimate Ect.: Las Vegas; Upper Ear: Las Vegas.
- NY- Audio Breakthroughs: Manhasset; Audio Den: Lake Grove; Audio Expressions: Newburgh; Clark Music: Albany, Syracuse; Stereo Exchange: Manhattan; Hart Ect.: Vestal; Innovative Audio: Brooklyn; Listening Room: Scarsdale; Rowe Camera: Rochester; Speaker Shop: Amherst.
- OH- Audio Craft: Akron, Cleveland, Mayfield Hts., Westlake; Audio Etc.: Dayton; Classic Stereo: Lima; Paragon Sound: Toledo; Stereo Visions: Columbus; Threshold Audio: Heath.
- OK- Audio Dimensions: Oklahoma City; Ultimate Electronics: Tulsa; Photo World: Bartlesville.
- OR- Bradford's HiFi: Eugene; Chelsea AV: Portland; Beaverton; Kelly's Home Ctr.; Salem; Magnolia HiFi: Portland; Beaverton; Stereo Plant: Bend.
- PA- Audio Junction: Pittsburgh; Gary's Ect.: State College; GNT Stereo: Lancaster; Hart Ect.: Blakely, Kingston; Hi Fi House: Abington, Broomall, Camp Hill, Harrisburg; Listening Post: Pittsburgh; Palmer Audio: Allentown; Pro Audio: Bloomsburg; Stereo Shoppe: Selingsgrove, Williamsport; StereoLand: Natrona Heights; The Stereshop: Greensburg; Studio One: Erie.
- RI- Stereo Discount Ctr.: Providence.
- SC- AV Design: Charleston; Custom Theater & Audio: Myrtle Beach; Upstairs Audio: Columbia.
- SD- Audio King: Sioux Falls; Sound Pro: Rapid City.
- TN- College HiFi: Chattanooga; Hi Fi Buys: Nashville; Now Audio Video: Knoxville; Modern Music: Memphis; Sound Room: Johnson City.
- TX- Home Entertainment: Dallas, Houston, Plano; Audio Tech: Temple; Waco; Audio Video: College Station; Biorex: San Antonio; High Fidelity: Austin; Crystal Clear: Dallas; Marvin Electronics: Ft. Worth; Sound Quest: El Paso; Sound Systems: Amarillo; Sound Town: Texarkana; JTE Alpine Ect.: Provo; AudioWorks: Salt Lake City; Crazy Bob's: St. George; Stokes Bros.: Logan; Ultimate Ect.: Layton, Murray, Orem, Salt Lake City.
- VA- Myer-Emco: Falls Church, Tyson's Corner; Fairfax; Audio Connection: Virginia Beach; AudioIntros: Roanoke; Home Media Store: Richmond.
- VT- Audio Video Authority: S. Burlington.
- WA- Magnolia HiFi: Seattle & Suburbs; Olympia, Silverdale; Spokane; Aspen Sound: Spokane; Evergreen Audio: Silverdale; Pacific Sight & Sound: Wenatchee; Tin Ear: Kennewick.
- W VA- Sound Post: Princeton.
- WI- Audio Emporium: Milwaukee; Absolute Sound & Vision: Sheboygan; Hi-Fi Heaven: Appleton, Green Bay; Sound World: Wausau.
- WY- Audio Precision Audio: Rio Piedras.
- Canada- A & B Sound: Calgary, Edmonton, Kelowna, Vancouver & Suburbs; Victoria; Advance Electronics: Winnipeg; Bay Floor Radio: Toronto; Digital Dynamics: Clearbrook; Kebecson: Montreal; Lipton's: New Market Ontario; Peak Audio: Halifax; Sound Room: Vancouver; StereoLand: Windsor; Trable Claf: Ottawa.
- Mexico- Contact Grupo Volumen: Mexico City.



**AUDIO Q & A**

**IAN G. MASTERS**

**Double Boom**

**Q** I am planning to add a subwoofer to my system, and an audio dealer told me that I could double the bass if I buy two. Is that true, and does it really matter?

**RONNIE MEROM**  
Briarwood, NY

**A** Strictly speaking, adding a second subwoofer would double the bass, in that twice the acoustic energy would be radiated into your room. But in terms of perception, that would be a maximum increase of only 6 dB — a just-audible difference that could probably be as easily accomplished by tweaking the subwoofer's level control.

The low-frequency waves produced by a subwoofer are, however, the ones most likely to be adversely affected by placement, room dimensions, seating arrangements, and so forth. The virtue of a second subwoofer, if placed in a significantly dissimilar acoustic environment from the first (for example, a corner position, as opposed to out in the room), is that it tends to randomize such effects and smooth out the bass.

Many rooms could benefit from a second sub, but many do not, so the best bet might be to buy one first and evaluate the performance before investing in another.

**Three-Channel Theater?**

**Q** I would like to set up a home-theater system, but my listening room is not really conducive to adding surround speakers. Can I still get good home-theater sound using just two front bookshelf speakers and a center speaker, or is the center useless without surrounds?

**RICK CLEVENGER**  
Indianapolis, IN

**A** Not at all. Obviously, the most dramatic effects will be heard if you have all channels operating, but the folks at Dolby Laboratories knew that this wouldn't always be the case, so they built various optional configurations into the Dolby Pro Logic standard. One is the phantom-center mode, in which no center speaker is used and all the material that a center speaker would normally reproduce remains in the main left and right channels. Alternatively, any Pro Logic decoder can be set up for Dolby 3 Stereo three-channel operation, with the center information extracted as in normal Pro Logic mode and fed to a dedicated speaker but the surround information (which is out of phase and thus somewhat diffuse) reproduced by the left and right speakers.

By using anything less than the full complement of speakers, however, you end up

sacrificing at least one of the two main benefits of Dolby Pro Logic: the sense of depth that the surround speakers impart, and the anchoring of dialogue at a speaker located in the middle of the soundstage (rather than relying on stereo imaging to place the sound in that location). Still, using a center speaker is worthwhile even if you don't get jet planes flying over your head.

**The Splice of Life**

**Q** Like it or not, sometimes speaker wires have to be spliced. I haven't been able to get a satisfactory answer as to the best way to go about it: silver solder, mechanical connectors, or whatever. What's the best method, and will it have any adverse audible consequences?

**STEVE R. HOKE**  
Eagle, ID

**A** About the only method you should definitely avoid is simply twisting the wires together. The main virtue of good speaker wire is thickness, so as long as you make a proper splice, by whatever method, the joint is likely to be fatter than the cables it joins. There should be no audible effects.

Mechanical connections should be as tight as you can make them: when soldering, make sure the connection is hot enough to melt the solder completely so that it flows into the splice. If you don't, you may end up with a cold-solder joint that can fall apart physically or increase noise (although that's more likely to happen with line-level connections). The traditional method is to heat the wire and apply the solder to it; never heat the solder and let it drip onto the cable.

**Super Cassette Decks**

**Q** I use a four-track recorder to make amateur guitar tapes, and I would like to mix these recordings, as well as some of my CD's, to ordinary cassettes. Would a three-head deck have much advantage over a two-head model? What other features should I look for to maximize recording quality?

**DOUGLAS B. WAINEO**  
Canton, MI

**A** In theory, a three-head machine is superior because the demands on heads are different for recording and playing; a three-head deck optimizes each head to its function. In reality, the difference between such a machine and a good two-head deck is very small. What is undeniable, however, is that a three-head deck's ability to monitor off the tape when you're making a recording is a major plus. It allows you to hear prob-

# “You’ll be blown away by the Definitive BP2002 and we *demand* you go hear ‘em!”

—Brent Butterworth, *Home Theater*

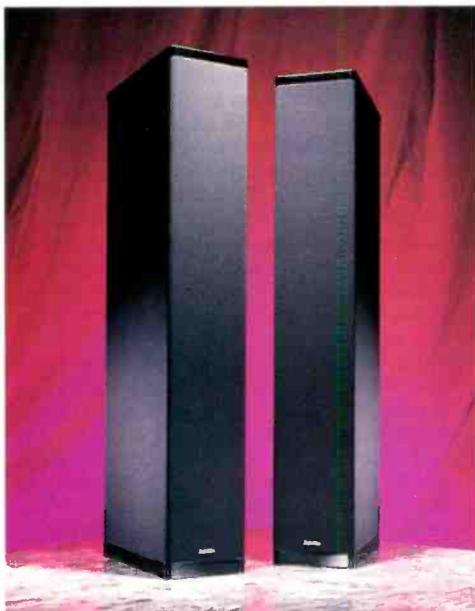
*At \$999 ea., the bipolar BP2002 with dual built-in 125-watt powered 12" subwoofers closely rivals the ultimate performance of Definitive's reference flagship BP2000.*

**“It was literally staggering!”**

—Brent Butterworth

When *Home Theater's* Brent Butterworth raved about the BP2000, “This slammin’ system will probably kill any other you’ve heard,” we were thrilled and honored. In fact, since its introduction last year, Definitive’s top-of-the-line BP2000 has clearly established itself as the most highly reviewed speaker of all time.

Now, Brent agrees that our newest breakthrough, the BP2002, incorporates similar cutting-edge technology and achieves mind-boggling sonic performance which closely rivals that of our flagship BP2000. And most importantly, the BP2002’s significantly lower price and more compact size will now allow many more lucky listeners like yourself to own super speakers of this definitively ultimate quality level.



*You must hear the BP2002 and experience for yourself the mind-boggling sonic performance which drove Brent Butterworth absolutely wild!*

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Whether incorporated in a super audiophile stereo music system or combined with matching CLR2002 center channel (\$499 ea.) and our bipolar rears for a truly remarkable AC-3\* ready home theater system, Definitive’s magnificent BP2002 will definitely blow you away, too!

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# Stereo Review

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lems as they happen — when correcting them is relatively simple — rather than after the whole project is complete. And, in many recorders, having three heads makes it much easier to edit compilation tapes.

At the top of my list of other features is some method of automatically matching the deck to a particular tape, a procedure that should be done every time you make a new tape, regardless of whether you use a different brand or type of cassette. Also, buy the most advanced noise-reduction system you can — Dolby C is the minimum for serious recording, and Dolby S is much, much better. Make sure the deck has HX Pro to avoid bias problems at high frequencies.

Harder to nail down is good speed stability. A closed-loop dual-capstan transport is desirable, but you'll probably have to make your determination by ear. When shopping, take along a CD containing sustained piano notes — the classic flutter-revealer — and try to make a short recording. Then listen for any wavering or sourness of the tones. This exercise will also help you gauge how easy the machine is to actually use. If it turns out to be an operational nightmare, however well it performs technically, you'll hate it forever.

### Muzzle the Announcer!

**Q** *The "sports" mode on my Dolby Pro Logic receiver is great for crowd noises, but it makes the already annoying announcers' voices even more bothersome. I've tried using the Pro Logic mode to reduce or eliminate these voices, but it didn't work. My signal source is the stereo output from my TV; would a stereo VCR work better? How about a graphic equalizer to turn down the talk?* CHRISTOPHER JOHNSON Naperville, IL

**A** Your ability to tone these guys down depends a lot on the signal you're receiving. Most sports programs broadcast the crowd and field sounds in stereo, and because there's lots of random-phase material in such sounds, it usually decodes beautifully using a Pro Logic decoder. Some stations keep the commentators in mono, and these signals are routed by Pro Logic into the center channel where you can effectively delete them with the center-channel level control. On the other hand, if the station broadcasts the announcers in stereo, so that you hear them in the left or right channel, there's not much you can do. And if the broadcaster follows the atrocious practice of stereo synthesis — in which complementary comb filters chop up a mono signal and spread bits to the left and right, giving a spurious sense of width and making everything sound like it takes place in a barrel — anything you do is only likely to make things worse.

I doubt that the stereo decoder in your TV set is at fault, as you seem to be able to decode the crowd noises satisfactorily. (Lots of sets do have minimal decoders, but that usually means a signal that's close to mono, most of which would end up in your center speaker.) Stereo VCR's often do have better decoders, so if you're planning to buy one

anyway you can try it out, but I wouldn't expect much improvement. A graphic equalizer would do nothing to help your problem other than altering the tonal quality of the voices (along with that of everything else).

### This Joint Is Jumpin'

**Q** *The specifications for my front speakers state that they are magnetically shielded, but when I set them up beside my rear-projection TV, about 8 inches to either side, I notice that the picture tends to shake during portions of a movie with a lot of bass. Are the specs incorrect, or am I doing something wrong?* BOB BEDERKA Mesa, AZ

**A** I don't think your problem is inadequate shielding, as that usually results in color impurities rather than picture movement. And I've found that projection TV's are usually less affected by magnetic fields than direct-view sets. It sounds to me as though the strength of your speakers' bass output is actually causing the internal components of your set to vibrate, which makes the picture shake. That effect would be exaggerated if your set turned out to be situated in a room mode where the lowest frequencies are reinforced inside the cabinet. If that's the case, simply moving the speakers a few inches might cure the problem.

### Laserdisc Rot

**Q** *I have been collecting laserdiscs since 1980 and have close to a thousand titles. They are all stored correctly, and most are in perfect condition. On some of my older discs, however, one or both sides show a sort of multicolored "snow" on the surface, and some are now unwatchable. Also, in some discs a rippling effect has set in from the outer edge. Was the manufacturing process really so poor in the early days of the laserdisc? Will there ever be a format that will hold up with the passage of time?*

PATRICK GRUBB  
Gold Hill, OR

**A** Laser rot — the oxidation of a disc's aluminum reflective layer — happens. And LP's warp and tapes get sticky binders. I don't imagine we'll ever come up with a truly bulletproof recording medium.

Nonetheless, although it's very annoying when it happens to one of your own discs, the sort of problem you describe is pretty rare, and it got a lot rarer when manufacturers realized it was a possibility at all. I've been dealing with laserdiscs for many years — although you certainly beat me in the quantity department — and I've seen only one disc with such degradation. Add to that a couple of problematic CD's, and you have a minor disease at best.

**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.**

# “All Definitive’s New Bipolar Towers Deliver Astounding Sound for Music & Movie Perfection”

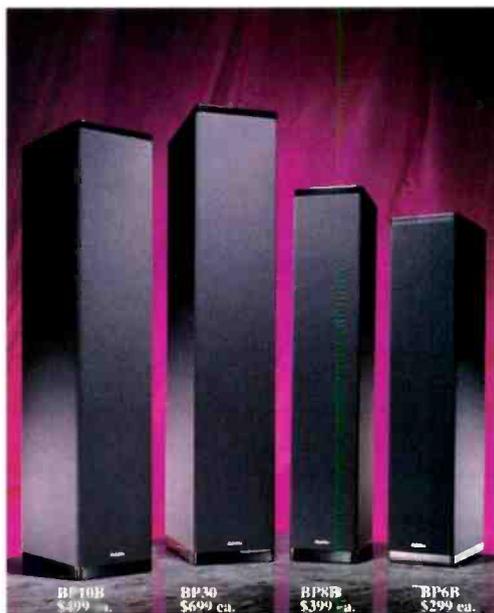
*The extraordinary new BP30, 10B, 8B and 6B (from \$299) now have BP2000 Series technology for dramatically superior sonic performance!*

## “Truly Outstanding”

— *Stereo Review*

Absolute sonic superiority and unexcelled value have made Definitive the leader in high-performance loudspeakers. We are now pleased to introduce a new series of incredible-sounding bipolar towers which incorporate drivers, pure aluminum dome tweeters, crossovers and cabinet technology developed for our flagship BP2000 Series.

These exquisitely styled, American-made, bipolar (front and rear radiating) systems totally envelop you in a symphony of sonic perfection. They combine lush, spacious sound-staging, lifelike depth-of-field, razor-sharp resolution, pinpoint 3-D imaging, powerful subwoofer-quality bass (to below 20 Hz), high efficiency and ultra-wide dynamic range for unsurpassed reproduction of music and movies in your home.



*The breathtaking performance of our award-winning bipolar speakers makes your music and movies really come alive.*

## “Music and Movie Sound was Stunning” — *Video Magazine*

Combine the BP6B, 8B, 10B or 30 with our matching centers, bipolar surrounds and optional PowerField subwoofers for the most lifelike, spectacular “you are there” music and home theater available. All are completely Dolby Digital AC-3\* ready.

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  - *Video Magazine* Product-of-the-Year
  - *Audio Video* Speaker-of-the-Year
  - CES Design & Engineering Awards
  - *Sound & Vision* Critic’s Choice
  - *Inner Ear Report* Editor’s Choice
- You owe it to yourself to hear these remarkable speakers today.

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the thirteenth annual  
**RODRIGUES**  
 cartoon caption  
**CONTEST**

**T**hey're baaAAack, Charles Rodrigues and STEREO REVIEW's annual Cartoon Caption Contest. For the thirteenth straight year our venerable artist Charles the Drole has submitted a provocative drawing without a caption, and the editors of this magazine invite you to enter the contest by submitting witty captions for the cartoon at right.

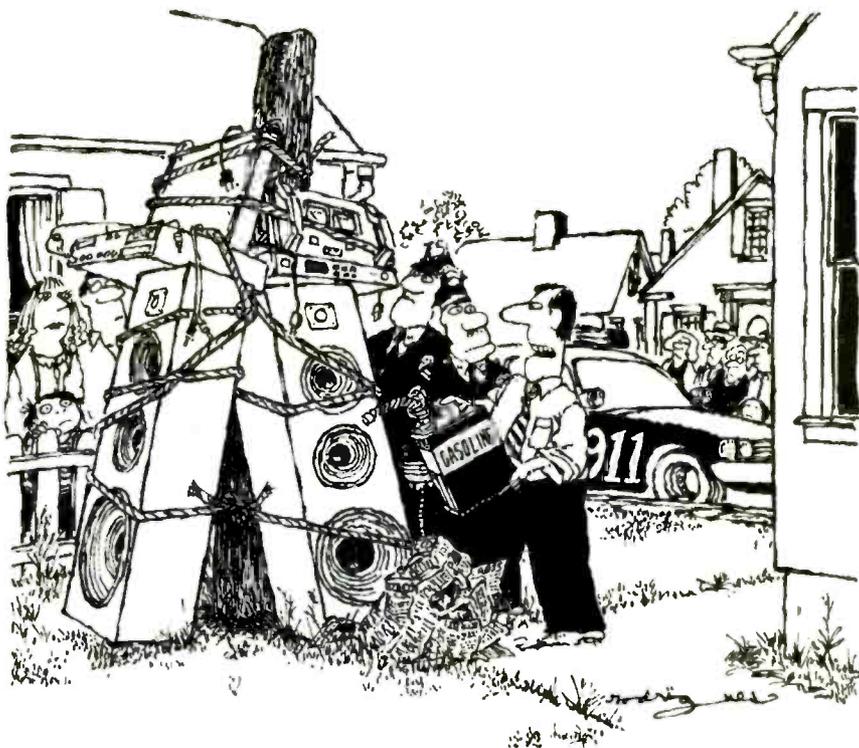
The person who sends in the caption that is judged to be the funniest will win valuable prizes: the signed original Rodrigues drawing, US\$100, and the glory of having his or her name printed with the winning caption when the contest results are announced in the June or July issue.

Anyone may enter, and there is no limit to the number of times you may enter, but each caption submitted must be on a separate sheet of paper that also contains the clearly legible name and address of the person who sends it in. Entries that have more than one caption per sheet will be disqualified. All entries must be received no later than March 1, 1997.

In addition to Charles Rodrigues himself, the distinguished panel of judges will include members of STEREO REVIEW's editorial staff and the winners of the twelve previous contests, ranged carefully across North America from sea to shining sea.

The decision of the judges will be

final, and backtalk will not be tolerated. Enter today! Do not yield to triskaidekaphobia — abnormal fear of the number 13 — but think positively. (Some people think the number 13 brings *good* luck.) It's the thirteenth contest, and 1997 could be your lucky year. All you have to do is look at the cartoon and think up some devastatingly funny way for Audie Audiophile to explain to the fuzz from 911 what he's doing with his equipment. Make it good! Astonish us! □



**send entries to:**

Rodrigues Contest  
 Stereo Review  
 1633 Broadway  
 New York, NY 10019

No purchase is necessary. Anyone may enter except the staff of *Stereo Review* and its parent company (Hachette Filipacchi Magazines, Inc.) and their immediate families. All entries become the property of *Stereo Review*, and none will be returned. If you wish to be notified of the results of the contest by mail, send a stamped self-addressed envelope to the address at left. In the likely event of duplicate entries, the one received first will be considered the winning entry. The names of the winner and a few runners-up will be published in *Stereo Review* and may appear in promotional literature for the magazine. Submitting an entry will be deemed consent for such use.

*Stereo Review* will arrange the delivery of the prize; any tax on it will be the responsibility of the winner.

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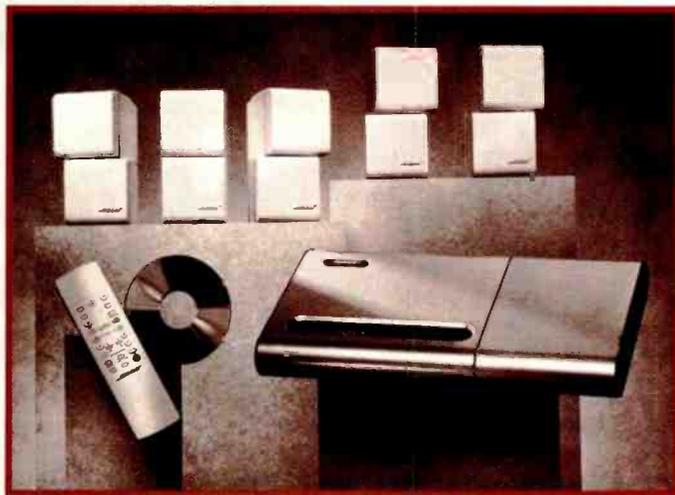
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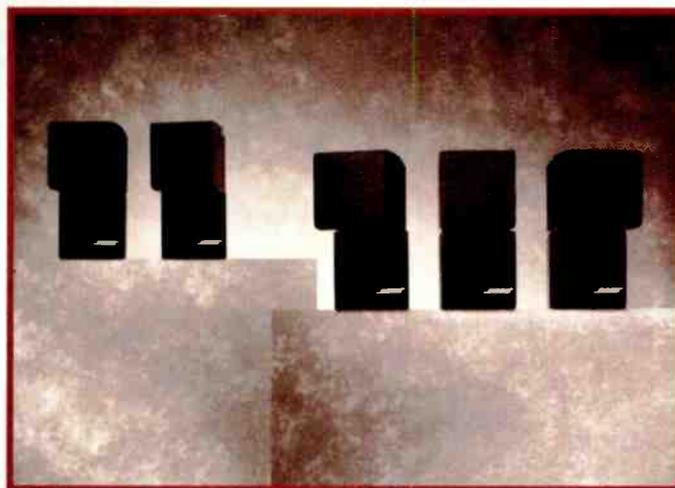
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## TECHNICAL TALK

JULIAN HIRSCH

# Is Home Theater High Fidelity?

**T**he invention of the phonograph more than a century ago made it possible to enjoy music at home under the control of the listener. To be sure, there had always been the option of making your own music, but the choice of repertoire for home performance was usually severely limited. No symphonies in your parlor, for example.

Early electrically recorded (and reproduced) music was a substantial improvement over acoustic discs but rather primitive judged by current standards. Although a few hi-fi pioneers were active in the 1930's, the expansion of a small-scale hobbyist interest into a much broader-based activity did not really get under way until after World War II. The technology of that time was still relatively crude, but the sound quality of home audio components in the 1950's was unmistakably superior to that of the contemporary mass-market products. The quest for ever-better sound quality was the impetus for the growth of a new industry dedicated to providing high-quality reproduced music at home.

As "hi-fi" grew beyond an esoteric hobbyist activity into a burgeoning industry, both audio components and recorded-music formats became more sophisticated. Today the compact disc dominates the recorded-music scene, and it seems likely to continue its dominance for some time to come despite ongoing advances in digital recording technology.

In recent years, home theater has begun to rival traditional high fidelity as a home-entertainment medium. Although based in large part on familiar audio technology, it differs in many ways from a purely audio application. These differences are masked somewhat by the similarity in their basic components and controls.

The most obvious visible differences between an audio ("hi-fi") system and a home-theater ("audio/video," or "A/V") system are the latter's video display and additional speakers (normally five or six instead of two). The electronic components of both systems, though fundamentally quite similar and in some cases interchangeable, have numerous differences in their controls, circuits, and power ratings.

Let me digress slightly from the hard-

ware differences and discuss the goal of each product category. I believe that the ultimate goal of a serious audio system (so far, almost never achieved) is to reproduce music in the home with such fidelity that listeners can close their eyes and believe that they are present in the concert hall. Some people even insist on duplicating the characteristics of the *actual hall* used for the recorded performance, which with today's digital signal processors is not as farfetched a goal as it might seem, although it may be somewhat extravagant.

For a variety of reasons, that level of fidelity can only be approached under special conditions, which are not normally available in the home. Even with the finest system components, true "100-percent concert-hall reality" is presently an impossible dream. On the other hand, with the right combination of recording

**My own ideal for  
a home-theater system  
would include sound  
quality matching that of  
a properly equipped  
commercial theater.**

and playback components it can be approached very closely.

What about home theater? What is its performance goal? I don't know about industry standards for the *subjective* performance of a home-theater system, but my own criteria would include an overall sound quality matching that of the same film playing in a properly equipped and constructed commercial movie theater. Of course, the visual aspects of the program are at least as important as the sound — actually, they are *more* important in my possibly heretical view — but I am not concerned with the visual aspects here.

Some films have little sonic content other than speech and occasional low-level background music and sound effects. Obviously, clarity and intelligibility are paramount requirements (though this rule

is often violated). But judging from the action/adventure demonstration material used at trade shows, for many films a major emphasis is placed on sonic impact and thunderous sound effects. Impressive as these may be, and they certainly *are* impressive, they hardly seem to justify the expense that is so often involved in creating them (I suspect I may be a minority of one in that view). There seems to be a trend toward "larger than life" sound effects, which admittedly attract a viewer's attention or wake him up should that be necessary — or, in extreme cases, drive him from the theater!

Be that as it may, the hardware components for home-theater systems support this characteristic with great effectiveness. Although there are some comparatively simple and moderately priced A/V receivers, many of our recent reviews have focused on large, heavy, and expensive components, often certified to meet Lucasfilm's THX standards, which call for very substantial power ratings, among other things.

An A/V receiver is, by definition, capable of being the central component of either a home-theater installation or a conventional stereo system. If it is acquired for use in a music system, it should be at least as effective as a comparably rated stereo receiver, although some of its additional features may not be applicable to your situation. But you will have the option of later adding some or all of the auxiliary speakers (surround- and center-channel) that can enhance the spatial properties of a music system when properly set up.

In general, A/V receivers have considerable amplifier power for the main speakers, commonly 100 watts or more per channel, and that is a desirable quality for any receiver. For example, it gives you the option of using speakers with lower than average sensitivity that might be difficult to drive to high acoustic levels (should that seem desirable) with a less powerful receiver.

Also, many higher-price A/V receivers, if your budget can accommodate them, provide other useful features, such as digital signal processing (DSP) that can enhance the spatial qualities of any program material. The extra investment for a good A/V receiver can equip you with a more powerful and versatile stereo system that will be upgradable for home-theater use at any later time.

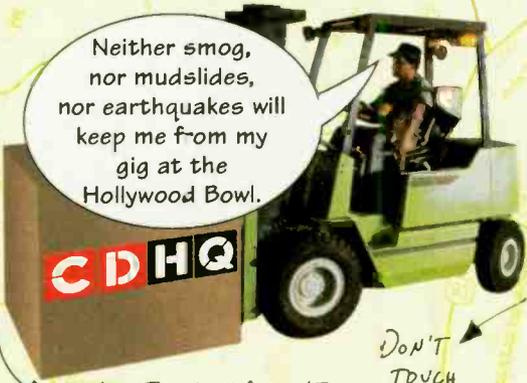
An A/V receiver is essentially a highly versatile and enhanced stereo receiver whose quality depends on its design and, in the final analysis, on the program material that it is called on to reproduce. The question of the relative merits (or flaws) of stereo music and home theater is a totally personal matter. Each medium has its advantages and disadvantages, and the decision is yours. □

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- AC/DC Ballbreaker (eastwest) 13•5830
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- The Black Crowes Shake Your Money Maker (Ampex) 46•2184
- Bon Jovi Cross Road (Greatest Hits) (Mercury) 11•0395
- Bon Jovi These Days (Mercury) 13•0104
- Candlebox (Maverick/Sire/Warner) 48•5185
- Collective Soul (Atlantic) 12•2192
- Collective Soul Hints, Allegations & Things Left Unsaid (Atlantic) 48•1614
- The Very Best Of Elvis 11•8968
- Costello & The Attractions (Rykodisc) 46•6763
- Melissa Etheridge Yes I Am (Island) 14•0954
- Melissa Etheridge Your Little Secret (Island) 14•0160
- Eurythmics Greatest Hits (Arista) 14•8171
- Gin Blossoms Congratulations I'm Sorry (A&M) 11•1351
- The Very Best Of INXS (Atlantic) 13•0203
- Chris Isaak Forever Blue (Reprise) 15•6802
- Joe Jackson Greatest Hits (A&M) 15•6240
- King's X Ear Candy (Atlantic) 15•2173
- Kiss Unplugged (Mercury) 16•0770
- Kiss You Wanted The Best, You Got The Best! (Mercury) 40•3308
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- Jimmy Page & Robert Plant No Quarter (Atlantic) 15•5713
- Pantera The Great Southern Trendkill (eastwest) 16•1828
- Tom Petty & The Heartbreakers Music From "She's The One" (Warner Bros.) 11•0155
- Tom Petty Wildflowers (Warner Bros.) 16•0689
- "Phenomenon" Various Artists (Reprise) 13•9675
- The Police Every Breath You Take, The Classics (A&M) 13•9592
- Pretenders Isle Of View (Warner Bros.) 44•8522
- R.E.M. Automatic For The People (Warner Bros.) 10•3929
- R.E.M. Monster (Warner Bros.) 14•0442
- Kenny Wayne Shepherd Ledbetter Heights (Giant) 15•7966
- Patti Smith Gone Again (Arista) 13•6762
- Squeeze Singles: 45's And Under (A&M) 12•2887
- Billy Squier Greatest Hits (Capitol) 15•5564
- "Twister" Original Soundtrack (Warner Sunset/WB) 35•4449
- U2 The Joshua Tree (Island) 15•1472
- The Verve Pipe Villains (RCA) 43•8010
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- Bad Company 10 From 6 (Atlantic) 34•1313
- Bee Gees Greatest Hits (Polydor) 42•3665/39•3660
- Eric Clapton The Cream Of Eric Clapton (Polydor) 12•1665
- Creedence Clearwater Revival Chronicle—20 Greatest Hits (Fantasy) 30•8049
- Jim Croce Photographs & Memories (Saja/Atlantic) 13•9006
- "Dozed And Confused" Original Soundtrack (Giant) 46•8546
- "Dead Presidents" Original Soundtrack (Capitol) 13•9949
- Best Of The Doobies (Warner Bros.) 29•1278
- Fleetwood Mac Rumours (Warner Bros.) 28•6914
- Peter Dinklage Frampson Comes Alive! (A&M) 26•2311/39•2316
- Marvin Gaye's Greatest Hits (Motown) 36•7565
- "Grease" Original Soundtrack (Polydor) 42•4721
- The Guess Who Track Records (RCA) 12•5070/39•5079
- Jimi Hendrix Band Of Gypsys (Capitol) 12•2598
- Jefferson Starship Gold (RCA) 12•5187
- Elton John Greatest Hits (Polydor) 47•1011
- The Moody Blues Gri. Hits (Polydor) 42•3756
- Van Morrison Moondance (Warner Bros.) 34•9803
- Elvis Presley The Top Ten Hits (RCA) 12•5609/39•5608
- The Righteous Brothers Very Best Of... (Verve) 42•3772
- Rush Chronicles (Mercury) 42•3780/39•3785
- "Saturday Night Fever" Orig. Sndtrk. (Polydor) 14•8551
- The Steve Miller Band Gri. Hits 1974-78 (Capitol) 29•0171
- Styx Greatest Hits: Time Stands Still (A&M) 13•6721
- James Taylor's Greatest Hits (Warner Bros.) 29•1302

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- The Beach Boys Greatest Hits (Capitol) 12•2903
- Coalio It Takes A Thief (Tommy Boy) 12•9627
- The Best Of The Doors (Elektra) 35•7616/39•7612
- Eagles Hotel California (Asylum) 28•6948
- Porno For Pyros Good Gods Urge (Warner Bros.) 15•5929
- Quincy Jones Q's Jook Joint (Warner Bros./Qwest) 13•9485
- Red Hot Chili Peppers One Hot Minute (Warner Bros.) 13•6804
- A Tribe Called Quest Beats, Rhymes And Life (Live) 16•1711
- Van Halen (Warner Bros.) 28•6807
- The Wallflowers Bringing Down The House (Interscope) 16•3477
- War The Best Of War...and More (Avenue Records) 15•8527



## female alternatives

- 10,000 Maniacs MTV Unplugged (Elektra) 46•9775
- Tori Amos Boys For Pele (Atlantic) 14•7090
- Jann Arden Living Under June (A&M) 15•5903
- Björk Post (Elektra) 13•2043
- Tracy Bonham The Burdens Of Being Upright (Island) 15•2157
- The Cranberries No Need To Argue (Island) 11•0478
- The Cranberries To The Faithful Departed (Island) 15•6992
- Sheryl Crow Tuesday Night Music Club (A&M) 47•6531
- PJ Harvey To Bring You My Love (Island) 11•8828
- Sarah McLachlan Fumbling Towards Ecstasy (Arista) 47•3389
- Natalie Merchant Tigertail (Elektra) 13•0971
- Alanis Morissette Jagged Little Pill (Maverick/Reprise) 13•1623
- No Doubt Tragic Kingdom (Trauma Records) 16•3436
- Joan Osborne Relish (Blue Grass/Mercury) 12•6110
- Patti Rothberg Between The 1 And The 9 (EM) 15•3619



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JOCK P. LEUNG

## Carver AV-505 Amplifier and CT-26v A/V Preamp/Tuner

DAVID RANADA • TECHNICAL EDITOR

If you're taking the separates route to home-theater sound, you'd do well to look at two handsome new components from Carver, the CT-26v preamp/tuner and the AV-505 amplifier. They make a well-matched pair that's easy to hook up and easy to use.

The CT-26v is a rather basic A/V preamp/tuner. It contains full Dolby Pro Logic decoding — performed by an analog decoder chip — but it has only two supplemental surround-sound modes, Hall and Studio. Those modes are themselves very simple, as both send a single delayed artificial reflection to the surround speakers, with adjustable level and delay (between 0 and 33 milliseconds). The Hall mode derives a surround signal from the sum of the two input channels, Studio from the difference between the channels.

Available in all three surround modes is an interesting twist that Carver calls Infinite Decorrelation. Activated by a separate front-panel or remote control button, Infinite Decorrelation “processes the rear-channel signal and produces two different signals,

for the left rear and right rear speakers, providing a wider and more realistic sound field.” The otherwise very well-done manual doesn't elaborate on how that is accomplished. It is, in any case, a serious attempt to reduce the deleterious effects of the mono-ness of a Dolby Pro Logic surround-channel signal (insufficient spaciousness and possible in-the-head imaging).

### DIMENSIONS

CT-26v: 19 inches wide, 4 $\frac{1}{8}$  inches high, 13 $\frac{1}{2}$  inches deep with removable handles (17 x 4 x 11 $\frac{1}{2}$  inches without handles or feet)

AV-505: 19 inches wide, 5 $\frac{3}{4}$  inches high, 18 $\frac{3}{4}$  inches deep with removable handles (17 x 5 $\frac{1}{4}$  x 17 $\frac{1}{4}$  inches without handles or feet)

WEIGHT: CT-26v, 12 pounds; AV-505, 42 pounds

PRICE: CT-26v, \$659; AV-505, \$859

MANUFACTURER: Carver Corp., Dept. SR, P.O. Box 1237, Lynnwood, WA 98046-1237; telephone, 1-800-521-4333; <http://www.carver.com>

Beyond these features, the CT-26v is standard fare. It includes a sixteen-preset AM/FM tuner, a motor-driven rotary volume control, and an alpha-numeric fluorescent display window. Its rear panel has RCA input jacks for a moving-magnet phono cartridge, a CD player, and an audio tape deck. A/V connections are provided for a VCR and a DVD/DBS component (these can, of course, also be used for a laserdisc player). Many of the jacks are confusingly arranged, with the recorder inputs separated from their outputs and the video connections for A/V sources (composite-video only) quite distant from their corresponding audio connections. There are six line-level outputs: left/right front, center, left/right surround, and subwoofer (a wideband, unfiltered mono signal). The supplied AM and FM antennas attach to spring connectors, and there are two AC convenience outlets, one switched.

The CT-26v's front panel is simple and virtually self-explanatory. Its large volume-control knob has a small dimple to indicate its position, but it is virtually invisible in a darkened room. A dab of paint may help, as there is no volume indication normally visible in the display window, and there is no on-screen display. Available only on the remote are two memory buttons; each stores a selected input and surround mode together for instant recall.

## TEST REPORTS

The companion AV-505 five-channel power amplifier descends from a long line of Carver power amps, a product category that has been a company specialty since its founding. Accordingly, the manual lists half a page of technical features, far more than we are used to hearing about for a power amplifier. Foremost among these is the Power Steering circuit, which in surround playback causes the AV-505 to "focus a greater portion of the power supply [energy] to the channel demanding the greatest output" when directional cues in the program cause the signal to be "steered" to a specific channel.

Sound-steering occurs only with Dolby Pro Logic decoding, not with Dolby Digital (AC-3) playback, but the same principle holds there, too: Only rarely will high output levels be required from all channels simultaneously, even during the loudest, most spectacular action sequences. Power Steering should cause the maximum output power per channel to increase substantially as the number of channels being driven goes down, and Carver's specs show that it does. In five-channel operation the AV-505 is rated to deliver 80 watts per channel simultaneously into 8-ohm loads. In two-channel operation, the rating is 100 watts per channel.

Hooking up and using the AV-505 is simple as it has few connectors and even fewer controls. On the rear panel are five RCA input jacks and five sets of multiway binding posts for speaker hookup. The latter will take stripped wires and single banana plugs. There are also five small volume-trimming knobs. On the front panel there's a power switch and indicator light. The AV-505's protective relays do not turn on simultaneously, and their multiple mechanical clicks at power-up may initially be disconcerting.

The AV-505's performance, on the other hand, was anything but confusing: It is clearly a solid performer. Our measurements showed that the output power per channel does indeed rise substantially as the number of driven channels is reduced. The amplifier bested its output specifications during a worst-case Dolby Digital test (five channels driven to clipping) and performed just as well in a worst-case Dolby Pro Logic test (with one channel 3 dB louder than the other four). Stereo operation into 4 ohms didn't faze the AV-505 either, as shown by the very high peak power outputs ob-

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— J.B. Keele, Jr., *Audio Magazine*  
*on the Studio/100*

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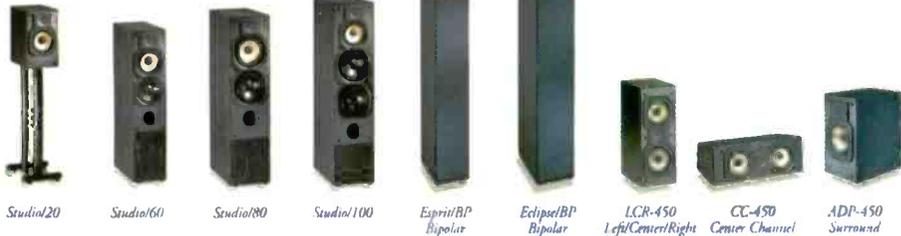
— Andrew Marshall, *Audio Ideas Guide*  
*on the Studio/80, CC-450, ADP-450*

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# TEST REPORTS

tained during the dynamic-power test. Noise and distortion levels were excellent both on the bench and in the listening room. We hooked up the AV-505 to another company's Dolby Digital decoder, popped *Twister* into the laserdisc player, and had a ball.

The CT-26v preamp/tuner performed on a slightly less exalted plane. On the whole, tuner performance was average, and basic preamp performance was good, as was Dolby Pro Logic behavior. We did, however, find a gross miscalibration in the surround-channel Dolby Pro Logic noise-reduction circuit, which can produce a variety of level-related frequency-response errors in the decoded surround channel. Carver has told us that they are tracking down this error in our early production sample. By the time you read this, units in the stores should behave properly.

Disallowing for the surround-channel calibration error, which was only audible as such with pink-noise test tones, the CT-26 sounded fine in listening tests, with very low background noise in all modes. I was especially impressed by the conservative signal processing in the Hall and Studio modes. Unlike more complex ambience-enhancement systems, these modes will never screw up the sound in the front channels. Yet, when adjusted properly, they can produce useful spatial enhancement, especially with acoustic music such as classical and some jazz.

Possibly even more subtle was the effect produced when the Infinite Decorelation circuit was engaged. Our measurements showed that it introduced some phase shifting between the two surround outputs. There was also a small (1-dB) mound in the right-surround response at around 1.2 kHz. I could find no program material where the circuit made as big a difference as it did with the preamp's built-in surround-channel test tone. There was a slight increase in surround spaciousness that varied slightly with listening location. While not nearly as effective as more aggressive decorrelation techniques, Carver's Infinite Decorelation is an interesting and useful — though subtle — enhancement.

Ergonomically, the CT-26 had a few familiar difficulties, mainly involving the remote control. Although its buttons are nicely differentiated by size, shape, and location, the sequential selection of surround mode was as irritating as we have found it to be with

other units. And, despite a week of practice, I kept pushing the Memory 2 button instead of the neighboring laserdisc-input button, a result of the buttons' too-equal spacing and the ambiguousness of the remote's markings. Lastly, the approximately 2-dB steps afforded by the preamp's speaker-balancing facilities are a bit too wide for really accurate results. In this case, the AV-505's continuously variable input-level controls can be used for fine

trimming. Just don't set the preamp and amp on top of each other, or you'll get high levels of hum from the AV-505's massive power transformer.

When used together, the CT-26 and AV-505 produce a fine-sounding basic surround-sound control and amplification system. But there is a clear star among the two components. All by itself, the AV-505 produces, literally and figuratively, enough power to blast many of its rivals out of contention. □

## MEASUREMENTS

### AV-505 PERFORMANCE

<b>SENSITIVITY</b> (volume controls at maximum) to produce full output	1 volt
<b>FREQUENCY RESPONSE</b> (1-watt output) 20 Hz to 20 kHz +0, -0.07 dB	
<b>OUTPUT AT CLIPPING</b> (8 ohms, 1 kHz)	
one channel	141 watts
two channels	124 watts
three channels	112 watts
four channels	105 watts
five channels	98 watts
<b>OUTPUT AT CLIPPING</b> (4 ohms, 1 kHz)	
two channels	187 watts
<b>CLIPPING HEADROOM</b> (re 100-watt stereo rating)	
8 ohms	0.93 dB
<b>DYNAMIC POWER</b> (two channels)	
8 ohms	138 watts
4 ohms	225 watts
<b>DYNAMIC HEADROOM</b> (re 100-watt stereo rating)	
8 ohms	1.39 dB
<b>NOISE</b>	
re 100-watt output	-112.1 dB
re 1-watt output	-92.1 dB
<b>DISTORTION</b> (two channels)	
at rated power (100 watts)	0.007%
at 1-watt	0.01%

### CT-26v DOLBY PRO LOGIC PERFORMANCE

<b>FREQUENCY RESPONSE</b>	
front 20 Hz to 20 kHz +0.28, -1.3 dB	
center 20 Hz to 20 kHz +0, -0.65 dB	
surround 20 Hz to 7.8 kHz +0.4, -3 dB	
<b>NOISE</b> (A-wtd)	
front	-77.4 dB
center	-76.6 dB
surround	-74.1 dB
<b>DISTORTION</b> (THD+N, 1 kHz)	
front	0.021%
center	0.029%
surround	0.26%
<b>SURROUND-DECODER INPUT-OVERLOAD MARGINS</b>	
front (re 2-volt input)	-1.1 dB
center (re 1.4-volt input)	+2 dB
surround (re 1.4-volt input)	+1 dB
<b>SURROUND-CHANNEL NOISE-REDUCTION CALIBRATION ERROR</b> (at 3 kHz; see text)	
re Dolby level (247 mV)	-14 dB
<b>CHANNEL SEPARATION</b> (worst case)	
left output, center driven	>26 dB

### CT-26v STEREO PERFORMANCE

<b>OUTPUT AT CLIPPING</b>	6 volts
<b>DISTORTION</b> (THD+N, 0.5-volt input and output, 1 kHz)	0.003%
<b>INPUT-OVERLOAD LEVEL</b> (re 2-volt input)	
DVD input	+9.4 dB
<b>NOISE</b> (re 0.5-volt output, A-wtd)	
CD (500-mV input)	-91.3 dB
phono (5-mV input)	-72.8 dB
<b>SENSITIVITY</b> (for 0.5-volt output)	
CD/laserdisc	89.23 mV
phono	1.54 mV
<b>RIAA PHONO-EQUALIZATION ERROR</b> (20 Hz to 20 kHz)	+0.24, 1.36 dB
<b>FREQUENCY RESPONSE</b> (tone controls centered)	
20 Hz to 20 kHz +0.3, -1.2 dB	
<b>TONE-CONTROL RANGE</b>	
100 Hz	+11.9, -10.5 dB
10 kHz	+7.8, -9.5 dB

### CT-26v TUNER SECTION

All figures for FM only except frequency response

<b>SENSITIVITY</b> (50-dB quieting)	
mono	26 dBf
stereo	27 dBf
<b>NOISE</b> (A-wtd, at 65 dBf)	
mono	-76 dB
stereo	-69 dB
<b>DISTORTION</b> (THD+N at 65 dBf)	
mono	0.4%
stereo	0.2%
<b>CAPTURE RATIO</b> (at 65 dBf)	1.5 dB
<b>AM REJECTION</b>	70 dB
<b>SELECTIVITY</b>	
alternate-channel	71 dB
adjacent-channel	8 dB
<b>PILOT-CARRIER LEAKAGE</b>	
19 and 38 kHz	-65 dB
<b>HUM</b>	-72 dB
<b>CHANNEL SEPARATION</b>	
100 Hz	38 dB
1 kHz	40 dB
10 kHz	37 dB
<b>FREQUENCY RESPONSE</b>	
FM 300 Hz to 15 kHz +0.1, -6 dB	
AM 50 Hz to 3.3 kHz +0.2, -6 dB	

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# “Excellent...First-Rate... Gut-Wrenching Bass...Henry Kloss Has Not Lost His Touch.”

*Stereo Review, Dec. 1996*

*Cambridge SoundWorks' new Tower series speakers combine musical accuracy, very natural tonal balance, precise stereo imaging and an incredibly dynamic presence – all without reinventing the laws of physics.*

In 1988, we changed the way people bought loudspeakers when we introduced our *Ensemble*® subwoofer/satellite speaker system by Henry Kloss (founder of AR, KLH & Advent) – selling it factory-direct, with no expensive middlemen.

In 1996, we're changing things again...by introducing a series of ultra-high-performance speakers by Henry Kloss – selling them factory-direct, with no expensive middlemen.

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Unlike many companies in the ultra-high-performance category, we do not claim to have based our design on some amazing scientific breakthrough.

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on years of experience, using the best materials available today. But we aren't obsessed with materials. We're obsessed with sound.

Our new *Tower*™ series features the wide range, precise stereo imaging and natural tonal balance of our acclaimed *Ensemble* systems – and adds subtle-but-noticeable improvements in efficiency, dynamic range and “presence.”

---

*“Tower II can generate gut-wrenching bass and do justice to a first-rate music system. To top it off, the price is right.”*

*Stereo Review*

---

## Introducing *Tower III*™ By Henry Kloss.

*Tower III is the most affordable high-performance floor-standing speaker we know of. Black ash vinyl finish. Factory-direct price: \$599 pr.*



The result is somewhat unusual – speakers that combine the dynamic presence normally associated with high-efficiency studio monitors, and the precise musical accuracy and pinpoint imaging of low-efficiency “reference” speakers.

With our *Tower* speakers, you get goose bumps and precise musical accuracy.

## *Tower III* by Henry Kloss™

*Tower III* is a two-way design using a wide-dispersion tweeter and a single 8" woofer very similar to those used in *Tower* and *Tower II*. Like the more expensive models in the *Tower* series, it combines high sensitivity and outstanding dynamic range with the natural, wide-range sound (including extended deep bass) that results from a generously-proportioned cabinet. It has been meticulously “voiced” by Henry Kloss for superb octave-to-octave tonal balance and precise stereo imaging. Its comparatively high sensitivity makes it ideal for use with moderately powered amplifiers and receivers, while its robust construction makes it suitable for use with the most powerful amplifiers designed for home use. These benefits have been realized at significantly lower cost than other, superficially similar models through a combination of

Henry Kloss' unique speaker design expertise, plus Cambridge SoundWorks' highly efficient direct-to-the-consumer sales policy. *Tower III* is the most affordable high-performance tower speaker we know of.

Like other models in the series, *Tower III* features removable black grilles and fully-finished cabinets (front and rear), to permit operation without grilles in place. It also includes gold-plated binding posts. Magnetically shielded, *Tower III* is ideal for use in the best home theater systems. Finished in black ash vinyl. **Factory-direct price: \$599 pr.**

### *Tower II* by Henry Kloss™

*Tower II* is a three-way system that is substantially larger than *Tower III*. It features two 8" woofers, a 5 1/4" midrange driver, and a 1" soft-dome fabric tweeter.



*Tower II*

The large cone area of *Tower II*'s multiple drivers contributes to an "effortless" sound quality, giving music a strong feeling of dynamic "presence" that is easier to hear than to describe. That high-impact presence, together with *Tower II*'s smooth, musical octave-to-octave tonal balance and precise stereo imaging, produces what we think is the finest speaker system ever offered for under \$1,000.

*Tower II* is finished in vinyl that simulates black ash or Vermont walnut. It is bi-wire/bi-amp capable and features gold-plated binding posts. **Factory-direct price: \$999 pr.**



*CenterStage*



*Tower*

### *Tower* by Henry Kloss™

The flagship of our new series is a three-way, bipolar model named *Tower* by Henry Kloss. The bipolar dispersion pattern helps eliminate the usual "point source" effect of direct-radiator speakers – and ensures a proper stereo effect at the widest variety of listening positions.

*Tower* features two forward-facing 8" woofers; a forward-facing 5 1/4" midrange driver; a 1" soft-dome fabric tweeter; and separate rearward-facing midrange and tweeter units identical to those used in front.

Because it has even more cone area, *Tower*'s feeling of "presence" is, if anything, stronger than that of *Tower II*. That presence, when combined with the three-dimensional sound of *Tower*'s bipolar design,

and its smooth octave-to-octave tonal balance, results in sound that's nothing short of incredible. It's *spectacularly realistic*. Available in lacquered walnut or black ash veneers, we believe that *Tower* is one of the finest speakers ever offered. It is bi-wire/bi-amp capable and features gold-plated binding posts. **Factory-direct price: \$1,499 pr.**

### *CenterStage* by Henry Kloss™

Complementing the new *Tower* models is *CenterStage*, a two-way, three-driver center channel speaker for use in home theater systems. With its two 5 1/4" bass/midrange drivers and 1" soft dome tweeter, *CenterStage* perfectly matches the tonal balance

of all three *Tower* models. Bass reach of the system is significantly greater than most center channel speakers, thanks to its dual-vent enclosure. The dynamic range of the drivers is enough to handle the most demanding of video soundtracks, while their dispersion is broad enough to include all listening positions. It is finished in black vinyl.

**Factory-direct price: \$349.**

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## TEST REPORTS



LOOK & LISTEN

# Polk Audio RT20P Speaker

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Last January, David Ranada reported in these pages on a new flagship speaker system from Polk Audio. The Signature Reference Theater (SRT) system was as imposing as its name suggests, with size, weight, performance specifications, and price tag to match.

Polk's new RT20P loudspeaker uses some of the proprietary technologies originally developed for the SRT system. The design goal was to create a speaker that offers "the most attractive attributes of small and large loudspeakers in a single system." As Polk notes, small speakers often offer superior definition, focus, and imaging, while large tower speakers usually excel in dynamic range and deep-bass extension. Therefore, the company set out to develop an affordable system combining the best qualities of both

types in a single unit, able to handle the demands of music and video sources equally well and small enough to fit into most homes without clashing with the decor.

The result of this effort is the RT20P, a three-way column speaker that's neither overwhelmingly large nor heavy, though still quite visible in most rooms and not likely to be

**DIMENSIONS:** 9½ inches wide, 46¼ inches high, 14¾ inches deep

**WEIGHT:** 72 pounds

**FINISH:** black woodgrain vinyl

**PRICE:** \$2,199 a pair

**MANUFACTURER:** Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215; telephone, 1-800-377-7655; <http://www.polkaudio.com>

moved about casually. The middle- and high-frequency drivers are housed in a sealed, rigid subenclosure near the top of the cabinet. It contains a 1-inch trilaminate dome tweeter (a top-of-the-line Polk driver) and a 6½-inch cone driver. Two forward-facing 8-inch cone woofers, one above the other, are positioned near the bottom of the cabinet along with an active crossover and a dedicated 100-watt amplifier, making up the speaker's powered subwoofer section. The bass is vented through a downward-facing 4-inch-diameter duct, called the Power Port, at the bottom of the enclosure.

The Power Port terminates in a tapered structure designed to minimize turbulence and noise from the considerable air flow that the subwoofer section can generate. Four feet support the entire speaker cabinet about 2 inches above the floor plate; the slot-like opening at the bottom makes the bass section's output omnidirectional in the horizontal plane. A sturdy, removable black cloth grille on a rigid wooden frame covers the entire front of the speaker above the 2-inch subwoofer slot.

At the bottom of the cabinet in the rear are the controls for the speaker's powered subwoofer as well as all the signal input and output connectors. Two pairs of insulated binding posts, compatible with stripped wires and single or dual banana plugs, accept a speaker-level signal input. Labeled Subwoofer and Speaker, the terminal pairs are joined by gold-plated straps that can be removed to provide direct access to the higher-frequency drivers. Such an arrangement would apply to setups in which the powered subwoofer section is fed via the pair of Subwoofer Line Level phono jacks below.

A knob provides smooth control of the subwoofer section's level relative to the higher-frequency drivers. A small slide switch allows the subwoofer either to be switched on automatically by the presence of a signal or to be switched off entirely. A red LED on the rear panel indicates that the speaker is connected to a live AC outlet (whether or not the system is active).

Polk rates the RT20P system's frequency response as 35 Hz to 20 kHz -3 dB. Sensitivity is given as 89 dB sound-pressure level (SPL) at 1 meter with a 1-watt input. The speaker is said to be compatible with 8-ohm outputs and is recommended for use with amplifiers rated for up to 300 watts per channel.

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# TEST REPORTS

We placed a pair of RT20P speakers at the front of the room, 8 feet apart and 3 feet from the wall behind them. As in all our full-range speaker tests, we measured the smoothed and averaged room response of both speakers with the microphone 12 feet in front of the left speaker (the subwoofer level controls of both speakers were set to their middle positions). The averaged frequency response of the pair of speakers was better than  $\pm 3$  dB from 50 Hz to 20 kHz, excellent performance indeed. Even more striking was the bass response, which rose below 50 Hz to a maximum of +8 dB at 30 Hz and remained above the 50-Hz level all the way down to 20 Hz.

That effect was due in large measure to the resonant modes of our room and is not indicative of the actual response of the system, although it does show that the speaker is fully functional down to 20 Hz, no small achievement in itself. I cannot recall experiencing such a deep bass response in the same room, under similar measurement conditions, from another full-range speaker system comparable in size and price to the RT20P. The system sensitivity came in above Polk's 89-dB rating, measuring a very good 92 dB SPL at 1 meter with 2.83 volts of pink noise (equivalent to 1 watt input).

The Polk tweeter's frequency response and horizontal dispersion (over a  $\pm 45$ -degree angle) were excellent. The close-miked and smoothed re-



sponse variation 12 inches from the tweeter and midrange drivers was only +5, -2 dB from 30 Hz to 20 kHz on the tweeter's axis. At 45 degrees off-axis the high frequencies fell off moderately, to -3 dB at 15 kHz and -10 dB at 20 kHz.

The bass response, combining the cone and Power Port outputs, measured  $\pm 3.5$  dB from 20 to 75 Hz. Subwoofer distortion, measured 1 foot from the lower woofer, was between 1 and 2 percent from 100 Hz down to 35 Hz, rising to 3 percent at 30 Hz and 6 percent at 25 Hz. Those readings are quite good for a subwoofer, and in listening to the stepped frequency signal from our Audio Precision test system

we definitely experienced the ear-popping and skin-tingling sensations that go with a healthy bass output in the under-35-Hz range.

Earlier in this report we referred to proprietary Polk technologies used in the RT20P. The Power Port has already been described. A short description of two other trademarks, Dynamic Balance and High Velocity Compression Drive, may help explain their significance in the design of this speaker system.

Dynamic Balance refers to a laser-interferometer system that reveals the microscopic details of vibrating surfaces such as speaker cones and cabinet walls. It helps the designer to see and understand the resonances that occur on moving speaker cones.

The High Velocity Compression Drive combines a high moving mass and very powerful magnet structures to produce vented woofer systems that are said to achieve an optimal balance of speed, efficiency, size, and bass extension. According to Polk, the RT20P is the first application of this combination to a vented direct radiator, and judging from our experience, it seems to be quite effective.

The sum of these features, and more, has resulted in an externally conventional but internally novel speaker system whose performance speaks eloquently of the effort and ingenuity that went into its creation.

Fortunately, following the testing of the Polk RT20P, I was able to listen to it at greater length than usual. This opportunity was especially welcome, for the RT20P is not "just another speaker." Its upper portion is a first-rate compact two-way system that would rank high in that category, and the sound was surprisingly balanced and natural even when the subwoofers were not plugged into a power line. With all of the drivers in operation, the system retained its balanced character, and the subwoofer section filled in the bottom octaves seamlessly (and, when properly adjusted, extended effortlessly to the lowest audible frequencies).

This system is part of a very limited (but growing) category of column speakers with built-in subwoofers. All of those I have tested so far have proved to be top-grade performers at their respective price points, and Polk's entry ranks among the best. You should hear it for yourself if your budget justifies it — or even if it doesn't, for the experience. □



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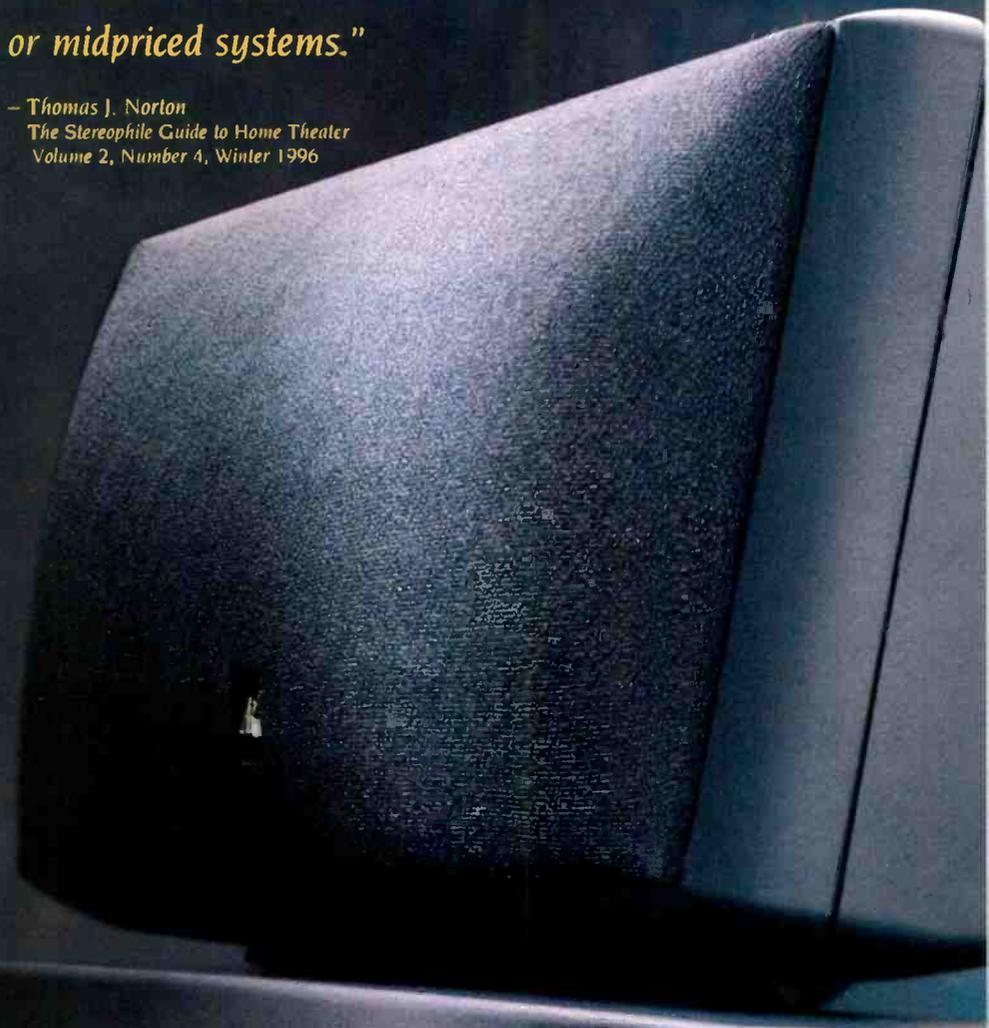


For starters, the CS 25 HO has a compact, soft-grip base that fits comfortably atop any TV and doubles as a wall mount bracket with built-in swivel adjustment. The magnetically shielded Focused Array Driver Configuration delivers spacious sound, crisp dialog, and dynamic musical reproduction at any position, with no interference to your system's video signal. Best of all, thanks to AR's commitment to value, you'll enjoy audiophile performance and the ultra high efficiency that the CS 25 HO stats of 94dB @ 2.82 volts / meter will deliver...and still have money left over for the popcorn.

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*- Thomas J. Norton  
The Stereophile Guide to Home Theater  
Volume 2, Number 4, Winter 1996*



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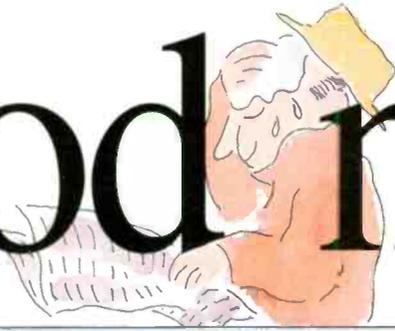
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JOCK P. LEUNG

## Velodyne VA-1210 Powered Subwoofer

**JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES**

**V**elodyne's VA-1210 powered subwoofer incorporates a number of features designed to simplify adding one or more bass octaves to the lower range of a stereo music system or a home theater. The roughly cubical cabinet contains a 100-watt Class AB amplifier, a husky 10-inch forward-firing driver (with a 55-ounce magnet and a 2-inch voice coil) on one of its sides, and a 12-inch downward-firing passive radiator on its bottom. The four 2-inch supporting feet provide adequate spacing from the floor even if the subwoofer is on a carpet or rug.

The rear panel of the VA-1210 contains two knob-operated controls. A calibrated knob continuously varies the low-pass crossover frequency (the point at which the upper range of the subwoofer's output begins to roll off) between 40 and 120 Hz. The crossover slope is 6 dB per octave, with an ultimate attenuation of 24 dB. The second knob is a volume control with arbitrary markings from 0 to 10. A high-pass switch selects either 80- or 100-Hz filtering (at 6 dB per octave) for the main speakers. The 100-Hz setting can be used when the main speakers

have a limited bass response, but in general it is preferable to cross over to the subwoofer at the lower frequency.

The control panel also contains three small toggle switches. One bypasses the low-pass crossover so that the user can add an external crossover with operating parameters different from those of the built-in system. The second bypasses the VA-1210's normal Auto Power On operating mode, which switches it on whenever a signal is present. When the toggle is thrown to Power and the main power switch is on, the speaker is powered whenever the music system is operating, regardless of the program level or content. The third toggle switch introduces a 180-degree phase reversal in the subwoofer's output. In some sys-

tems the phase reversal produces a more natural-sounding blend between the subwoofer and the main speakers.

The VA-1210 has two stereo sets of signal inputs and outputs, although its own output is monophonic (the low-bass range of both channels is combined into a single signal). A pair of left and right phono jacks can be used to drive it from a preamplifier, a signal processor, or another line-level component. Alternatively, the VA-1210 can be connected directly to the speaker outputs of the system's power amplifier (or receiver) through a set of insulated binding posts. The output terminals of the subwoofer then loop the high-pass-filtered signals back to the main system's left and right speakers. All control functions of the subwoofer are usable with either set of inputs.

The main signal terminals of the subwoofer are four pairs of insulated binding posts, identified as left and right inputs and outputs. These receive the speaker outputs of the system's power amplifier (or receiver), which as noted above are summed to form a mono signal that drives the subwoofer's amplifier. The binding posts accept only stripped wire ends or large open lugs (no banana plugs).

The instruction booklet with the VA-1210 is complete and well illustrated. It covers all aspects of the installation and use of the subwoofer with any stereo pair of main speakers. This includes a reminder that, as with any speaker, the VA-1210's frequency response and output level can be dramatically influenced by its placement in the listening room and that it will sound louder when placed next to a wall or in a corner.

Velodyne also points out that although the speaker is magnetically shielded to minimize its effect on a video display, it is advisable to keep it away from a video monitor or TV set for best picture quality. In any case, our gaussmeter showed virtually no external field (less than 1 gauss) on any part of the subwoofer's exterior except close to the speaker cone. It seems unlikely that it would affect a video display in any practical setup.

We measured the subwoofer's frequency response with various combinations of its control settings. Its response rating of 35 to 200 Hz  $\pm$ 3 dB seems to be quite conservative. With two microphones close to the woofer and passive radiator, the response measured  $\pm$ 1 dB from 35 to 70 Hz with one control combination and  $\pm$ 3.5

**DIMENSIONS:** 17½ inches wide, 17¼ inches high, 17¼ inches deep

**WEIGHT:** 56 pounds

**FINISH:** black (removable black cloth grille)

**PRICE:** \$799

**MANUFACTURER:** Velodyne, Dept. SR, 1070 Commerce St., Suite 101, San Jose, CA 95112; telephone, 408-436-7270

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CIRCLE NO. 11 ON READER SERVICE CARD

## TEST REPORTS

dB from 28 Hz to 90 Hz with another. Of course, these readings and control settings are arbitrary and merely indicate the approximate range of our measurements. In actual use, the controls are (or should be) adjusted largely by ear to obtain the most pleasing results.

Velodyne provided no distortion specifications for the subwoofer. We measured distortion close to the VA-1210's driven cone while it played at a very healthy level. Just below the clip-

ping point (which varied slightly with frequency), the distortion was a low 2 to 3 percent from 32 to 120 Hz, rising smoothly above 120 Hz. Distortion also rose slightly in the low frequencies, to 6 percent at 30 Hz.

Setting up the Velodyne VA-1210 in a music system for listening tests disclosed a couple of annoying ergonomic "bugs." The binding-post connectors are spaced too close for comfort, and the left-channel posts are barely accessible, being located so close to the amplifier's heat-sink fins that it

was necessary to tip the subwoofer on its side to read their markings (I had to exercise some care to avoid being nicked by the metal fins). Surely the heat sink and the left-channel terminals could have been relocated an inch or two away from each other.

Happily, once the connections were made the VA-1210 worked perfectly. It delivered room-shaking bass (when required) and dramatically demonstrated the effectiveness of a single subwoofer placed to one side of the room. The VA-1210 is large enough to be highly visible in most installations, but it was almost impossible to sense any directional cues in its output, and completely impossible in the 30-Hz region, where it delivered a potent output.

There are quite a few very good powered subwoofers to choose from these days. Aside from its very satisfying performance, the Velodyne VA-1210 is priced lower than many comparable models, and I suspect few people would find it lacking in any significant respect. □



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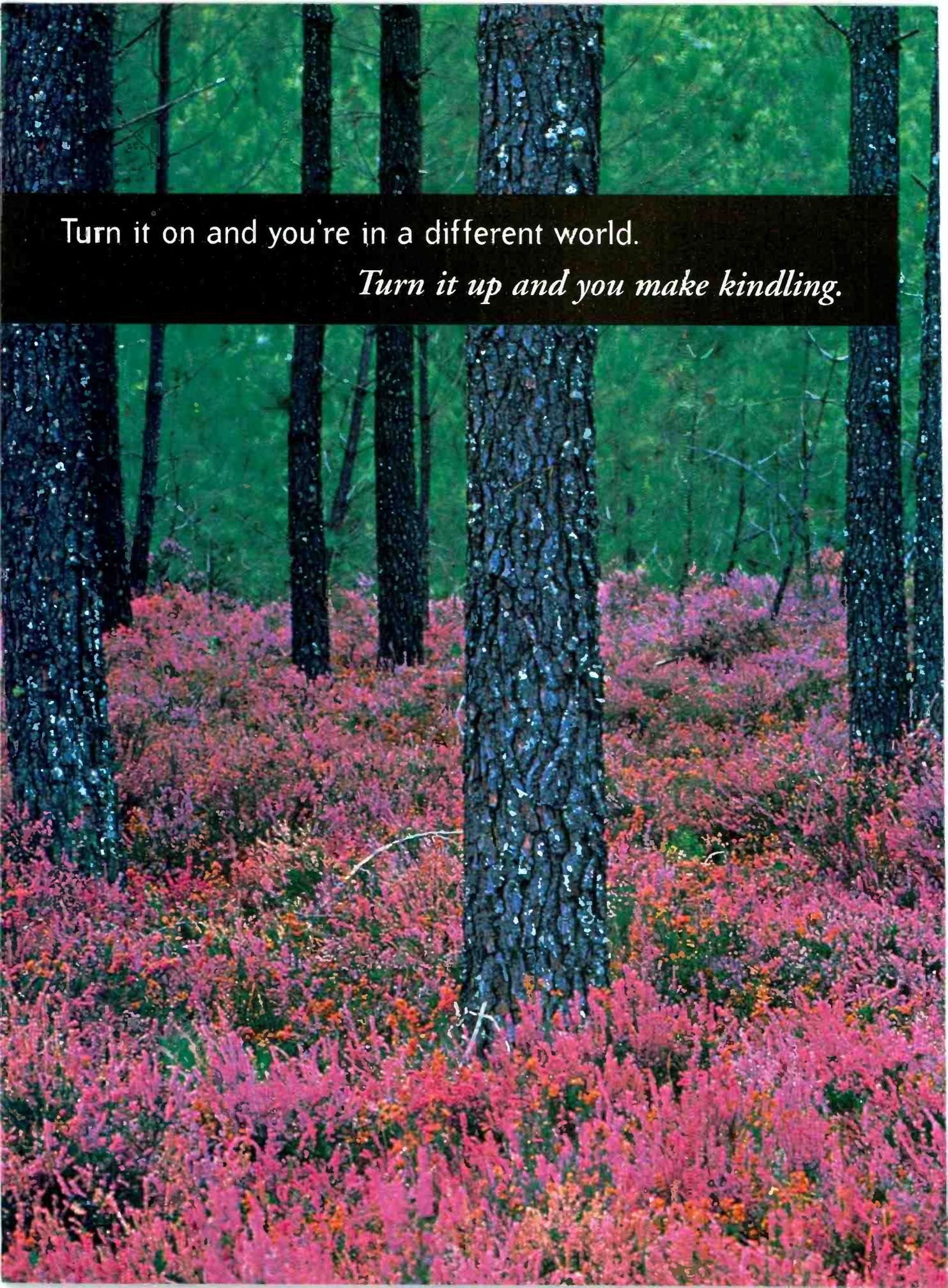
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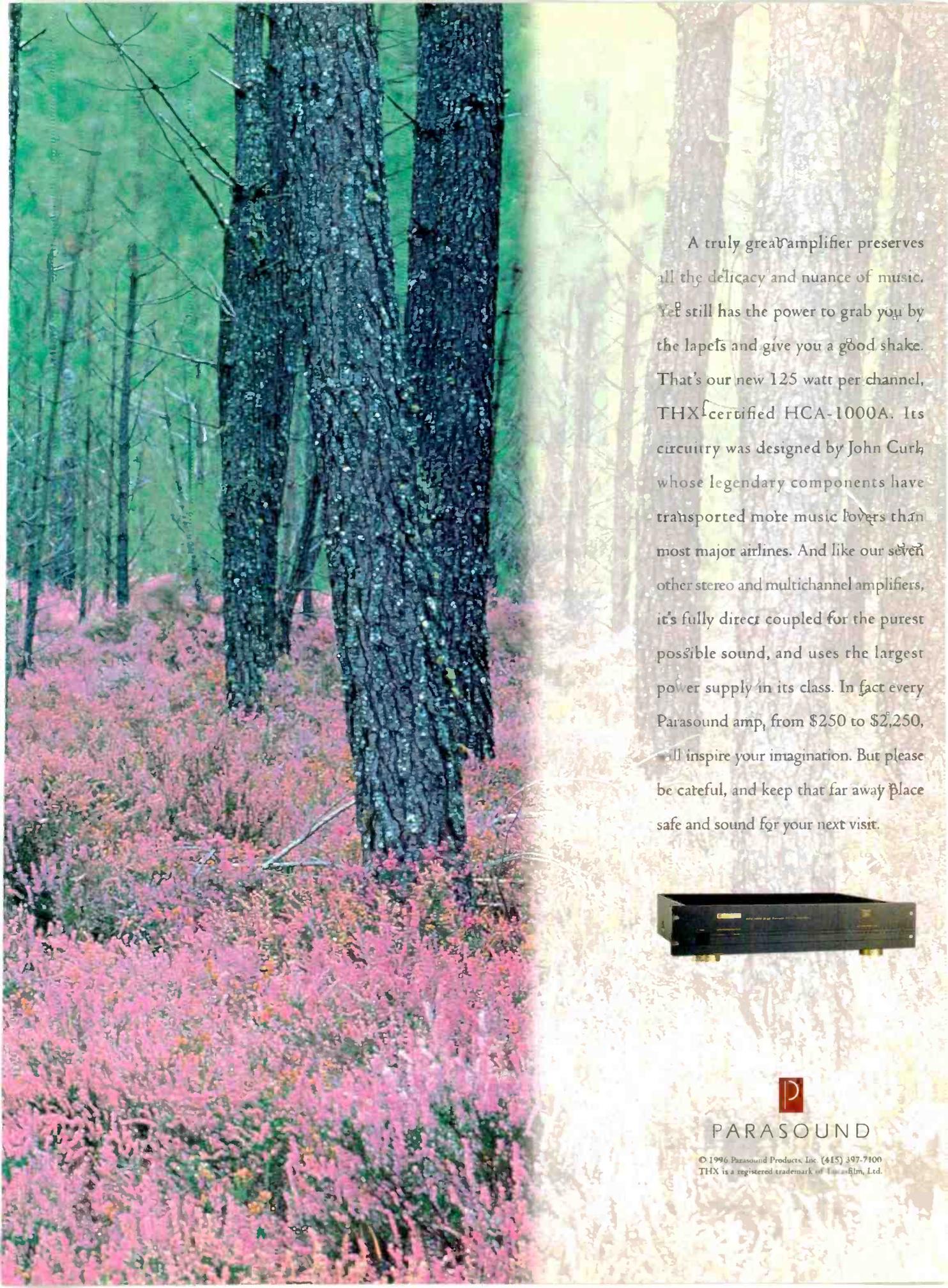
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## TEST REPORTS



LOOK P. LEUNG

## Advent Ruby Speaker

**JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES**

**T**he Advent Ruby is a compact two-way loudspeaker system designed for bookshelf placement. According to the manufacturer, its driver placement and cabinet dimensions provide optimum imaging and frequency response when the tweeter is located somewhere near ear level. Of course, each installation presents a different acoustic environment, and, as with any speaker, its placement relative to room boundaries, especially in a corner, can have a significant effect on the bass response.

The Ruby's fiberboard cabinet is covered in textured black vinyl, with a removable black cloth grille and a contrasting blond-finish wood insert in the lower left corner. Removing the grille reveals a 6½-inch high-excursion woofer with a polypropylene cone, aluminum voice coil, and plastic surround. The tweeter, located above the woofer, is a polymer dome with an integral voice coil approximately 1 inch in diameter.

The woofer enclosure is vented by a roughly rectangular duct next to the tweeter, measuring approximately 1 x 1½ inches and extending about 3½ inches into the cabinet. The input connectors, flush with the rear of the cabinet, are insulated spring clips that accept only stripped wire ends.

The manufacturer's specifications

for the Ruby system include an overall frequency response of 53 Hz to 21 kHz  $\pm 3$  dB, tweeter response within  $\pm 1$  dB up to 13 kHz over a 30-degree vertical or horizontal angle, and a crossover frequency of 4 kHz. Nominal impedance is given as 8 ohms and system sensitivity as 89.5 dB sound-pressure level (SPL) at 1 meter with a signal input of 2.83 volts. The Ruby is recommended for use with amplifiers rated between 10 and 75 watts, and it has a rated peak power-handling capability of 225 watts.

The averaged room response of the pair of speakers, placed about 8 feet apart and measured at a 12-foot distance on the axis of the left speaker, was  $\pm 5$  dB from 60 Hz to 16 kHz. Directivity over an angular range of  $\pm 45$  degrees off the forward axis was typical of speakers that use 1-inch tweeters, with essentially uniform coverage

**DIMENSIONS:** 8¾ inches wide, 15 inches high, 9 inches deep

**WEIGHT:** 12 pounds

**FINISH:** black textured vinyl; solid hardwood accent

**PRICE:** \$249 a pair

**MANUFACTURER:** Advent, Dept. SR, 25 Tri-State Int'l Office Ctr., Suite 400, Lincolnshire, IL 60069; telephone, 1-800-323-0707



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# Stereo Review

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## TEST REPORTS

higher frequencies, down to -5 dB at 15 kHz and -10 dB at 20 kHz.

The combined close-miked response of the woofer and port was  $\pm 3$  dB from 55 Hz to 3 kHz, essentially confirming the manufacturer's rating in that range. The quasi-anechoic MLS response at distances between 1 and 3 meters was  $\pm 5$  dB from 300 Hz to 20 kHz. These measurements also confirmed the crossover frequency of 4 kHz, which was evidenced by a moderate notch that (like most such artifacts) was not audible with music.

The measured system sensitivity was 90 dB, a shade above Advent's rating. The close-miked bass distortion at that level was about 1 percent between 1 kHz and 100 Hz, increasing smoothly to 2 percent at 70 Hz, 3.5 percent at the rated lower limit of 54 Hz, and 10 percent at 35 Hz.

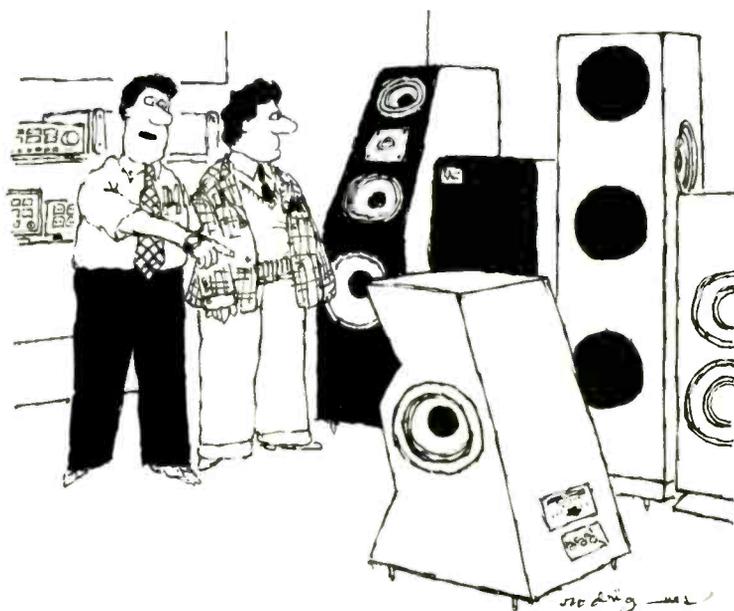
The system's maximum impedance, just under 18 ohms, occurred at 85 Hz. There were other broad peaks of 14 ohms at 25 Hz and 3 kHz. The minimum impedance of 5.5 ohms occurred in the range of 200 to 300 Hz. All in all, the impedance characteristic indicates that the Ruby is an easily driven speaker, especially when its high sensitivity is considered.

For listening tests, we placed the Advent Ruby speakers on top of a pair of column speakers about 4 feet high to simulate wall or shelf mounting, which is not practical in our room. These "stands" served a dual function, not only providing high-mass, rigid

supports that came close to satisfying the recommended installation criteria, but also making a convenient setup for comparisons between two very different speakers occupying almost the same floor space. It should be stressed that the price of the tower speaker used as stands was many times that of the Advent Ruby, and the two speakers could not be fairly compared except in the most general way.

The Advent Ruby sounded neutral, balanced, and smooth. Nothing in the sound of these speakers gave a clue to their size except when the program had appreciable deep-bass content (below 50 Hz or so), or when we compared them directly with the sound of the tower speakers playing the same music. The experiment even led us to supplement the Advent Rubies with a good powered subwoofer, an audio odd couple that produced results consistent with what we had heard from the preceding comparison. The overall sound of the combination compared very favorably with that of several good subwoofer-equipped speaker systems we've tested in recent months.

That is not to say that all these systems sound "alike," a judgment that cannot be applied to *any* group of different loudspeakers. But my reaction to these comparisons was a renewed appreciation of how good a small, relatively inexpensive, but well-designed speaker like the Advent Ruby can sound, and how well it can hold its own against formidable competition. □



*"... This one is 'state of the art' — that one, over there, is 'on the cutting edge.'"*



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## USER'S REPORT



# Phase Technology PC-3 Home Theater Speaker System

DAVID RANADA • TECHNICAL EDITOR

**P**hase Technology's PC-3 system takes its model designation from its front speakers, which are also known as PC-3's. At least three of them are used as the front speakers in a Dolby Pro Logic home-theater setup. Phase Technology recommends the use of five PC-3's in a Dolby Digital system, however, with the two additional PC-3's connected to the two surround channels. If you don't have the room for five identical main-channel speakers, the company also makes a small surround speaker, the DST. We evaluated both an all-PC-3 and a PC-3/DST setup, each supplemented with a Phase Technology Power 12 powered subwoofer.

The PC-3 speaker (\$500) is a four-driver, three-way design, a somewhat unusual configuration for a home-theater speaker. The highs are handled by a 1-inch soft-dome tweeter mounted on a metal plate that also holds a 1½-inch soft-dome midrange driver. After removing four mounting screws, you can rotate the midrange/tweeter plate 90 degrees to maintain vertical alignment of the high-frequency drivers if the speaker is mounted horizontally, as is likely if it performs center-channel duties. (Vertical driver alignment maintains off-axis frequency response in

the horizontal direction.) Lower frequencies are handled by two 6½-inch flat-piston woofers. The vented enclosure measures 22 x 8¼ x 12 inches. System impedance is given as 6 ohms and sensitivity as 93 dB sound-pressure level (SPL) with a 2.83-volt input. Hookup is via gold-plated multi-way binding posts.

Phase Technology calls the DST surrounds (\$250 a pair) "semi-dipole" speakers, possibly because there is only one 5¼-inch polypropylene-cone woofer in each sealed trapezoidal enclosure, and there can be no dipole operation at low frequencies with a single woofer in such an enclosure. There are two ¾-inch side-mounted dome tweeters, however. Nominal impedance of the DST is 8 ohms, and sensitivity is given as 90 dB SPL. Each 9½ x 10 x 4-inch, 7-pound enclosure has a textured black or white finish. A bracket for wall-mounting is recessed into the rear. Hookup is via spring connectors.

Bass in the system is handled by the Power 12 powered subwoofer module (\$550 in black, \$600 with cherry or oak top), which contains a power amplifier rated to deliver 125 watts continuous into its 12-inch "felted-stock" cone woofer. That driver operates in a

19 x 16½ x 17¾-inch bass-reflex cabinet with a front-firing port. The internal low-pass crossover filter rolls off at 18 dB per octave above a user-adjustable frequency, which is set with a rear-panel knob anywhere between 28 and 180 Hz. The remaining control on the subwoofer's rear panel is a phase switch that flips driver polarity. RCA connectors are used for the line-level inputs and spring connectors for the speaker-level inputs. The speaker's overall level control is on the front panel beneath the removable grille.

In addition to the low-pass crossover filter, the Power 12 contains 6-dB-per octave high-pass filters that are used to roll off the bass to speakers connected to its speaker outputs. The speaker-level high-pass outputs' crossover frequency is 100 Hz, and Phase Technology recommends using speakers with a nominal 6-ohm impedance. There are no line-level high-pass loop-back facilities.

It should be noted that speaker-level high-pass filtering is less desirable than line-level filtering because the crossover frequency and slope you actually obtain depend on the impedance of the connected speaker, possibly complicating attainment of flat response around the crossover frequency. Also, compared with a 12-dB-per octave or steeper rolloff, the slow 6-dB-per-octave rolloff provided here will be less effective in preventing high levels of low frequencies from overpowering small main speakers.

Since the speakers we tested were early production samples, we didn't have a final version of the manual to guide our hookup. It is to Phase Technology's credit that we had no problems setting up the speakers without detailed instruction (granted, we do have a considerable amount of experience). The hookup was simplified by our use of an A/V receiver containing THX processing and including THX's standard 80-Hz low-pass crossover and line-level high-pass filters for the main speakers. We dialed the crossover frequency of the Power 12 to its highest setting to get it out of the way of the receiver's crossover circuit. You should do this, too, if you use the Power 12 with an A/V amplifier that has a THX or similar steep-rolloff subwoofer output.

Although we did try out Phase Technology's recommended Dolby Digital system using PC-3's as surrounds as well as for the front three speakers, for the most part we listened

to the PC-3/DST combination. The DST surrounds were placed to the side of the listening position. The front left/right PC-3's were on 25-inch stands, and the center PC-3 — with rotated central panel — was on a 21-inch stand.

Response measurements taken over a 180-degree arc across the front of the DST's indicated no large drop in output level in the forward direction (perpendicular to the front of the enclosure, directly toward the listener when the speakers are mounted on the sides of the listening position). A true dipole would have had a large drop in output in this direction, at least at mid-range frequencies. The DST's directionality was indeed, therefore, sort of halfway between that of a dipole and that of a forward-radiator. This radiation pattern explains why the DST's, compared with true dipole surrounds, produced less envelopment with Dolby Pro Logic material or ambience-enhanced music and more directional surround sound with Dolby Digital soundtracks.

With some soundtracks the increased localizability of the DST's distracted from the visual and sonic events happening up front. Surround-channel sounds were even more localizable when we used the more directional PC-3's as surrounds. You might like this effect, and it certainly will stand out in a showroom demonstration, but drawing a viewer's attention away from on-screen activity is rarely a filmmaker's intent. Phase Technology isn't the only company encouraging the use of the same speakers for all five main channels in a home-theater system. But, as we have found with other such systems, a matched set of speakers may not be as effective as using surround speakers whose radiation pattern is specialized for surround-channel operation.

Beyond this basic product-design issue, the PC-3/DST system sounded very good, if not neutral. It was immediately apparent during our initial listening tests — and before we made any measurements — that the on-axis response of the PC-3 front speakers was fairly flat in the 2- to 3-kHz region and that it rose slightly at high frequencies. These two factors alone would probably make the PC-3 stand out in a showroom, because many speakers it is likely to be compared to do have lower-treble response dips and slight rolloffs in the highs. It was also obvious that the PC-3's generated un-

usually sharp and detailed imaging in both stereo and surround-sound operation, possibly because of those same response characteristics.

With many types of classical recordings, however, the flat/rising highs gave a forwardness to orchestral strings that, while initially texture-clarifying, could be fatiguing in some cases, at least without judicious tweaking of the treble control. Gut-string Baroque ensembles sometimes sounded as if they'd been restrung with modern metal strings, and vocalists who have sounded fine over other speakers often came close to sounding sibilant. With fast-moving pop music, however, the treble behavior was more musically benign — sometimes even exciting with technopop material.

With soundtracks, these treble characteristics were slightly less obvious and sometimes even clarified dialogue. The PC-3 system sounded best with movie soundtracks, and it was fully capable, even using the small DST surrounds, of generating all the sonic impact of Dolby Digital program material. The subwoofer module, in particular, worked unusually well in our corner placement, producing usable output down to below 35 Hz as well as striking impact with Dolby Digital explosions and the tornado noises in *Twister*, which we viewed on the new laserdisc.

Our one-third-octave spectrum-analysis measurements of the PC-3 showed that its on-axis response was unusually flat, only  $\pm 1.5$  dB from 630 Hz to 20 kHz. That  $\pm 1.5$ -dB span can also be seen as a steady 3-dB rise in response

from 630 Hz to 20 kHz. When the PC-3 was used in combination with the Power 12 subwoofer, its room response was a very respectable 40 Hz to 20 kHz  $\pm 2.5$  dB.

Off-axis, the PC-3's output wasn't as well controlled. Responses from 50 to 75 degrees horizontally off-axis showed the expected slow rolloff at high frequencies characteristic of front-firing speakers, but that rolloff wasn't particularly smooth. The directionality of the tweeter produced highs that declined more rapidly than the middle frequencies, leading to a mid-range emphasis (between 1 and 5 kHz) of far off-axis output.

Fortunately, the shape of the PC-3's on-axis response rise allows it to be substantially flattened with a conventional treble control turned down to its 9 to 10 o'clock position. Doing so with our A/V receiver produced outstandingly flat on-axis response, better than  $\pm 1$  dB from 630 Hz to 16 kHz, and a very significant improvement in neutrality and long-term listenability, essentially eliminating listening fatigue. If your facilities allow it, you might also want to experiment with turning down the treble slightly in the center speaker (receiver tone controls usually operate only on the left and right front channels). By making these adjustments, you'll end up with a home-theater speaker system of excellent sound quality at a quite reasonable price.

*Phase Technology Corp. Dept. SR,  
6400 Youngerman Circle, Jacksonville,  
FL 32244; telephone. 904-777-0700.*



*"... Well, let me tell ya — until you've heard Elisabeth Schwarzkopf on this subwoofer, you ain't heard nothin'..."*

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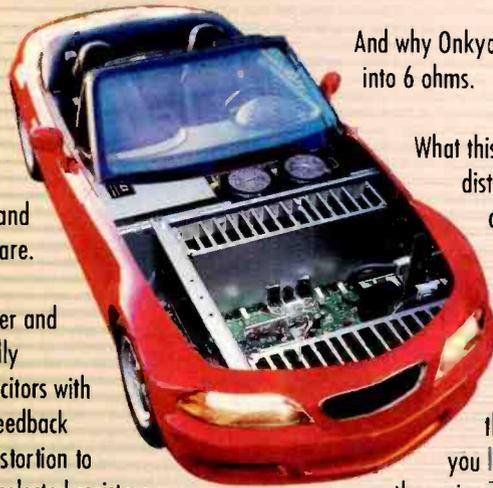
In automotive terms, it's the difference between getting creamed by a semi as you pull onto the highway or leaving it in the dust, and it's called torque. In audio terms, it's a receiver's ability to deliver high power levels into low impedance loads, and it's called High Current Drive. And Onkyo has it to spare.

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Take the cover off a competitive receiver and you'll have to hunt to find the transformer and capacitors. You'll see less circuitry because they'll use cheaper IC's instead of Onkyo's costlier discrete elements.

And their heat sinks look as though they're made out of tin foil. Which is why they measure their receiver power into wimpy 8 ohm loads.

And why Onkyo isn't afraid to measure our receivers into 6 ohms.



What this means to your ears is equally distinguishable. High power and high current into low impedance is the ability to effortlessly handle the most strenuous sonic demands. That's why movie soundtracks heard through an Onkyo receiver have a depth, presence and impact that's missing on other brands. And if you listen, you can hear it, especially on those cinematic passages that explode into your room, like T-Rex's first thunderous bellow in Jurassic Park.

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When it comes to designing a receiver to recreate the ambience of a theater (or any acoustic) environment, you stop thinking Hz and think MIPS (Millions of Instructions Per Second). It's the microprocessor and software parameters that determine the realism of a receiver's Digital Signal Processing—DSP.

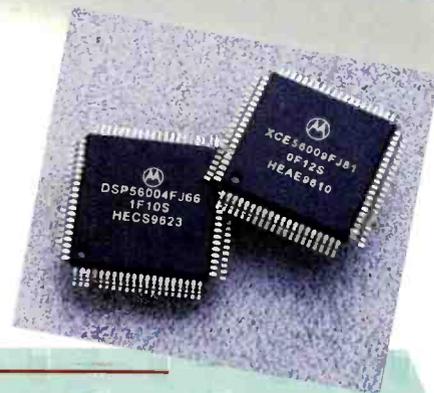
Some audio manufacturers don't want to talk about where their DSP chips come from. Others limit themselves by making their own. But Onkyo seeks out the best global partners, then teams with them to evolve new solutions. And in microprocessors, that partner is Motorola.

All of Onkyo's new home theater receivers utilize a DSP section that's Powered By Motorola™ and programmed by Onkyo. Models incorporating Dolby Pro Logic use the 24-bit Motorola 56004 DSP chip, while those that also include THX and Dolby Digital AC-3 use the new 24-bit Motorola 56009 DSP chip as well.

The Onkyo and Motorola design delivers up to 100% more processing capacity than competitive home theater products. The 50MHz 56004 can execute 25 MIPS using three separate buses to access commands and data simultaneously. The 56009 runs at an even faster 80MHz, with even greater processing capabilities.

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# A REAL THEATER EXPERIENCE

The future of home theater is here and it's called Dolby Digital AC-3. You'll find it in Onkyo's ED-901 Processor and on our new TX-DS939 and TX-DS838 Integra receivers. You'll also find it in an increasing number of competitive products. The same holds true for THX, the George Lucas inspired performance parameters designed to re-create the ambience of a THX movie theater.

So what makes Onkyo's approach to Dolby Digital AC-3 and THX better? Well, you can start with everything we've told you to now. Onkyo's Real High Current Drive means that the power and torque are there to handle the demands of Dolby Digital, especially that rear surround signal which is now two separate, power hungry stereo channels. And Onkyo power is more than up to the task of not only meeting THX requirements, but exceeding them.

Dolby Digital AC-3 also contains much more sonic information than its Pro Logic predecessor. Information that has to come together flawlessly in your room for the experience to be fully realized. And with Onkyo's greater microprocessing capability, which home theater receivers do you think will do a better job making movies come to life?

From the very first AV receiver we built over ten years ago, Onkyo has set the industry standard in home theater performance. And as the Digital Video Disc ushers in a new era of technology, Onkyo again takes its position at the forefront.

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TX-DS838



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Three Dolby  
Digital  
processors  
dish out  
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home-theater  
sound

**F**or most home-theater enthusiasts, many questions regarding Dolby Digital (DD) remain to be answered. Will the new "5.1-channel," data-compressed digital format become the universal standard for surround sound at home? Is it the "best" digital multichannel format available? Will it prove adaptable to pure-music surround systems, WebTV, and next-generation DVD-ROM-based multimedia?

Ordinary folks aren't losing any sleep worrying about such issues. Most people don't even know what Dolby Digital is, even though they've probably experienced it in a movie theater at one time or another. But those of us who are seriously committed to good sound, particularly as it relates to home theater, have already accepted DD — or AC-3, as it was called at first — as a fact of audio life. For us, more practical-minded questions permeate our thinking: What will I need to set up a Dolby Digital system? Can DD be easily integrated into my system as it stands now? What if I have a typical receiver-based A/V system? Will DD make using the rest of my system more difficult? Just how big a pain in the neck will upgrading to DD be?

To shed some light on these and other questions, we rounded up three of the first outboard Dolby Digital processors to hit store shelves and put them through their paces. Does Dolby

Digital sound better than the familiar Dolby Pro Logic (DPL) surround-sound system? Having had the opportunity to spend quality time with a half-dozen different DD-equipped components, I am comfortable in reporting that, yes, Dolby Digital is an improvement over matrixed Dolby Surround recordings played through a DPL decoder.

It's probably old news to most STEREO REVIEW readers that the 5.1-channel digital delivery system features two full-range surround channels instead of Pro Logic's single mono surround channel, and a separate, "low-frequency effects" (LFE) subwoofer channel (hence the ".1" designation). These elements do indeed produce clearly audible benefits in deep-bass impact and tonal integrity as well as in spiffy spatial and special effects (say that three times fast!). But to my ears DD's biggest virtues are subtler: First, there's an overall opening up of spatial realism, or ambience, thanks to the full-range stereo presentation of surround information. Second, there's a subtle but discernible gain in center-channel clarity, which enhances dialogue and cinematic believability, largely from having a discrete center channel rather than one created by summing the left and right front channels as in Dolby Pro Logic systems. And, third, there's a very worthwhile gain over good DPL systems in dynamic range, achieved

PHOTO BY DAVE SLACIE

# Digital Surround

BY DANIEL KUMIN



# À LA CARTE

mostly by suppressing the noise floor — particularly in the surround channels — by an additional 10 dB or so.

With those general points made, we can move on to our three components: the Harman Kardon ADP303, the Onkyo ED-901, and the Pioneer Elite SP-99D. Each of these digital processors is distinctly different from the others in implementation, intended system layout, features, and ergonomics. The

al). Harman Kardon apparently presumes that for non-DD programs you'll employ the DPL processing of the host component along with any other surround modes it might offer.

As a plain external decoder, the ADP303 is designed to "loop-through" a host system in one of three ways: 1) patched between a DPL surround processor/preamp and its associated

ADP303's master volume knob. Clearly, Harman Kardon expects most purchasers of the ADP303 to hitch it to the company's flagship AVR80 MkII A/V receiver (\$1,699), which (surprise!) is equipped with six-channel-direct inputs.

The ADP303 provides six input/output RCA-jack pairs, corresponding to DD's 5.1 channels, plus three audio-only digital inputs, the first of which is an RCA jack labeled AC-3 RF In, which accepts the signal from a current-generation laserdisc player with an AC-3 RF output. A second RCA (coaxial) jack and a single Toslink optical port accept straight AC-3 bitstreams from "future sources" (DVD), and maybe someday direct digital satellite or cable broadcasts). There are also four slide switches for tailoring the processor's outputs to your speakers. The front-speaker switch provides Large and Small settings, the surround and center speaker switches provide settings for Large, None, and Small, and the subwoofer switch simply toggles on and off. The Large setting is for speakers that can handle bass below 100 Hz, the Small setting for satellite-type speakers that don't put out much bass. The None positions are used if the system doesn't have center or surround speakers.

These switches effectively manage the ADP303's Dolby Digital-standard 100-Hz subwoofer crossover (24-dB-per-octave low-pass, 12-dB-per-octave high-pass) so that the deep bass contained in most movie soundtracks is routed only to those speakers that can handle it. While the switch settings will accommodate most speaker layouts, you can't run the main left/right speakers (or any other channels, for that matter) full-range while *simultaneously* sending the bass from those channels to the subwoofer for reinforcement.

The ADP303's front panel is very clean. Eight pushbuttons manage all functions: power on/off, input selection (RF, optical, coaxial), bypass (which removes the ADP303 from the circuit when it's installed between a preamp and power amp), test-signal initiation, mute, and surround-channel delay (0, 5, 10, or 15 milliseconds). A dozen tiny LED's indicate the selected input, operating mode, and settings, while a semipermanent "anti-babysitter" cover conceals six screw-type Level Trim adjusters to control each channel's output level (Harman Kardon supplies the tiny Allen key —



comparably priced Harman Kardon and Onkyo units are straightforward add-on processors, while the Pioneer is a more fully featured preamp/processor that costs substantially more. While each device required a slightly different deployment, my evaluation "B-Chain," as the pro-sound folks term it, remained constant: a Pioneer CLD-S504 laserdisc player with an AC-3 RF output (Dolby Digital laserdiscs, of which more than a hundred are already available, are the only DD program source we have until the new DVD format gets off the ground), a pair of B&W Matrix 803 Series 2 front left and right speakers and a Matrix HTM center speaker, a B&W 800ASW powered subwoofer, and two Citation Model 7.3 switchable dipole/bipole surround speakers mounted high and to the sides in my 15 x 20-foot listening room. For preamp-based listening, I employed a Citation 7.0 preamp and a Parasound HCA-806 power amp rated to deliver 80 watts into each of six channels.

## Harman Kardon ADP303

A slim, attractive Dolby Digital debut, the Harman Kardon ADP303 (\$749) is engineered to bring digital 5.1-channel processing to an A/V system that already includes the necessary amplifier channels. It performs Dolby Digital decoding and nothing else, not even the digital-domain Dolby Pro Logic decoding that the Zoran DSP chip it uses is capable of (the Dolby Digital standard makes DPL decoding option-

## Harman Kardon ADP303

### HIGHLIGHTS

- Zoran DSP chip
- AC-3 RF, coaxial, and optical digital inputs
- Six-channel discrete RCA inputs and outputs
- Bypass switch for "loop-through" installation
- Internal test-signal generator
- Individual channel-level controls
- Master volume control

**DIMENSIONS:** 17 $\frac{1}{2}$  x 3 $\frac{3}{8}$  x 10 $\frac{1}{2}$  inches

**WEIGHT:** 9 $\frac{1}{2}$  pounds

**PRICE:** \$749

**MANUFACTURER:** Harman Kardon, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797; telephone, 1-800-645-7484

multiple amplifier channels (left, center, right, dual surround, and subwoofer); 2) connected to an A/V receiver that has independently accessible pre-out/main-in jacks for five discrete channels plus a subwoofer output (relatively rare birds); or 3) connected to a late-model "Dolby Digital-ready" A/V receiver or preamp that has six-channel-direct inputs, in which case only the ADP303's outputs need be connected. In each scenario, the laserdisc player's AC-3 output is connected to the ADP303's AC-3 RF input; everything else connects to the host component as before.

It's important to point out that the third hookup scenario is the only one that provides remote six-channel volume control (through the host receiver's remote). In the other two system layouts, volume during DD playback must be adjusted manually using the

quired to remove the cover, but you'd better not lose it — it's smaller than the smallest one in my metric set).

The level adjusters can be used in systems where the ADP303's outputs are going straight to the amplification stages, but in setups using an A/V receiver with six-channel-direct inputs you'll probably want to use the receiver's channel-balancing facilities and leave the ADP303's trim screws set to their detent (center) positions. The direct-input A/V receivers I've seen so far all provide an independent input-trim control for each channel.

Except for master volume, the controls are active only when a Dolby Digital laserdisc (or DVD) is playing. All other signals pass through the ADP303 uninfluenced by any other controls or level adjustments.

**T**o try out the Harman Kardon ADP303 in a "generic" surround system, I used six dual-RCA patch cords to loop it between the left-front, center, right-front, left-surround, right-surround, and subwoofer outputs on my Dolby Pro Logic-based A/V preamp and the corresponding inputs on my amplifier and powered subwoofer. Making the connections was reasonably straightforward. I then set channel levels using the ADP303's test mode and a sound-level meter. Hitting the decoder's Test button circulates pink noise among all of the outputs; you can engage a 2-second cycle by simply tapping the button or a 5-second cycle by holding it down for a few seconds — a very useful option. The whole channel-balancing procedure took barely 5 minutes and resulted in a setup ready for both Dolby Digital and Dolby Pro Logic playback.

It's important to note that, in this setup, Dolby Pro Logic playback (via the host component) requires either engaging the ADP303's bypass mode or turning the unit off so that the DPL signals pass through it unimpeded. And since the ADP303 is strictly a manual component, that means walking over to the component rack to press the bypass button. In fact, with this hookup scheme, you need to walk back and forth to operate any of the ADP303's controls.

Operation is a bit easier on your feet if you mate the ADP303 with an DD-ready A/V receiver like Harman Kardon's AVR80 MkII. Since I happened to have a Marantz SR-96 A/V receiver on hand — a near clone of the AVR-

80 — I used it to evaluate the ADP303 in a receiver-based system. Hookup only involved running cables from the processor's six outputs to the receiver's corresponding 6-Ch. Direct Input jacks. In this arrangement, master volume control and channel balancing are handled by the receiver (the ADP303's manual instructs you to leave its own master volume knob at 12 o'clock in this case), which treats the 6-Ch. Direct Mode input position as a source input *with* Dolby Digital decoding but no access to DPL or other onboard surround processing. For DPL laserdisc playback, you simply select the LD (laserdisc) position.

While the two hookup scenarios I tried offered a decidedly different ergonomic experience, both delivered excellent Dolby Digital performance. The ADP303 was exceptionally quiet, contributing practically no audible noise — even with the laserdisc in pause mode and the master volume fully cranked. Sound quality was entirely in line with what I've heard from other DD processors: clean, quiet, powerfully dynamic, and crisp, if not very slightly bright. I attribute that touch of brightness mostly to the DD format's discrete full-range surround channels. (A five-channel treble-tilt control would be no bad thing.) Deep-bass production seemed noticeably cleaner and weightier than in Pro Logic mode, but since Dolby Surround and Dolby Digital mixes of the same soundtrack are usually radically different, definitive comparison is not really possible.

In short, the Harman Kardon ADP303 does its job very well, and in a very straightforward manner. Its lack of remote control might be a little off-putting to some, as might the need to manually set its master volume control separately from the system's main volume control. But dyed-in-the-wool home-theater freaks won't blink at this — and they will appreciate the decoder's fine performance, value, and simple yet adaptable design. Although the ADP303 is perfectly usable in a multibrand, separate-component setup, in truth it's best suited for use with a DD-ready A/V receiver, in which case it makes a fine choice.

### Onkyo ED-901

Though Onkyo was a few months behind some other companies in bringing Dolby Digital hardware to market, it was one of the first to hint at things

to come when its then flagship TX-SV919THX audio/video receiver hit store shelves a couple of years ago with a mysterious twenty-five-pin connector labeled External Decoder. It soon became clear that the port, which also appears on the newer TX-SV828THX A/V receiver, was destined for use with a Dolby Digital surround decoder.

The Onkyo ED-901 (\$750) is that decoder. Somewhat confusingly, its front panel displays both the old Dolby Surround AC-3 and the new Dolby Digital logos, while Onkyo's owner's manual refers throughout only to AC-3, the name of the digital coding scheme behind the format. (Memo to Dolby Labs: This is what happens when you change the "official" name of a new technology after products are already on store shelves. Serves ya right!)

The idea behind the ED-901's DB-25 jack (a standard connector found on the back of any personal computer) is simple one-cable interconnection between the outboard processor and the host component; the processor has a male connector that plugs into a corresponding female jack on the host. So instead of running a separate RCA cable for each of Dolby Digital's six channels, everything is handled by a single DB-25 cable with connectors that can be plugged in only one way. It's truly foolproof, and it follows a channel-assignment standard that's supported by both Dolby Labs and Lucasfilm's Home THX division.

**L**ike Harman Kardon's ADP303, the ED-901 is a slim, relatively stark black box that's designed to be used with Onkyo's AC-3-compatible A/V receivers and therefore offers only Dolby Digital decoding. But unlike both of the other processors evaluated here, the ED-901 uses a Motorola DSP chip (DSP56009) rather than the Zoran chip employed by Harman Kardon, Pioneer, and most other suppliers of Dolby Digital hardware so far. (Onkyo also uses Motorola chips for DPL surround processing in its non-DD receivers.)

The ED-901's user interface consists of nine pushbuttons, thirteen LED's that confirm the status of various operations, including channel status, and a two-digit display that shows the surround-channel delay time in milliseconds (ms) as you set it.

Various buttons handle power on/off, input selection, surround-channel

delay time, LFE-channel level, and Midnight Theater and Cinema Re-EQ on/off. The ED-901 provides no options for routing bass from the satellite to the subwoofer, so all five main channels run full-range. Onkyo assumes that your DD-ready receiver or preamp will provide any required crossover or routing functions.



The difference between the rear panel of Onkyo's ED-901 and that of Harman Kardon's ADP303 goes beyond the multipin DB-25 port. The ED-901 has two sets of analog stereo A/V inputs and one matching A/V output (all with both composite- and S-video jacks). Of course, there are also two audio-only digital inputs: an AC-3 RF jack (required for current-generation laserdisc players) and a switch-selectable optical/coaxial input pair (one of which can be active at a time) for DVD and future AC-3 sources.

The ED-901's two stereo A/V inputs are each meant to receive analog two-channel audio (from matrixed Dolby Pro Logic programs or regular stereo) plus either composite- or S-video signals from your laserdisc player and, eventually, from a DVD player. Two front-panel buttons allow you to select the analog audio and video from either unit and send it to the host component via the ED-901's analog A/V outputs. The idea is that you can save some real estate by operating two source components through a single set of A/V inputs on the host.

With only a single laserdisc player to hook up, it was easier just to bypass the ED-901's analog connections. I wired the ED-901 to a TX-SV828THX A/V receiver (\$1,500) that Onkyo provided using the DB-25 cable that comes with the decoder. Then I connected the laserdisc player to the ED-901's AC-3 RF jack and routed the analog A/V outputs to the receiver's Video 1/VDP input. I found that leaving the receiver in its Video 1/VDP mode worked fine. Switching between Pro Logic and Dolby Digital surround

playback was a simple matter of engaging the receiver's Pro Logic or external-decoder modes, exactly as if I had looped the analog A/V signals through the ED-901.

Like Harman Kardon's ADP303, the Onkyo ED-901 is a purely manual component with no remote-control ca-

unless you are a technician or reviewer). Worse, neither Onkyo manual makes this clear, and it had me cudgeling my brains for some time; I can only imagine the confusion that this would create for a home-theater greenhorn.

I do have the Dolby test disc, of course, and I found that the ED-901 maintained perfect balance relative to my meter-calibrated receiver settings except that the Dolby Digital surround channels lagged by about 1.5 dB on both sides — curious. More seriously, I also found that, at least in my setup, the ED-901 processor played back reference levels that were about 4 dB lower all around than the receiver-produced DPL test signals from the same laserdisc player (I already suspected this just from listening to surround-sound program material).

I was easily able to rectify both of these slight anomalies by boosting the receiver's external-decoder input-trims 4 dB all around (actually, 5 dB for each surround channel). Eventually you could probably arrive at something close to these settings by ear, but again I don't know why that should be necessary.

Since the ED-901's six-channel DD output is handled only via a multipin DB-25 connector and matching cable, you'll need an adaptor if you want to use it with a host component that has RCA inputs. Monster Cable now makes just such a product, the InterLink 406 HTDBR, a thick cable with a twenty-five-pin connector on one end and six color-coded RCA plugs on the other; prices range from \$150 for a 1-meter cable to \$210 for one that's 4 meters long. But remember, the ED-901 has no master volume control. So unless you want to listen at full volume all the time, you'll still need a host component with the appropriate six-channel RCA inputs to be able to control volume. The roster includes a number of recent A/V receivers, as well as a handful of new A/V preamps.

All of these caveats are irrelevant, however, once you get the ED-901 up and running, particularly if your setup includes a DD-ready Onkyo receiver as mine did. The pairing works quite transparently, but you must remember to select the external-decoder input (via one of the receiver's on-screen menus) when playing DD discs. Sound quality was outstanding, with all of the extra clarity and dynamic power I've come to expect from Dolby Digital. And the Onkyo ED-901 was every bit as quiet as the Harman Kardon de-

## Onkyo ED-901

### HIGHLIGHTS

- Motorola DSP chip
- AC-3 RF, coaxial, and optical digital inputs
- DB-25 output connector for one-cable hookup (cable included)
- Analog stereo A/V inputs and outputs
- Lucasfilm Cinema Re-EQ mode
- Midnight Theater low-level-listening mode

**DIMENSIONS:** 18 x 3½ x 12½ inches

**WEIGHT:** 9½ pounds

**PRICE:** \$750

**MANUFACTURER:** Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446; 201-825-7950; <http://www.onkyo.co.jp>

pability. And since it has no master volume control, it must be used with a host component having a six-channel input that can be adjusted with the host's volume control. To the best of my knowledge, that includes only very recent DD-ready components (mostly receivers) that have been designed with 5.1-channel expansion in mind. Of course, the host's input jack must be a DB-25 connector, or you'll need an adaptor.

The ED-901 has no output-level controls. You set the receiver's surround-sound channel levels "globally," as usual, but you can trim the TX-SV828THX's external-decoder input levels independently via its on-screen setup routine, so that, say, the center-channel level for DD programs would be 2 dB lower (or whatever) than for Pro Logic. But the ED-901 has no test-tone facilities for setting DD levels, which means there is no way to match DD and DPL levels reliably unless you have access to a Dolby Digital test disc from Dolby Labs (unlikely

coder, which is to say that it added no audible noise to the soundtracks.

The ED-901 furnishes two extra buttons that require mention. Cinema Re-EQ, one of the suite of surround enhancements Lucasfilm provides to licensees of THX hardware, is an equalization circuit designed to tame the slight excessive brightness that often occurs when soundtracks mixed for playback in large movie theaters are reproduced in the much smaller and acoustically very different home environment. In the case of the ED-901, Cinema Re-EQ is implemented in the digital domain, presumably following the THX-specified mild rolloff of the top three octaves or so in the three front channels. I found the Re-EQ mode to be subtle, entirely transparent, and highly useful. If the ED-901 was part of my permanent system, I'd simply leave it on full-time.

The other extra is the Midnight Theater mode, which is a relatively simple peak-limiting algorithm to keep high-volume events (explosions, etc.) from shaking the house as vigorously as they would if unrestricted. Consequently, you can raise the master volume to a level that makes dialogue reliably listenable without fear (or *less* fear) of disturbing sleeping infants or neighbors — hence the tongue-in-cheek "Midnight Theater" moniker. This feature also worked entirely transparently. If you didn't know it was on and had no way of switching it in and out (though you do), you'd be hard pressed to notice it most of the time.

In short, the Onkyo ED-901 sounded excellent. I'm not prepared at this stage to make comparative judgments among Dolby Digital hardware — without A/B facilities, and in the absence of any obvious individual flaws, it's just too shaky a limb to crawl out on. But I *am* prepared to say that for use with a DB-25-based host component, the Onkyo ED-901 is an obvious choice. If you don't demand total remote control, its balance of simplicity and useful features should prove quite attractive.

### Pioneer Elite SP-99D

Pioneer's Elite series SP-99D was the first major-brand Dolby Digital component to reach North American shores — so early, in fact, that it predates the Dolby Digital appellation altogether: My sample is labeled Dolby Surround AC-3 Processor. The SP-99D is considerably more expensive

than the other processors evaluated here. But for \$1,530 you get a good deal more: full-featured Dolby Digital decoding with a couple of extra modes and options, including digital-domain Dolby Pro Logic processing, three additional DSP surround modes for music and non-Dolby A/V programs, and an 18-bit digital-to-analog (D/A) conversion system for plain stereo (as well as surround) sources.

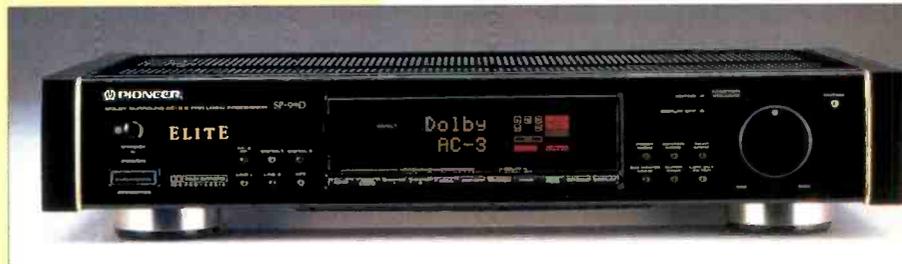
All of this makes the SP-99D far more than just an add-on Dolby Digital box. With a few limitations, it can function reasonably well as an audio preamp/surround processor, though it has no video circuitry. Pioneer's provision of multiple inputs means that in a pinch you could even use it as a digital preamp, assuming you can do without video switching, tone controls, and tape-dubbing facilities. Routing audio and video together through a conventional A/V preamp would bring these and several other substantial benefits, but it would most likely also duplicate several of the SP-99D's functions.

The rather sleek chassis sports a classy piano-black faceplate with gold trim, rosewood end caps, and elegant, though hard-to-read, gold lettering. Twenty-five pushbuttons distributed

across the front panel control input and surround-mode selection, crossover settings, and a number of ancillary functions. The SP-99D's main display is a large, centrally located window with easy-to-read dot-matrix characters that confirm each command and indicate the selected surround mode (the display can be turned off).

The rear panel proffers the expected six line-level RCA outputs as well as various inputs: an AC-3 RF jack for compatible laserdisc players, two digital ports (an RCA jack and a Toslink optical jack), and two analog stereo RCA input pairs. The second of these is complemented by adjacent Center and Surround inputs, which permit the SP-99D's DSP modes (Theater 1, Theater 2, and Hall) to be overlaid on any four-channel surround signals from an outboard processor or receiver.

The SP-99D is the only processor in the group to offer full remote control via a supplied handset as well as input and output ports that enable it to be controlled remotely along with other Pioneer components. The infrared controller is small and ergonomically only fair, but it does put all of the SP-99D's many controls — including master volume and five channel-level buttons — at your fingertips.



### Pioneer Elite SP-99D

#### HIGHLIGHTS

- Zoran DSP chip
- 18-bit D/A converter
- Digital-domain Dolby Pro Logic and three DSP ambience modes
- AC-3 RF, coaxial, and optical digital inputs
- Analog audio inputs
- Six-channel discrete RCA inputs and outputs
- Dynamic-compression control
- Adjustable crossover
- Individual channel-level controls
- Master volume control
- Wireless remote control

**DIMENSIONS:** 18 x 3 $\frac{3}{4}$  x 13 $\frac{1}{2}$  inches

**WEIGHT:** 13 $\frac{1}{4}$  pounds

**PRICE:** \$1,530

**MANUFACTURER:** Pioneer, Dept. SR,  
P.O. Box 1540, Long Beach, CA 90801;  
telephone, 1-800-746-6337

You can connect the SP-99D's outputs directly to a host component with a set of discrete six-channel inputs. You could also set it up for "pass-through" processing in which a DPL host's four outputs are routed into and through the processor. Thus, unlike the Harman Kardon and Onkyo processors, the SP-99D can be used to upgrade a two-channel system by patching the preamp or receiver's tape output into one of its analog inputs and using the processor's master volume control while the host handles A/V signal selection and other remote-control functions. In any case, you would still have to select the AC-3 input to hear Dolby Digital, though with the SP-99D you can at least do so via remote control.

## BY THE NUMBERS

A casual trip past the test bench confirmed that all three Dolby Digital components were delivering on their digital promises. No frequency-response measurements are given, since the sole test disc available (from Dolby Labs) provides neither step nor sweep signals that are compatible with our Audio Precision test

equipment. All signs, however, suggest that all three processors have responses well within  $\pm 0.5$  dB from 20 Hz to 20 kHz. The signals needed to test channel separation, distortion, and additional parameters at frequencies other than 1 kHz are also unavailable for now; we hope to rectify that in the near future. — D.K.

	HARMAN KARDON ADP303	ONKYO ED-901	PIONEER ELITE SP-99D
<b>SIGNAL-TO-NOISE RATIO</b> (A-wtd, re 0.5 volt, all channels)	>110 dB	>99 dB	>98 dB
<b>CHANNEL SEPARATION</b> (1 kHz, all channels vs. all channels)	>80 dB	>78 dB	>77 dB
<b>DISTORTION</b> (THD+N, all channels)	<0.01%	<0.03%	<0.05%

I connected the stereo analog outputs from my laserdisc player to the SP-99D's Line 1 inputs, the player's optical digital audio outputs to Digital 2, and its AC-3 RF output to the AC-3 input. The SP-99D lets you choose Large or Small settings for the front, center, and surround speakers depending on their bass-producing capabilities (Large delivers full-range signals to the speaker, Small a high-pass-filtered signal). The Crossover button offers 100-, 150-, and 200-Hz cutoff points — more choices than DD's standard 100-Hz setting. There is also a None setting for center and surround speakers that mixes one or the other (or both) channels into the left and right main speakers for "phantom" center or surround reproduction, plus an unusual single-surround-speaker mode that I doubt will find much use. In addition, the LFE channel has a None setting for mixing deep bass into the front left and right channels as well as 0-dB and +10-dB settings — the +10-dB setting is considered normal for Dolby Digital.

Finally, you can set center-channel and surround-channel delays independently. Center delay provides a way to time-align the output of your front speakers in the event the center speaker is closer to the main listening position than the front left and right speakers. Center delay applies to both DPL and DD sources.

For my setup, I chose the Small setting for the front, center, and surround

speakers so that I could evaluate the SP-99D's electronic crossover. I used its test-tone mode to balance channel levels, which was a relatively quick and easy procedure.

The Pioneer SP-99D's sonic qualities easily matched those of the Harman Kardon and Onkyo decoders, delivering all-around excellent performance. Clarity, definition, and impact were all first-rate, as was bottom-end definition and oomph in both Pro Logic and Dolby Digital modes. The SP-99D was also exceedingly quiet.

Pioneer provides some dynamics control in the form of a D.R. Comp button, which activates a single level of digitally derived compression/limiting (the DD standard offers the option of providing user-adjustable compression). For late-night DD listening and other low-volume needs, the compression mode worked moderately well, but the algorithm Pioneer uses is very mild (about 3 dB most of the time, as best I could tell), perhaps even a tad *too* mild. At times big transients were still reproduced too loudly for late-night listening when the master volume was set for always-intelligible dialogue.

The Pioneer SP-99D's Pro Logic performance was excellent — remember, it's implemented in the digital domain by the same Zoran 38500 chip that performs DD decoding. Decoding sounded smooth and very quiet, steering was accurate and mostly smooth,

and surround-channel envelopment was very good. DPL noise performance, particularly in the surround channel, was outstanding.

Pioneer's "extra" surround modes, Theater 1, Theater 2, and Hall, use four-channel algorithms, but each can also be invoked on top of Pro Logic or Dolby Digital playback. All tended to be a little overbaked and "boingy" for my taste unless I set them to a minimal effect level, in which case some interesting ambience effects were possible in combination with DPL or DD.

As usual, I almost always preferred listening to straight DD or DPL decoding with no enhancements. Happily, the SP-99D memorizes channel-balance settings and surround-effect levels independently for each playback mode, including separate DD and DPL channel levels — yippee! You could, for example, set up a very pleasant Hall effect by dialing in a mild dip in the center and surround channels and then setting the effect level on the low side — all without having to rebalance the channels when switching between DD and DPL. (Why don't more surround processors give you this kind of control?) All in all the SP-99D is a very capable surround processor.

### Summing Up

When all is said and done, Dolby Digital is a worthwhile upgrade from a purely sonic point of view. Setting up and using a DD system is not particularly difficult, though retro-fit connections may occasionally cause some confusion and outboard processors will always pay a slight penalty in simplicity compared with A/V receivers that have onboard DD decoding.

Our three test subjects all deserve good-value status, but in different system layouts. The Harman Kardon ADP303 is best suited for use with host components that have six-channel RCA inputs or pre-out/main-in facilities, the Onkyo ED-901 is best for use with Dolby Digital-ready gear having DB-25 multipin connectors, and the Pioneer SP-99D is best for use as a more fully featured DD/DPL surround processor that can be added to a non-surround system or one whose surround performance and features could stand an upgrade. Performance-wise, it's a toss-up, but I suspect that for most buyers the contrasting features, facilities, style, and price of these three devices will combine to make their choices easy and logical. □

# “MicroWorks Is In The Same League With The Top-Rated \$699 Multimedia System...And Plays Louder Without Distortion. In Terms Of Price For Performance, It's In A Class By Itself.” *MacWorld, Dec. 1996*

## Introducing *MicroWorks* – Our New High-Powered, High-Output Amplified Speaker System.

*MicroWorks* is a very powerful, very versatile amplified subwoofer/satellite speaker system. It produces enough natural, accurate, wide-range sound – including deep bass – to fill a living room or a conference room. It's perfect for use with multimedia computers and for making business presentations. It can be the heart of a terrific home stereo system. Or just connect it to a stereo TV or VCR for a simple-but-fantastic two-channel home theater sound system.

### More Power. More Output. Better Bass.

Compared to any other multimedia speaker system we know of, *MicroWorks* has much more power, significantly more acoustic output and deeper, stronger bass. We think it sets a new standard of performance for the product category. Its sound is comparable to that of a very high quality component stereo system.

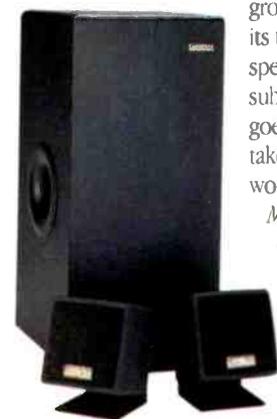
### The Ultimate Multimedia Sound System?

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*MicroWorks* consists of two magnetically shielded cube

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\* The subwoofers of both systems are designed to be placed on the floor, not on the same surface as the satellite speakers. © 1997 Cambridge SoundWorks.



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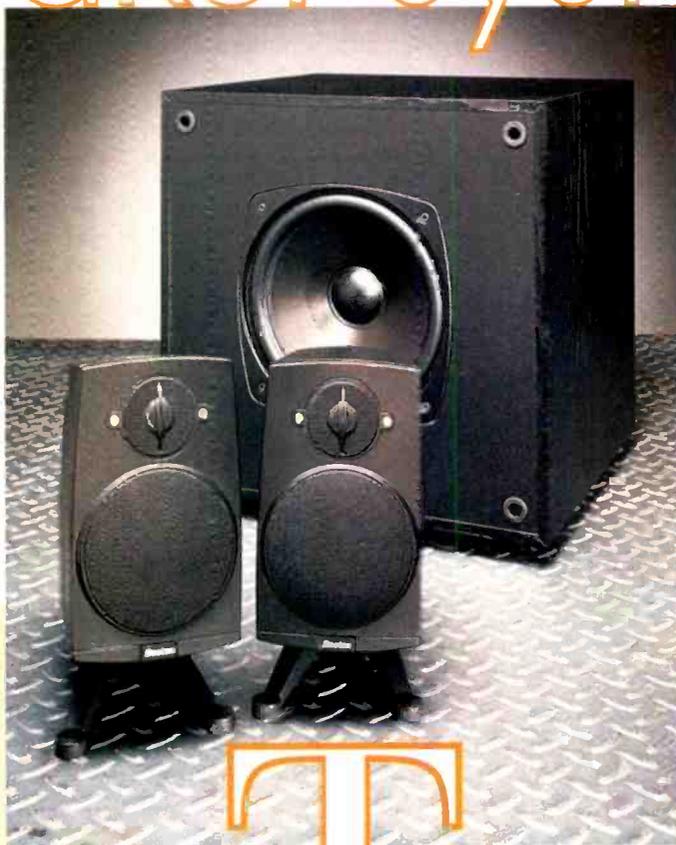
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# SUB/SAT

## speaker systems

**Versatile  
little trios  
expand  
your music  
and home  
theater  
options**

**BY RICH  
WARREN**



**T**HREE-PIECE SPEAKER SYSTEMS beg for a short, catchy name. Some people call them “sub/sats,” which sounds like a joint venture between the Navy and NASA. The “sub” is for subwoofer and “sats” for satellite speakers, the midrange/tweeter

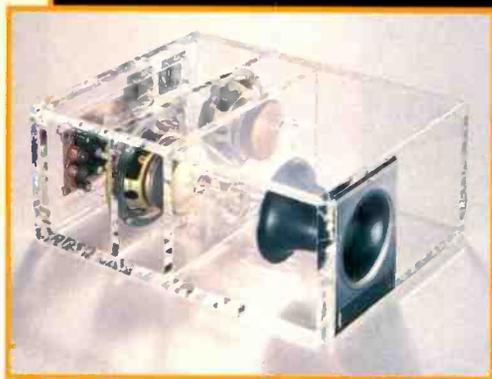
parts of the system. Sports teams aiming for triple championships quest for three-peats. So why not call three-piece speaker systems “three-speaks”? Regardless of the name, they offer distinct advantages over conventional speakers. To understand the advantages, it helps to understand the design concept behind sub/sats. Ordinary

speaker systems provide stereo sound from two matching boxes, each containing a woofer and a tweeter or a woofer, a tweeter, and a midrange driver. Those that are

**Above: The satellites in Boston Acoustics' Micro90 system (\$800) have cast-aluminum enclosures for strength and rigidity.**

able to deliver serious bass typically have big enclosures with a good-size woofer (sometimes two of them) in each cabinet. The problem, for some of us, anyway, is that big speaker boxes take up precious living space.

Fortunately, you don't really need woofers in two separate enclosures to produce heart-stopping bass —



The Bose Acoustimass-5 Series II system (\$799) has tiny double-cube satellites that can be aimed to add spaciousness to the sound and a bass module with internal chambers to enhance its output (transparent version for illustration only).

that's where three-piece speaker systems come into play. Thanks to the laws of physics and the way human hearing works, sound below 150 Hz or so is omnidirectional, which is a fancy way of saying that you can't tell where it comes from. Sub/sats capitalize on this fact of audio life by putting the bass part of the speaker system in a separate box that can be located in an unobtrusive place where an ordinary speaker simply can't go, such as on the floor behind your sofa.

The term "subwoofer" is actually a misnomer for the bass box of many three-piece systems. The satellite speakers often house only a tweeter and a small midrange driver that can't handle any real bass, and it's hard to have a *sub*woofer when there's no woofer. Picking up where an ordinary woofer leaves off, a true subwoofer should reach down into the bottom octave, the deep bass that presents both an auditory and a physical experience. That's why some sub/sat makers diplomatically call the box containing the woofer the "bass module."

One of the biggest challenges for designers of three-piece systems is selecting the right crossover point between the satellites and the bass

module. Cross over too high and you'll be able to pinpoint the location of the bass module with your eyes closed. Cross over too low and you run the risk of overtaxing the satellites' small drivers.

Sub/sat systems offer several advantages over conventional stereo speakers. They blend into your decor more easily because the satellite speakers are typically small and the bass module can be hidden away. Imaging is often tighter because the small satellites have narrow baffles, which reduces diffraction effects. The bass module usually contains an amplifier (and crossover) optimized for bass reproduction so that your receiver or main power amplifier can concentrate on the satellites. Finally, most three-piece speaker systems can be easily and inexpensively expanded into a full home-theater system simply by adding an extra pair of satellites and a matching center speaker.

In these pages we've spotlighted just a few of the many sub/sat system options available today. Besides being compact and poised for home-theater action, almost all of the three-piece systems described here have magnetically shielded satellite speakers that can be placed close to your TV screen without distorting the picture.



Polk Audio's RM3300 system (\$799) combines 7-inch-tall RM2000II satellites, each with a 3½-inch midrange and a ½-inch tweeter, and the PSW50 sub with an 8-inch woofer and a 65-watt amp.

**B**ose, the company that popularized subwoofer/satellite systems in the mid-Eighties, has taken three-piece-speaker design to the extreme and revolutionized it in the process. The Acoustimass 5 Series II system (\$799) features a pair of attractive dual-cube satellite speakers whose 6¾ x 3½ x 4¾-inch measurements alone set it apart from the crowd. The tiny cubes, each of which contains a 2½-inch wide-range driver, pivot in relation to one another so that their dispersion can be adjusted effectively. Bose suggests aiming one cube toward the wall to give the sound a more spacious quality. The cubes can be easily mounted on the wall using optional brackets (\$30 apiece), or they can be positioned on table stands (\$60 a pair) or floor stands (\$99 a pair).

The Acoustimass 5's bass module is a patented, three-chamber box that measures only 14 x 7½ x 19 inches and contains two 5¼-inch woofers. They're mounted in the middle chamber, so the only thing you see from the outside is the sculpted port through which bass energy radiates into the room. The module has no onboard power, but according to Bose it can be driven with as little as 10 watts. If you want to conceal the bass module completely, it can be mounted beneath the floor or behind a wall, as long as its port is left unobstructed. The Acoustimass 5 Series II system comes in black or white.

The Acoustimass 3 Series III system (\$469) has single-cube satellites and a smaller bass module with only one 5¼-inch woofer. For home-theater applications, Bose offers the Acoustimass 7 system (\$999), which is the Acoustimass 5 system with an extra satellite speaker for center-channel duties, and the Acoustimass 10 (\$1,299), a system that boasts five double-cube satellites and a bass module slightly larger than the one in the Acoustimass 7 system.

Bose also offers three powered sub/sat-based music systems in its Lifestyle series that sell for \$1,099, \$1,499, and \$2,500. System power is provided in the bass module, and there's a separate control center that houses a preamplifier/tuner and a CD player (or a six-disc changer in the top model).

Boston Acoustics die-casts the satellite enclosures of its new Micro90 sub/sat system (\$800) from aluminum for optimum strength and rigidity. This allows the drivers to flex their



The Ensemble II system from Cambridge SoundWorks (\$500) features a bandpass subwoofer with two 6½-inch woofers and a pair of 8¼-inch satellites.

muscles rather than the cabinets. Each small (6⅞ x 4¼ x 5¾-inch) satellite has a proprietary 1-inch aluminum-dome tweeter and a 3½-inch copolymer "midbass" driver. The tweeter is the same as used in the company's premium Lynnfield VR home-theater speaker series. The optional MRB pedestal (\$20 apiece) can be used as a table/shelf stand or as a wall bracket.

The Micro90's subwoofer, rated down to 35 Hz, houses an 8-inch driver, a 75-watt amplifier, and an adjustable crossover in a dual-ported enclosure that's about 15 inches square. The driver's pole plate is grooved (Boston Acoustics calls it a deep-channel design), which allows the voice coil to travel farther without bottoming out, thereby increasing bass output. The Micro90 system is available in black or white. You can buy it with a tonally matched center-channel speaker as the Micro90t for \$1,000 and add a pair of VRS Micro surrounds for an additional \$200. Boston Acoustics also markets a scaled-down version of the Micro90 system, the Micro80, for \$400.

The Cambridge SoundWorks Ensemble II sub/sat system, one of four Ensemble speaker trios, exemplifies the simplicity and economy of designs by the company's co-founder, Henry Kloss. Back in the 1960's and 1970's, Kloss developed classic speakers for such brands as Acoustic Research, KLH, and Advent. If you like factory-

outlet shopping, the Ensemble II will go easy on your wallet: You can buy it directly from Cambridge SoundWorks outlet stores in New England and California, or by factory-direct mail-order, for \$500. The speaker trio is also sold nationwide in Best Buy stores. To further enhance value, the package is covered by a generous seven-year warranty.

The Ensemble II system comprises a pair of 8¼ x 4½ x 5¼-inch satellites and a 16¼ x 7⅞ x 14¼-inch passive bass module with two 6½-inch woofers. The two-way satellites are housed in a rugged plastic enclosure with a suede-like charcoal-gray or white finish. As a thoughtful touch, Cambridge builds crossovers into both the satellites and subwoofer, which allows greater wiring flexibility than you get with most sub/sat systems. A six-piece home-theater version of the Ensemble II is available for \$910. Cambridge SoundWorks' other sub/sat systems are the Ensemble (\$600), the Ensemble III (\$350), and the Ensemble IV (\$250).

The speakers that make up Celestion's SoundStyle series live up to their name. The curvaceous molded-polypropylene enclosure housing the MPI satellite, for example, is available in a white or gray textured finish. The three-sided cabinet, which measures roughly 11⅞ x 6 x 9 inches, has an integral stand/bracket that works for mounting it on walls or the ceiling. Besides providing a sleek Euro look, the cabinet's curved side panels are said to help eliminate internal resonances from the speaker's 4½-inch woofer and 1-inch soft-dome tweeter; the MPI's two small, elliptical ports are flared to reduce noise.

The large elliptical port in the center of Celestion's CSW powered subwoofer complements the look of the MPI satellites. Within its 10 x 20½ x 18-inch enclosure is an 8-inch woofer, an ad-

justable crossover, and a 75-watt amplifier. The CSW, which is rated down to about 35 Hz, accepts either line-level or speaker-level inputs. The MPI satellites are available separately for \$299 a pair, the CSW subwoofer for \$449. For a home-theater setup you can pick up another pair of MPI's and add either the Center2 (\$249) or CSC center speaker (\$179).

The modular Take 5 speaker system from Energy Loudspeakers derives its name from the Hollywood expression for starting film sequences. The system's primary component is the Take 2 satellite speaker (\$180 a pair), which combines a 3½-inch carbon-graphite "woofer" and a ¾-inch multilaminate-dome tweeter in a 6¾ x 4 x 5⅞-inch enclosure with a nonresonant Spherex baffle. The Take 2 is available with a high-gloss black or white finish. You can create a sub/sat system from a pair of Take 2's by adding one of three powered subs, or build a home-theater system by adding a sub and the Take 1 center speaker (\$150), a horizontal version of the Take 2 that has two 3½-inch drivers.



The 6¾-inch-tall Take 2 satellite (middle photo, \$180 a pair) is the key component of Energy's Take 5 system. It mates with the Take 1 center speaker (bottom, \$150) and the ES-8 powered subwoofer (top, \$300).



The satellites in Eosone's RS 702 system (\$850) boast a second, rear-firing tweeter to help produce fuller sound, and the RSP 910 sub (top photo) packs a 10-inch woofer and a 70-watt amp.

The subwoofers you can choose among are the ES-8 (\$300), featuring an 8-inch woofer and a 100-watt amplifier, the ES-10 (\$400), with a 10-inch woofer and a 100-watt amp, and the ES-12 (\$600), which has a 12-inch woofer and a 150-watt amp. All three amplifiers use MOSFET's, have an adjustable crossover and a phase control, and incorporate a soft-clipping circuit to reduce distortion if the subwoofer is overdriven.

Eosone International loudspeakers are designed by Arnie Nudell, co-founder of Infinity and Genesis Technologies. The RSS 702 sub/sat system (\$850) uses a pair of handsomely styled satellite speakers featuring a dual-tweeter dipole design Eosone calls a Radiant Surround Field. One 1/2-inch tweeter fires forward along with a 4-inch mid-range driver while a matching 1/2-inch tweeter fires from the rear. The design is said to produce a cleaner, more coherent sound than conventional speakers by reducing

side reflections from the walls (and the TV screen in the case of an A/V setup). The 7 x 4 1/2 x 5 1/2-inch satellites are available in black or white.

The matching RSP 910 powered subwoofer, which can accept both line-level and speaker-level inputs, packs a 10-inch driver, an adjustable crossover, and a 70-watt amplifier in a cabinet measuring 13 x 17 x 15 1/2 inches. Available in black, the bass-reflex subwoofer is rated down to 32 Hz. If you're interested in home theater, you can buy the RSS 703 package (\$1,000), which includes an extra satellite speaker for the center channel, and add a pair of surround speakers. Or you can buy the RSS 705 package (\$1,300), which has five satellites, from the get-go. Eosone doesn't sell its satellite speakers separately.

Infinity's Minuette series begins with the Multi-Purpose Satellite (MPS), which is minute in size and price at \$169 a pair. The 7 x 4 3/4 x 3 3/4-inch sat houses a 1-inch polycarbonate-dome tweeter and a 3 1/2-inch "woofer." For movie fans, Infinity offers a \$389 home-theater package of four MPS sats and the horizontally oriented Minuette Center Channel speaker (also available separately for \$149).

The complementary BU-1 powered bass module (\$399) squeezes a 50-watt amp, an adjustable crossover, and an 8-inch downward-firing driver into a box that occupies a mere 1 cubic foot of floor space. The BU-1's small footprint makes it one of the easiest bass modules to hide. If you can spare a couple more cubic inches and an extra \$150, you may want to opt for Infinity's BU-2, which has a 12-inch



Infinity's Minuette series encompasses the 7-inch-tall Multi-Purpose Satellite (\$169 a pair), the Minuette Center Channel (\$149), and a matching powered sub, either the BU-2, with a 12-inch woofer (shown, \$499), or the BU-1 (10-inch woofer, \$399).

woofer that's said to extend response down to 30 Hz (the BU-1 is rated down to 45 Hz).

Among the packages offered in JBL's SoundEffects modular speaker series is the Music20 sub/sat system (\$1,000), which combines a pair of 14 x 4 3/8 x 6-inch columnar satellites and a hefty 17 3/4 x 10 x 24-inch powered subwoofer that's rated down to 40 Hz. Each satellite houses two 3 1/2-inch midrange drivers and a 3/4-inch titanium-composite dome tweeter, while the sub packs two 8-inch drivers and a 150-watt amp. And when you're ready to take the plunge into home theater, you can add the SoundEffects Movies20 package (\$600), which includes a matched center speaker and a pair of surrounds with integral mounting brackets. The front satellites can stand on their own next to your TV or tuck easily into corners.

**K**lipsch built its reputation on high-sensitivity, horn-based speakers that are said to deliver more wham per watt than all-cone systems. The company recently took its first steps onto the sub/sat stage with the Rebel KSS-3 system (\$750). Affectionately dubbed the "Little Big Horn" by Klipsch engineers, the system's 8 1/2 x 5 3/4 x 5 1/2-inch satellite does its job using a 4-inch woofer with a horn-loaded 1-inch tweeter suspended above it, an arrangement that Klipsch says is designed to enhance imaging. The Rebel's robust 93-dB sensitivity rating all but guarantees abundant sound from even the lowest-powered receivers.

Rated down to 40 Hz, Klipsch's matching K-RSW powered subwoofer



mates a 6½-inch driver, a crossover offering seven low-pass cutoff points, and a 50-watt amp in an enclosure that's 15 x 9 x 21½ inches. When you're ready to go the home-theater route, you can add the matching KSS-1 center speaker for \$199 and pick up an extra pair of KSS-2 satellites for \$299. Klipsch also offers the \$950 KSS-4 package, which is the KSS-3 system plus a KSS-1 center speaker.



The Klipsch Rebel KSS-3 system (\$750) packs a punch with a pair of efficient KSS-2 horn-loaded satellites and the K-RSW powered sub, which has a 6½-inch woofer and a 50-watt amplifier in a 15 x 9 x 21½-inch cabinet.

Polk Audio recently updated its popular RM3000 sub/sat system by replacing the passive subwoofer with the PSW50 powered sub and renaming the trio the RM3300. For \$799 you get the PWS50 and a pair of RM2000II satellites, each housing a 3½-inch midrange driver and a ½-inch polycarbonate-dome tweeter in a 7 x 4¾ x 5½-inch enclosure available in black or white. Rated down to about 35 Hz, the PSW50 contains an 8-inch proprietary Dynamic Balance woofer with a polymer-composite cone, a 65-watt power amp, and a 130-Hz fixed crossover in a 13¾ x 11 x 20-inch black cabinet with a downward-firing vent. The subwoofer features a signal-sensing automatic on/off circuit.

For home theater you can add Polk's matching center speaker, the \$299 RM2500C, and a pair of M1 surrounds (\$200 a pair). Or you can go for the complete six-speaker

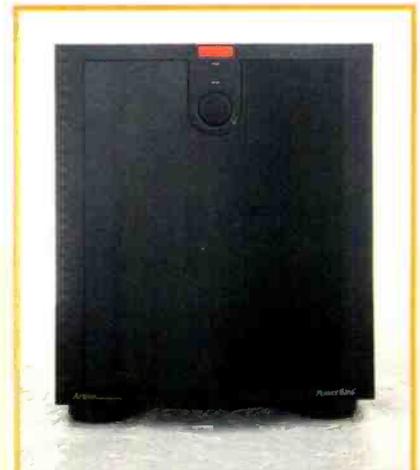
home-theater system, the RM5300, for only \$1,099.

Rock Solid Sounds, the budget brand created by speaker master B&W, shook the sub/sat world when it introduced the Solid Monitor back in 1992. The speaker's stylish, molded-plastic enclosure and versatile stand/mounting bracket (now widely copied) broke new ground. The HCM 1 satellite speaker, a refinement of the Solid

Monitor, is a shining example of European industrial design. Finished in satin black or white and priced at \$200 apiece, the 9¾ x 6½ x 6-inch HCM 1 houses a 1-inch polyester-dome tweeter and a 5-inch polypropylene woofer and comes with two stand/mounting brackets to accommodate a variety of placement scenarios in either a vertical or horizontal orientation. With a frequency response rated as 70 Hz to 20 kHz ±3 dB, a pair of HCM 1's could even serve a small or secondary stereo system very

nicely all by themselves.

Add the companion PowerBass subwoofer (\$400) to a pair of HCM 1's, and the system will rumble down to 38 Hz. A vented design housing an 8-inch



The European-designed HCM 1 satellite from Rock Solid Sounds (\$200 each) rests on a ball-joint stand. It mates with the PowerBass subwoofer (top, \$400).

woofer and a 70-watt power amp, the 13 x 15½ x 13½-inch sub is magnetically shielded (many subs aren't) and accepts both line-level and speaker-level inputs. Since Rock Solid sells the

Most sub/sat systems today are easily upgradable for home theater. Shown is an A/V setup using five Rock Solid Sound HCM 1 satellites and a companion PowerBass sub.



HCM 1 satellites individually and doesn't market a center speaker per se, you can add 'em one or two at a time as you move along the path to home theater. Listeners with more modest tastes and budgets can team the PowerBass with the HCM 2 satellites, which cost half as much as their beefier siblings.

The three-piece-system route is an option well worth considering if you like the idea of full-bodied sound without the clutter of big speakers. And when the surround-sound bug finally does bite, upgrading sub/sat combos to home-theater status is usually a hassle-free matter of adding matching center and surround speakers — often at a cost of only a few hundred dollars. When it comes to speakers, three is definitely not a crowd. □

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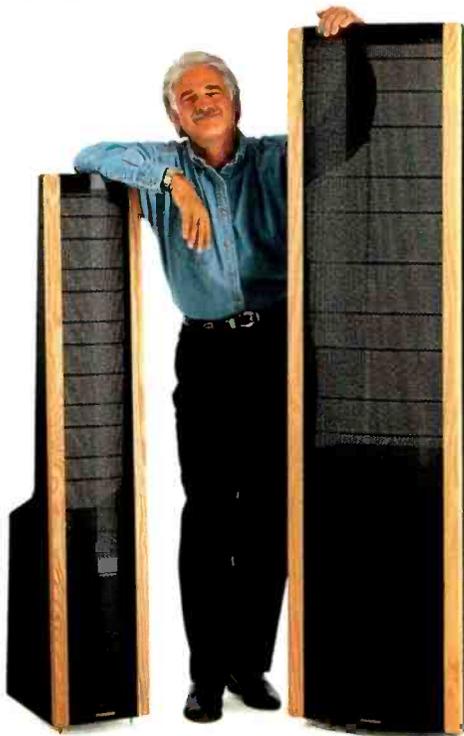
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# VIDEO SHOWCASE



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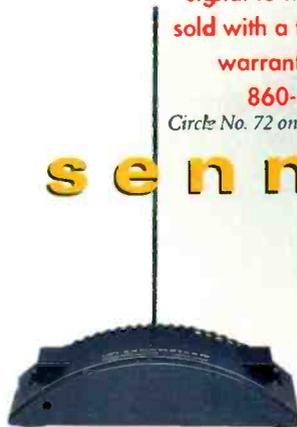
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## sennheiser



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FROM THE VERY BEGINNING OF HI-FI, it's been said that the perfect audio amplifier should act as a "straight wire with gain" — that is, it should amplify the audio signal with nothing added and nothing shaved off the top. But this ideal is just that — an ideal. Like decaf coffee and fat-free hot dogs, there's always a trace of the stuff you don't want mixed in there, somewhere down around the "undetectable"

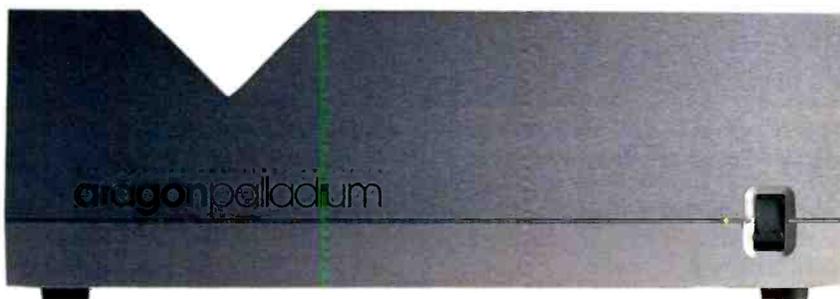
level. And just like the question of whether you can get a buzz from a cup of decaf or feel your love handles grow after a fat-free bun-length or three, the question of whether people can hear "undetectable" levels of distortion has led audiophile circuit designers to constantly refine their amplifiers and push them ever closer to that proverbial straight wire with gain.

To get a sense of the state of today's amplifier art, I chose ten of the most exotic amps on the market and asked the men behind them to talk about what makes these designs special.

### Aragon Palladium Mk. II

The single-channel, or "monoblock," Aragon Palladium Mk. II (\$5,000 a pair) is the flagship power amplifier from American manufacturer Mondial. And while you might think that the distinctive notch carved into the top of the Palladium's chassis is strictly for appearance, Mondial's Tony Federici says there's more to it than meets the eye. "The chassis design of the Aragon Palladium is purely a case of form follow-

ing function," he explains. "The notch that extends through the amplifier is created by the heat sinks and allows the heat to rise and dissipate even if a shelf or component is placed immediately above the Palladium. And we put the notches



The notch in the Aragon Palladium Mk. II (\$5,000 a pair) allows heat to dissipate from the 125-watt monoblock amp.



The 300-watt-per-channel Carver Research Lightstar Reference (\$3,995) ramps its voltage up and down as it tracks the input signal.

on opposite sides of the matched pair of Palladium monoblocks so you can stack them on top of each other without having the heat of the bottom amplifier rise up into the heat sinks of the amp on top."

Despite the renewed interest in retro-style tube audio, Mondial remains, as always, solidly in the solid-state camp. "Our amplifiers are solid-state because when it comes to sound reproduction, we are at the forefront of technology," Federici says. "Some people like the way tubes alter the original music — and some people would like to alter the colors in a Van Gogh so that it matches their sofa. The Aragon Palladium is engineered to reproduce the original signal as accurately as possible."



The first amp from Ayre Acoustics is the V-3 (\$3,450), featuring balanced circuitry with no negative feedback. The stereo unit delivers 100 watts per channel.

Federici emphasizes his amplifiers' ability to maintain their accuracy even when driving the demanding impedance loads presented by many of today's high-end loudspeakers. "Each Palladium monoblock is capable of delivering all the power the AC line can provide and is completely stable into any impedance load," he says. "That's why many of the world's finest speakers are engineered with Aragon electronics as part of the reference system."

The Palladium Mk. II is rated to deliver 125 watts into 8 ohms and a whopping 600 watts into 4 ohms. Its power-output stage is biased to run in full Class A all the way up to its rated output for exquisite sound quality at the expense of a chassis you can brown hot-dog buns on.

How close does the Palladium come

to the ideal amplifier? Federici: "We are dedicated to creating the straight wire with gain by employing as few components in the signal path as possible while still satisfying the second criterion. A hi-fi system attempts to recreate a live event so accurately that it is indistinguishable from the original reality, so Mondial's role is to push the amplifier design envelope until we are capable of perfectly and totally deceiving the senses."

### Audio Note Gaku-On

If you want a pair of these 55-watt Class A Japanese monoblock tube amplifiers, you better make sure the bank will let you tap your platinum card to the tune of a cool quarter mil —

\$252,500, to be exact. But although the Gaku-On's price earns it the title of World's Most Hideously Expensive Amplifier, ask the true believers who've heard them and they'll tell you the Gaku-Ons deliver the best 55 watts your ears will ever hear.

"The Gaku-On relates to other high-end amps like a cruise missile shoots past a hand-thrown spear," says Herb Reichert, manager of Audio Note's American operations. "Yes, it costs \$252,500, but nearly every part is made from scratch, and each pair of Gaku-Ons takes over a thousand hours of labor to produce."

Hiroyasu Kondo, Audio Note's founder and chief designer, believes that all existing audio components fail to reproduce the "micro-components" of voltage and current that are the fabric of recorded music. So Audio

Note refines its own metals and draws its own wire through diamond die at very low temperatures. Says Reichert, "There's over 22 pounds of very fine-gauge, hand-drawn, age-annealed silver wire in each pair of Gaku-Ons [total weight of each amp comes to about 60 pounds]. We also design and manufacture our own hand-drawn silver-foil capacitors and tantalum resistors, which are vastly more expensive than the off-the-shelf components used by other manufacturers. And we even use a special solder invented by Kondo that costs over \$300 a kilo to manufacture."

Why would someone shell out more than a quarter of a million dollars for a 55-watt amplifier when they could buy a similarly rated model for 500 times less? As Reichert puts it, Audio Note gear helps create "a new musical culture for the home. Today, few couples or families will sit quietly and listen to music for the time of a complete CD — but they will sit together for 90 minutes and watch a video! Audio Note makes equipment that is designed to draw you in and keep your attention. One of the main differences between live and reproduced music is that live music picks you up and carries you away. Good audio equipment should do this in an obvious way — ours does!"

### Ayre Acoustics V-3

One of the most talked-about new audiophile amps, the Ayre Acoustics 100-watt-per-channel V-3 (\$3,450) is the brainchild of Ayre's president/designer Charlie Hansen, who first hit the scene with his acclaimed speaker designs at Avalon Acoustics. But while Hansen chose to go with a solid-state design for Ayre's first amp, he remains a lover of tubes at heart.

"In my experience, there is a definite ranking of the sound quality of active devices," he says. "All else being equal, I would rank them as follows: tubes, field-effect transistors [FET's], bipolar transistors, and integrated circuits. The problem with tubes, however, is that they need continual replacement. Not only is this a hassle and expensive, but the supply of quality tubes is increasingly uncertain. That is why we chose to use FET's exclusively in all Ayre products. It requires a bit more effort to coax a really good sound out of FET's compared with tubes, but by using totally balanced circuitry with no negative feedback,

we have achieved the sonic characteristics that great tube amplifiers are noted for."

Like many other high-end designers, Hansen believes that a short signal path results in less chance of signal degradation. "In the V-3, everything is laid out to minimize the length of the signal path and the number of connections. The circuit cards contain all of the audio circuitry and are mounted vertically on each side of the amp. In fact, the only wires in the audio circuitry are from the output stage to the speaker connectors."

But ask Hansen how close the V-3 comes to a straight wire with gain, and his answer may surprise you. "In a very real sense," he says, "Crown achieved the paradigm of the straight wire with gain 25 years ago with the introduction of the DC-300, an amplifier that for all practical purposes measured perfectly. Unfortunately, despite all of its virtues, the DC-300 doesn't do justice to the music, because the measurements don't gauge such distracting factors as grain, glare, or etched high frequencies. There are performance factors that cannot yet be measured, but these factors do impact the emotional power of the music."

Hansen contends that, ultimately, specs don't tell the whole story. "We have a place for comments on our warranty cards, and most of the comments we get run along the lines of 'I can't believe how the Ayre transformed my system' or 'I only thought changing speakers would make this much of a difference.' Compared with a mass-market receiver, a high-end amplifier like the V-3 offers a completely different relationship to the music and the performance."

### Carver Research Lightstar Reference

No stranger to STEREO REVIEW readers, Carver's line of home audio electronics spans from the budget-priced all the way to the flagship Carver Research Lightstar Reference (\$3,995), a high-end amplifier in every sense of the term. It's rated to deliver 300 watts per channel into 8 ohms and a massive 1,200 watts into 2 ohms. Unlike a conventional solid-state amplifier, the Lightstar makes use of what Carver calls a "tracking" power supply to radically increase power efficiency. This unique power supply continuously ramps its voltage up and down as it tracks the input signal, always meeting



Conrad-Johnson's top-of-the-line amplifier is the Premier Eight-A (\$16,000 a pair), a tube monoblock rated at 275 watts.



The 140-watt-per-channel Kinergetics Research KBA-280 (left, \$2,795, shown with the three-channel KBA-380) includes a special distortion-canceling circuit.

signal demand but never wasting energy during softer musical passages. As an added benefit, Carver claims that the Lightstar amplifier can drive even the most torturous speaker loads all the way up to the limits of your house current, a feat that would melt lesser amps into a pool of silver goo like that skinny *Terminator 2* guy with the really good hair.

Jim Croft, Carver's vice president of research and development, is a life-long fan of tube amps, but he says Carver's choice to go with solid-state topology for the Lightstar lies in the quest for accuracy.

"Carver Corporation has produced expensive and highly acclaimed tube amplifiers in the past," explains Croft, "but when it came time for the Lightstar project, the best performance was available from the latest solid-state de-

vices—power MOSFET's for the 'Digital Transformer' power supply and bipolar power devices for the linear portions of the circuitry. In our explorations of tube amps, we found that there were a few things that made them different and in some ways desirable, but they were all things that we could either duplicate or improve upon with solid state. Probably the most surprising thing about the most 'musical'-sounding tube amps is that if you eliminate their distortions, they begin to sound just like the best solid-state designs. Improve a tube amp and it sounds more like solid state? As blasphemous as it seems, that is indeed what happens."

Croft points to real-world speaker-driving conditions as the main reason why different amplifiers sound and measure differently when driving the



**Pumping out 400 watts, each of the Krell Audio Standard monoblocks (\$32,500 a pair) has two chassis, one for the audio circuitry and one for the power supply.**

same speaker. "We have seen a number of power amplifiers over the years that were a 'straight wire with gain' until they were hooked up to a real speaker load and became less than ideal. While many amplifier designers continue to 'improve' the signal path with their favorite new capacitors and resistors, the more significant and difficult problem goes unresolved: the unpredictable amplifier/speaker interface. Here at Carver, we see that as the final frontier of amplifier development. With the Lightstar Reference, we finally have what we feel is state-of-the-art neutrality in the power-amp part of the signal chain, regardless of the speaker load being driven. And that allows people to focus on improving the rest of the system."

### Conrad-Johnson Premier Eight-A

Conrad-Johnson's tube amplifiers are widely considered some of the most musical designs at any price. The Premier Eight-A 275-watt monoblock (\$16,000 a pair) is the company's flagship model, its biggest effort to date. Bill Conrad says that although he and co-founder Lew Johnson favor tubes for their best designs, they work with solid-state designs, too — and that working with one often goes to the development of the other.

"Unlike our usual choice of Presidential candidates," Conrad says, "both solid state and tubes have a number of virtues. While

Conrad-Johnson is better known as a tube company, we have been developing solid-state hi-fi for 18 years. At several points, we felt we had equaled our best tube efforts with our most recent solid-state work. Yet, in each case, applying what we had just learned in the solid-state design exercise led to an even better tube design. The Premier Eight-A is a perfect example of this design evolution."

Conrad emphasizes that while the company's tube amps remain its best-sounding models, its solid-state amps offer a similar musicality at a much lower price. "At this point, when it comes to achieving our goal of reproducing the immediacy of the musical experience, our best efforts in tubes are better than any solid-state work, including our own. But the result is

expensive, and the level of performance offered by our solid-state amps, like the \$2,995 MF2300-A at about one fifth the price of the Premier Eight-A, is very satisfying. That's why we feel compelled to offer our solid-state designs on the market. We feel music lovers should have the option."

### Kinergetics Research KBA-280

The idea that an accurate amplifier should behave as a straight wire with gain is all well and good, but what if you believe that even a straight wire measurably and audibly degrades the signal? Tony DiChiro, president/designer of Kinergetics Research, has long maintained that even the simplest signal path introduces "hysteresis distortion," or changes in the signal waveform. That belief led to DiChiro's Hysteresis Distortion Canceling Circuit, which attempts to counter the effects of signal-path degradation by introducing an equal-but-opposite corrective distortion.

"Hysteresis distortion is a form of friction, or nonlinear distortion, that is present in all mechanical and electronic devices, including circuit components like transistors, capacitors, contacts, power supplies, even wire," DiChiro explains. "Our patented Hysteresis Distortion Canceling Circuit was invented to subtract these distortions from the main signal path in the amplifier."

Kinergetics' flagship amplifier is the THX-certified KBA-280 (\$2,795), a 140-watt solid-state stereo model that, like all of the company's amps, features the distortion-canceling circuit. This gives it a distinctively different sonic flavor from amps designed for strict neutrality.

"We discovered that the major difference between transistor amplifiers and those using vacuum tubes is the amount of hysteresis distortion in the circuit," DiChiro points out. "So we chose to go with solid state because it is more reliable and allows more dynamic control of the speakers." Even with his distortion-canceling circuit, however, DiChiro sees the perfect amplifier as being just beyond his grasp. "We are getting closer to a straight



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wire with gain, but we are not there yet. That's what keeps us going."

### Krell Audio Standard

The Connecticut-based Krell is synonymous with awesomely powerful, highly refined solid-state amps that top many an audiophile's wish list year in and year out. Yet Krell CEO and chief designer Dan D'Agostino cut his teeth building loudspeakers, not electronics. "As a speaker designer originally, I never found an amplifier that fully met the demands of a speaker," he says. "That's when I decided to build high-power, Class A amplifiers that could meet any demand."

D'Agostino feels that while an amplifier's task is simple, the technology required to achieve optimal performance is complex. "In a broad sense, a power amplifier has two primary jobs: amplify the musical signal without change and drive loudspeakers. By using technologies such as Krell's innovative 'current mode gain' topology, fully regulated output stages, direct-coupled circuitry, and our patented Sustained Plateau Bias circuitry, we present the most complete signal to a

pair of speakers. We also use massive power supplies and a tremendous amount of ultra-high-speed Motorola output devices that are built exclusively for Krell."

The 400-watt Krell Audio Standard monoblocks (\$32,500 a pair) represent D'Agostino's latest thinking on the ultimate power amplifier. "The construction and appearance of the Audio Standards correlate directly to their resulting sonic performance. Each channel consists of two chassis, one for the audio circuitry and one for the power supply and regulator circuitry. Conceived as an engineering exercise, the Audio Standards illuminate the possibilities in music reproduction when an uncompromised design path is followed."

A long-time solid-state proponent, D'Agostino explains that "the consistent improvements in solid-state technology have allowed Krell to design and manufacture components of ever increasing resolution. On the other hand, vacuum tubes have remained essentially the same for the last 40 years."

Even though the mighty Krell Audio Standard has received raves all over the world, D'Agostino isn't ready to declare victory just yet. "Every new generation of Krell amplifiers has outperformed its predecessors. So, every time we feel that we have reached the 'straight wire with gain' level, our next step shows us that we still have more room to grow."

### Mark Levinson No. 33

Without a doubt, the Mark Levinson No. 33 monoblock amp (\$32,000 a pair) from Madrigal Audio Labs is the most visually arresting high-end power amplifier in the world. With its tall, vertically oriented chassis and floorboard-creaking 220-pound weight (that's each amp, for a total of 440 pounds for a stereo pair, or more than half a ton to power up a home theater), the No. 33 quite literally towers over all comers.

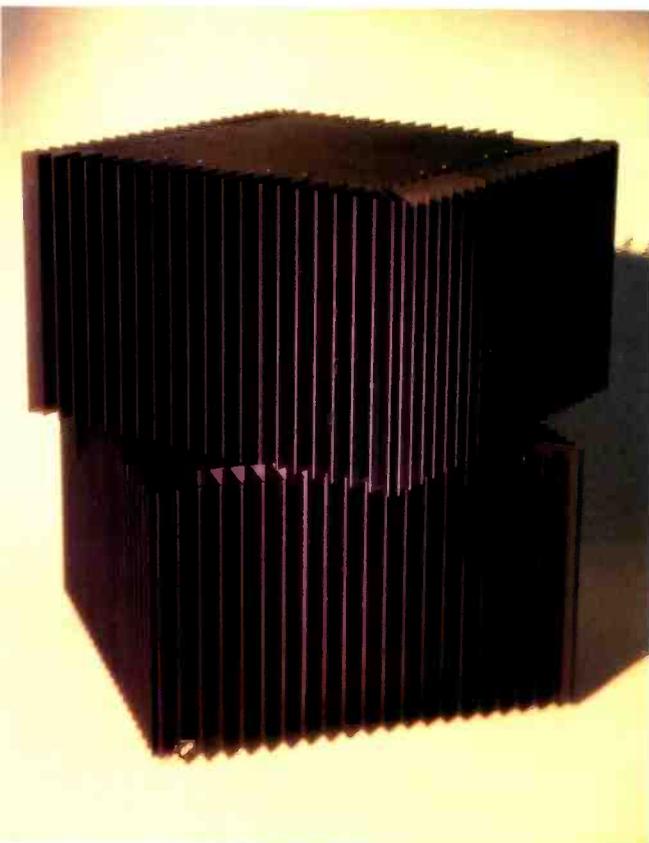
Madrigal's Michael Wesley says that the company's major design goal was to combine, as he puts it, "the most delicately accurate reproduction of musical signals with power capabilities exceeding the requirements of the most demanding of speaker loads. This is roughly like building a car that combines the agility and handling of the finest sports car with the power of a dual-engine diesel locomotive."

According to Wesley, the unique tower shape of the No. 33 isn't a gimmick, but instead confers many engineering advantages. "To meet the No. 33's specification of 2,400 watts of continuous power into a 1-ohm load [its 8-ohm rating is 300 watts], the amplifier has to be physically large as well as a single-chassis design. Splitting it into two separate chassis for the power supply and the audio circuit would degrade the current delivery between the two stages. A combination of desirable thermal distribution and wanting to reduce the floor space occupied by such an imposing structure led to the vertical orientation of the amplifier."

In the era of the \$500 all-in-one A/V receiver, a pair of amps costing upward of thirty big ones might seem a tad loco. But Wesley is unrepentant about the No. 33's astronomical price. "In a well-designed playback system, the No. 33 sounds better than any other amplifier known to us," he says, "and this is its primary reason for existence. Beyond that, the No. 33 offers the ability to drive any speakers you may choose, where some speaker designs would shut down or even burn up a \$500 receiver as well as many expensive and exotic amplifiers. We are well aware that our Mark Levinson products are very expensive, but their pricing is directly related to the materials and labor that is put into them. If we could produce the same overall quality for less, then we would certainly do so."

### Pass Laboratories Aleph 1.2

If Nelson Pass had gone off and lived out the rest of his days in a cave after designing groundbreaking amplifiers for Threshold and Adcom in the Seventies and Eighties, his entry into the high-end hall of fame would still be secure. But with the launch of Pass Laboratories several years ago and an entirely new line of innovative single-ended solid-state amplifiers that have taken the world of high-end audio by



Each of Pass Laboratories' Aleph 1.2 mono amps (\$14,000 a pair) delivers 200 watts.

storm, he shows no signs of resting on his laurels. Hardcore audio nuts swear that the Aleph 1.2 (\$14,000 a pair) is simply his best-sounding design yet.

Unique among solid-state amplifiers, the 200-watt Aleph 1.2 monoblock eschews the usual complementary push-pull output stage for a single-ended design, much in the same vein as the retro-style triode tube amps seeing a renaissance in the high-end. Pass says simplicity is the reason: "Simple sounds better because it means fewer components in the signal path. Simple circuits have less complexity in their behavior, and they are more predictable and reliable. The big trick is to get accurate performance out of simple circuits. The Aleph 1.2 is a single-ended Class A amplifier with only two gain stages and only a little bit of feedback. You can trace the signal path from input to output passing through three resistors and two MOSFET's."

But while the single-ended tube amplifiers have garnered controversy for measuring so poorly on the test bench, Pass's single-ended solid-state power amps actually measure quite well. According to Pass, "The Aleph 1.2 measures as well as some power amplifiers having ten gain stages and tons of feedback, but it sounds better because its characteristic is simpler and more natural. Single-ended Class A operation offers the simplest linear topology, and its distortion products are the least offensive musically. The Aleph 1.2 uses power MOSFET's for the gain devices exclusively, as they offer the best performance available in a simple Class A circuit."

### Jeff Rowland Design Group Model 9T

The graceful, rounded edges of a Jeff Rowland amplifier are a visual analog to the reputation his amps have for gentle, smooth musicality among audiophiles seeking the kind of sweetness from their hi-fi systems that they hear during a live performance of acoustic music. And the giant Model 9T monoblock (\$28,000 a pair) marries that design grace with 350 watts of punch.

Rowland is one of the few high-end amplifier designers to focus on mechanical resonance as an enemy of accurate performance. "One of the keys



The 350-watt Model 9T monoblocks (\$28,000 a pair) from Jeff Rowland Design Group are built to control mechanical resonance.

to the excellent performance of Jeff Rowland Design Group products," he says, "is the fanatical attention to detail, especially with regard to control of mechanical resonance within the chassis and the electrical components. The relationship between physical movement, electromagnetic field interactions, and electron flow has been recognized for decades. Since an extremely solid, low-resonance mechanical structure is essential to minimize unwanted physical movement and microphonics, all chassis components of the Model 9T amplifier are machined from solid aluminum in specific non-divisible, nonharmonic dimensional ratios. As a result, the amp embodies a 'form follows function' ideal that results in a strikingly beautiful appearance as well."

Another area Rowland pays extreme attention to is the deleterious effect that electromagnetic and radio-frequency interference has on audio equipment. "Our environment during the last few years has been contaminated by spurious emissions from a multitude of sources like computers, cellular telephones, and other telecommunication systems. This electromagnetic energy ultimately contaminates our audio systems, obscuring the subtle nuances of musical reproduction and preventing a deeper appreciation of music and involvement in it. Our products are designed to eliminate these effects by using advanced techniques such as computer-aided design circuit layout and filter components." Rowland goes so far as to pro-

duce special high-capacity battery power sources for his products, to fully isolate them from the effects of AC line power.

Despite the high levels of power available from some of his larger amps, Rowland ultimately feels that the state of the art in amplifier design is still shy of the mark. "A dynamic range of 120 dB is needed to faithfully reproduce all the subtleties of music," he says. "When the logarithmic value of 120 dB is expressed in linear terms of a ratio, it is 1 million to 1, or a purity of 1 part per million. The best audio amplifiers can achieve only an 80-dB ratio, or 10,000 to 1, of musical expression to silence during complex musical passages. Therefore, much work is yet to be done."

I began this article with an old saying, so I'll end it with another: High-end amplifier design is as much an art as it is a science. And while there's no end to the divergence of philosophies among today's high-end designers, there's one thing they can all agree on: Since nobody has built the perfect amp yet, it pays to stay on top of the trends so you don't miss it when it happens. □

### RESOURCES

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# CD Storage

**Ring in the new year right by making a resolution to organize your disc collection by Rebecca Day**



The year was 1986. You were cool. You bought a compact disc player. But at \$15 a pop you didn't buy many discs. You listened to the same ones over and over, just to get a higher return on your investment, and figuring out where to store your collection was not an issue — you could stack a half-dozen CD's on any speaker cabinet. Even after you'd accumulated more discs than you could fit on top of your speakers, your storage needs remained minimal. Forty or fifty slots would do it, and that left you plenty of room to grow. After all, you still had your LP's and cassettes.

Flash to 1996. The LP's are carefully preserved in the basement, and your favorite tapes were gobbled up by the cassette eater in the car. You've got a CD changer in the trunk, a CD boombox for the beach, and a CD-ROM drive in your PC. The CD's you feed them are still pricey, but somehow your budget has made room for multiple-disc runs to the music store. These days, CD's are spilling out everywhere in the entertainment room. You need order and space. And if you think you have a pressing need for CD storage now, just wait until DVD's start arriving in stores this year. The question isn't *whether* you should buy a new storage unit for your discs, but *how many it can hold*.

## CD Towers

One of the great things about CD's is their size. Furniture and accessories manufacturers didn't have much creative license when it came to designing cabinets to store LP's, but the CD jewel box is small enough to inspire a host of artistic solutions. Take Sm'art Design's Ne-Onn Rax, for example. This angled CD tower illuminates the edges of a column of CD jewel boxes with a fluorescent back-light that can be tinted by various color filters. It's available in black steel in a 50-CD version (\$99) or a two-column 100-CD version (\$139); it also comes in pine or maple.

Furniture maker Billy Bags Designs, on the other hand, offers "The City," a series of CD towers that re-

The City from Billy Bags Designs is a modular system of CD towers ranging from 2 to 7 feet tall priced from \$59 to \$209. The black melamine towers hold 29 to 109 CD's each.

semble a city skyline when placed together in varying heights. The black melamine towers measure 6¼ inches wide and 5½ inches deep and are available from 2 to 7 feet tall (\$59 to \$209) to hold 29 to 109 CD's.

The slim profiles, varying heights, and modular nature of CD towers make them ideal choices for apartment dwellers who have to fit storage around windows, behind doors, or wherever there's an unoccupied little nook. The individual CD slots most towers have can be a drawback, however, if you're trying to find a place for double-CD jewel cases or boxed sets. And if you organize your discs alphabetically, slots can give you a major organizational headache every time you bring home a new CD.

### Shelf Storage

The best storage solution for alphabetizers is a shelf-type system that lets you slide your discs to left or right whenever you add new ones. Floor-standing metal and wood shelf units are available from many manufacturers including Leslie Dame, J&P Enterprises, and Storadisc. The designs vary from traditional bookshelf styling, with a closed back and solid shelves, to open-back racks that support the discs with dowels.

A typical example of the open, dowel-support design is HY-Q Enterprises' CD-504TS (\$160), a wood storage rack that measures 59 x 25 x 6¼ inches and comes in natural oak or black. It holds 504 CD's or a combination of CD's, cassettes, videotapes, and video games. Wood sliders on each of the eight shelves act like bookends to keep things tidy.

If you're simply overrun with CD's, consider the 77-inch-tall, 42-inch-

**Swiveling towers in Leslie Dame's MM-396 (\$130) allow storage of nearly 400 CD's in a 12 x 16 x 45-inch cabinet.**

wide Billy Bags Pro-1000 rack (\$658). Offering room to grow, the ready-to-assemble Pro-1000 holds 1,000 discs on ten shelves, and it can be mated with additional 1,000-CD modules. The 100 CD's on each shelf are supported by tough steel rods finished in wrinkled black.

Dowel designs are contemporary and attractive, but some people might worry about the occasional fumbled CD that drops through the cracks.



**Stuart Townsend Carr's elegant CD spinners (\$525 to \$1,125) hold from 336 to 896 CD's. They're available in red oak, black cherry, or black walnut.**

Davidson-Whitehall's Storadisc CD racks have shelves that angle CD's upward for easy viewing and wood backings that prevent them from slipping out. The eight-shelf, 63½ x 31½ x 11-inch LS576 (\$395 to \$825, depending on finish) holds 576 CD's.

For something a little different, Aurora Custom Millwork's 160-CD storage unit has a light in its base that's reflected up into the five clear glass shelves, which in turn illuminate the edges of each jewel box. The \$295 unit measures 40 x 15 x 13 inches and

is made from Formica-like laminated particleboard in a variety of patterns.

### CD Cabinets

Some people like to hide their discs away but still want easy access. Others don't mind a wall full of CD's but prefer to dress them up by putting them behind glass doors that also keep dust out. Free-standing CD cabinets with doors or drawers can be had in many styles. Appealing to a traditional furniture audience, Soricé CD storage units are constructed of ¾-inch-thick solid



**Geneva's Yellow Jacket organizers can cram a lot of CD's onto a tight desktop.**



**Soricé's Series B Combo 4 (\$825 for three units as shown) is made from 3/4-inch solid oak and holds 900 CD's.**



**EZ-View cabinets from New Age Furniture feature flip-trays and a drawer for double-CD's and boxed sets.**

oak, cherry, walnut, or teak and are sanded, sealed, and finished with a satin lacquer. Most are modular, so you can purchase, for example, a base cabinet with wood doors and a top unit with glass doors. Storage capacity ranges from 450 CD's in the Soricé Combo A (\$421 in oak with a base cabinet and glass doors) to 900 CD's in the Series B Combo 4 (\$825 in black oak with black glass doors).

New Age Furniture sells a full line of EZ View cabinets with slotted "Flip & Pick" CD storage trays, which pull out to let you flip through your CD's as you might flip through titles in a record store. The Model 900CD (\$695) stores up to 1,200 CD's in five flip trays and a drawer that also holds double CD's and boxed sets. Measuring 41 x 40 x 24 inches, it has a black powder-coated aluminum frame, a black melamine top, and tempered smoke-glass doors. Simulated wood finishes and casters are optional. New Age also sells the aluminum flip trays separately for placement in existing cabinets (\$9 to \$24).

The CD Cube from Lorentz Design (\$225) measures a squat 23 x 19½ x 17¼ inches and hides up to 306 CD's in three drawers lined with a Velcro-like material; supplied stoppers stick to the liner and can be repositioned as your collection grows. The contemporary cabinet comes preassembled in any of four natural wood finishes, and matching cubes for other types of recordings or A/V components are available. For even more storage capacity and the security of locking drawers, Can Am's three-drawer MC3D+ cabinet (\$369) holds 810 CD's or 180 videotapes. It's constructed of metal

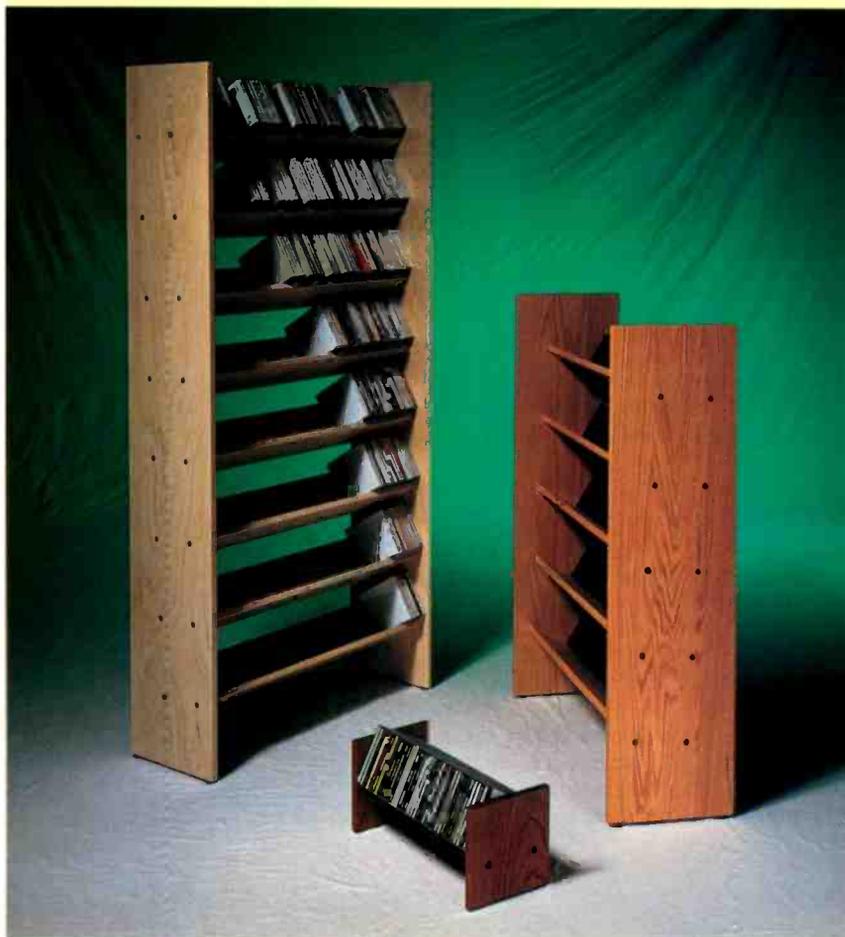
with a leather-like covering (available in different colors) and comes with drawer dividers and back stops; a wheel caddy is optional (\$99).

### CD Spinners

To make the most of tight spaces, some manufacturers offer lazy-Susan-

type racks that can house more discs than a conventional tower by allowing access from the front, rear, and sides. The revolving bookcase has always been a signature piece for furniture maker Stuart Townsend Carr, so it was easy to adapt the company's proven design to a CD spinner. Five elegantly

**Angled shelves on Davidson-Whitehall's Storadisc racks make CD spines easy to read. Shown are the LS 576 in ash (left, \$725), the LS 360 in oak (right, \$495), and the SS-36 in cherry (foreground, \$60).**



styled models are available in lacquered red oak, black cherry, or black walnut. Storage capacities range from 336 CD's in a 16 x 16 x 29-inch spinning rack to 896 CD's in a 20 x 20 x 57-inch rack (\$525 to \$1,125).

AGM Woodworking, meanwhile, offers a line of natural-wood spinners with glass doors on the front and back. Each has a 13 x 13-inch footprint; height varies with capacity, which ranges from 440 CD's in the AT440 (\$300) to 150 discs in the AT150 (\$170). Adjustable shelves allow videotape storage as well.

If you like the idea of a spinner's dense storage but don't have enough room for a revolving rack, Leslie Dame's MM-396 multimedia cabinet (\$130) manages to hold 396 CD's in a stationary cabinet with a similar footprint that can be placed directly against a wall. The clever design hides adjustable shelves behind a pair of CD towers that swivel out. Measuring 12 x 16 x 45 inches, it's available in an oak or black finish.

#### Tabletop and Portable Storage

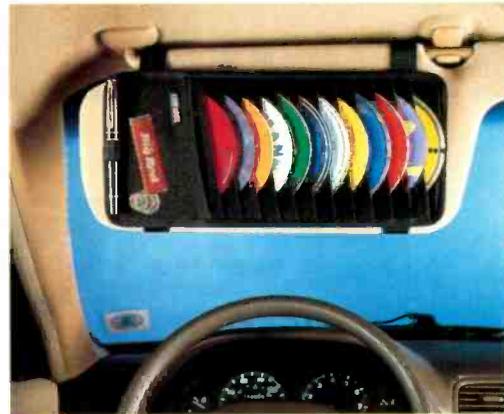
A small CD storage tray that fits atop a desk or equipment cabinet gives you quick access to a bunch of discs, whether you're switching between CD-ROM's in the office or between music discs you've pulled to make a compilation tape. A number of suppliers, including Proline and Elecom, sell flip-file trays that can store up to 20 CD's or so. But some manufacturers have found ways to squeeze even more discs into a tight footprint.

For example, just think of how many more discs you could store if you didn't have those bulky jewel boxes. That's the idea behind Geneva's Yellow Jacket tabletop organizers, which hold CD's in individual jackets that are stored in a Rolodex-like rack. The flexible jackets can be moved around or tagged to denote different categories. The ROM-505 wood organizer (\$29.95) stores 96 CD's (liner notes included) in a tiny 12 x 8-inch patch of desk space. Capacities range from 48 discs (\$17) to 192 discs (\$75); there's also a 144-disc wall-mount organizer (\$100).

Losing the jewel box is essential for portable storage, where you're trying to pack a lot of discs into a lightweight carrier that also protects them. Portable cases should always be well-padded; that's a no-brainer. But what about protecting the ink on your CD



Can Am's MC3D+ storage cabinet (\$369) keeps 810 CD's under lock and key. A wheel caddy is optional.



Case Logic's CDV-12 CD Visor (\$13) attaches to a car's sun shield, providing hidden storage for 12 CD's with easy flip-down access.

labels? Manufacturers learned early on that certain types of storage sleeves could lift the lettering from a CD. Case Logic's answer is the ProSleeve. It has a soft inner lining that protects the surface of the disc as well as front and back pockets to separate each CD from its booklet.

Case Logic's portable CD storage cases come in a variety of shapes and sizes. Padded, wallet-style cases for 12 or 24 CD's (\$13 to \$20) are finished in Koskin, a simulated leather. The company also sells photo-album-style organizers (\$6.95 to \$49.95) and "belly bags" (\$10.95 and \$19.95) that let you strap a portable CD player and a few discs to your waist. And for anyone

who's ever fumbled around for a CD case in the car, there's the CDV-12 Visor (\$13). The flat nylon sleeve attaches to a car's visor with Velcro strips to provide flip-down access to a dozen discs and a mesh pocket for change and other small items.

**W**

hen it comes to finding a solution for CD storage, think compact, think modular, and, most of all, think ahead. Remember: It's a new year, and there's a new CD-size format on the horizon. If you're resolved to finally clean up that mess in the entertainment room, you're going to need all the space you can get. □

## SOURCES

**AGM WOODWORKING**  
870 Capitolio Way #5  
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## Floating Heaven

Custom home-theater installer G. Paul Hess has worked on all types of projects. But when he saw the blueprints for *Never Say Never Again*, he knew the job would be one of his most challenging installations.

*Never Say Never Again* is one of the largest houseboats ever to make waves on Southern Kentucky's Lake Cumberland. Built by Somerset Houseboats in Somerset, Kentucky, it's a luxurious, floating palace that's 105 feet long, 21 feet wide, and 40 feet off the water at its tallest point. Hess, who works for a shop called The Trend in Louisville, was called in during construction to outfit the triple-deck behemoth with A/V gear. He planned and oversaw the installation of a home theater, several TV's and VCR's, and a system for piping music and video throughout the vessel.

The boat's owner, a prominent physician who prefers to remain anonymous, "wanted a lot of source options, and he wanted the system *entirely* hidden," Hess explains. "He also wanted it to be easy to use and reliable."

Reliability, in particular, presented a thorny problem. *Never Say Never Again* taps three different sources for AC power: shore power when it's in dock, two on-board generators that function out on the lake, and a bank of eighteen golf-cart batteries wired to a power inverter, which, in the absence of shore power, kicks in whenever the generators are off. An A/V system would have to withstand power glitches and spikes as different sources came on and off line. Consequently, the system Hess designed begins with Panamax surge protectors and a Perma Power AVR 1200 line

conditioner that keeps the AC within 5 percent of normal voltage.

An Onkyo TX-SV727 A/V receiver is the heart of the home theater, which is situated in an entertainment/billiard room on the aft side of the middle deck. Rated at 80 watts for the three front speakers and 30 watts for each of the rear surrounds, the receiver provides amplification and Dolby Pro Logic processing for the home theater as well as switching for all sources.

Source components include a JVC

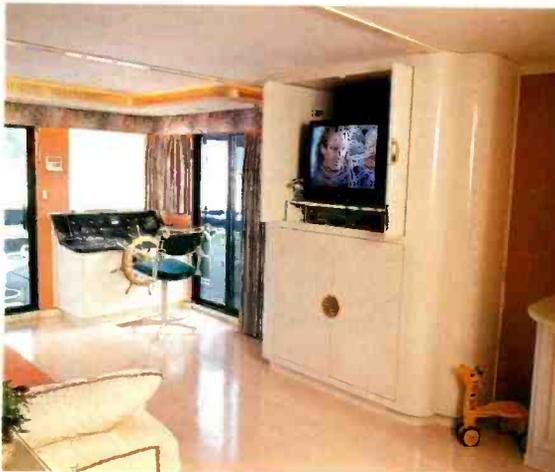
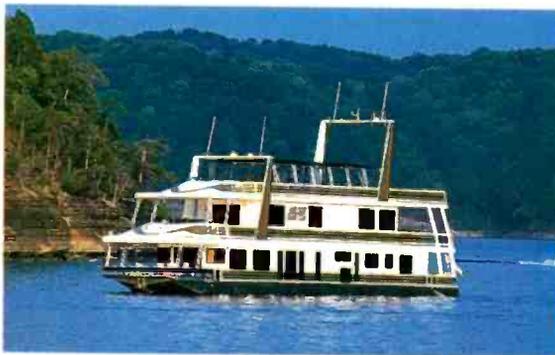
XL-MC301 101-disc CD changer, an RCA DRD2430 Digital Satellite System, a JVC HRS5100U S-VHS VCR, and an older Sony cassette deck. Video is displayed on a 46-inch Mitsubishi rear projector. The boat's owner, who likes to entertain frequently, insisted on the CD megachanger. Since the XL-MC301's component-size control module includes a single-disc mechanism, the good doctor can play a new CD without having to touch the 100-disc tower-style changer.

A DSS system was considered critical for capturing high-quality music and movies off the air. Movies are recorded by the S-VHS VCR directly from the DSS receiver's S-video output for optimum picture quality. The only problem, of course, is that a DSS dish must always point at the appropriate satellite for proper reception. That's not usually a concern when the antenna is mounted on a house, but a houseboat is a different story. Therefore, Hess attached the dish to a Radio Shack remote-control antenna rotor before mounting them on the upper deck. No matter which way the boat is turned, the dish can be tuned for maximum signal strength.

An Atlantic Technology System 250 performs speaker duties for the main theater. The 253C center-channel speaker is in a compartment above the projector in a cabinet created to hide the components and some 300 CD's. The same cabinet also houses a 252PBM 12-inch powered subwoofer, although "we had to isolate it with three layers of plywood and sound-dampening material to prevent the whole cabinet from shaking," Hess notes.

The remaining System 250 speakers are concealed above the deck's acoustically transpar-

PHOTOS BY GREG KINNEY





ent dropped fabric ceiling. The front left and right 251LR speakers flank the projector and are angled down and in at the primary listening couch, while a pair of 254.1SR dipole surrounds are installed in a soffit above the couch. "We used dipoles because we didn't want any direct sound coming down at the listeners," Hess explains.

For piping music around the boat, the Onkyo receiver's line-level multi-source output, which allows distribution of one source while another plays in the home theater, is fed to an Onkyo M-504 stereo amplifier. The M-504 delivers about 250 watts per channel into a Niles SMS10 impedance-matching box, which presents a stable 4-ohm load to the amp while allowing it to drive *eleven* pairs of MTX, Niles, and Bose in-wall and outdoor marine speakers. Niles volume controls (middle photo on facing page) provide on-site adjustment for each listening area.



Distributing S-VHS or DSS signals to the boat's four other 27- and 13-inch TV's and ancillary VCR's was simplified with a Channel Plus digital RF modulator. The modulator converts line-level video and stereo audio signals into a single RF signal that can be routed through the boat and tuned in by any TV on Channel 55. Inconspicuous Niles infrared eyes built into the cabinetry surrounding each TV connect up to a Niles IRP-6A system controller to allow handheld remote operation of the main system.

Running all the wires to the remote

locations was the most critical part of the installation. Each of the boat's three decks was built separately and had to be pre-wired before its final assembly. "Once the boat is put together, there's no going back," says Hess. "It's not like a house — you can't go in and run extra wires." The wires had to be routed just right to prevent interference from the power and instrument lines snaking around the boat, and every speaker had to be perfectly placed and functional, or they'd have had to pull down the cloth ceiling, at great expense, to repair it.

Before the final assembly, Hess's team "checked and double-checked every line," he says. "We even walked through with a video camera so that if we had to go back in and fix the wiring or speakers, we'd know where to go. Fortunately," he concludes with a sigh of relief, "we didn't have to."

— Rob Sabin

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# BEST OF THE MONTH

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



CYNTHIA LEVINE/COLUMBIA

## Shawn Colvin in a Doll's House

**W**ith her last album, "Cover Girl," Shawn Colvin stalled the terrific momentum she had going with the previous "Fat City" and her remarkable debut, "Steady On." What was the doyenne of New Folk doing recording other people's songs when she had all that anxious poetry whirling around inside of her?

Well, she was busy getting a divorce and storing up anger, as we hear in her engaging new album, "A Few Small Repairs." Throughout these songs, Colvin juxtaposes images of tools (for "repairs") and the spurned white-lace wedding gown, crafting a memorable portrait of middle-aged depression (she's 40) and the perception of failure ("Would I be saved

if I were brave and had a baby?"). A collaboration with producer/guitarist John Leventhal, who guided "Steady On" to a Grammy, "A Few Small Repairs" is quite possibly the record of her life.

You know things have gone to emotional hell when Colvin starts things off with *Sunny Came Home*, about a troubled woman who ceremoniously sets her house on fire. *Get Out of This House* is a logical progression ("Go jump in the lake," she says to her husband). A Tom Petty-ish, midtempo romp through a damaged psyche, it begins with a moody harmonic wail and then launches into the most rocking jaunt of Colvin's career. It takes the following *The Facts About Jimmy*, a gauzy and completely enveloping duet with Lyle Lovett, to put her on an even keel as it profiles her unhealthy crush on a seductive, mysterious, and eternally unobtainable man.

Not every character is Colvin, and not every vocal is purely hers either. The astute listener will find traces of Joni Mitchell, Suzanne Vega, and Rickie Lee Jones in her delivery and melodic structures. But Colvin has really developed as a weaver of textures. She's going for a bigger sound, and even if that only means some strings here, a hint of piccolo and recorder there, the instrumentation seems to grow organically from the songs, rather than being hung onto their skeletons.

Any way you look at it, though, "A Few Small Repairs" finds Shawn Colvin coming into her own. A good divorce will do that sometimes. *Alanna Nash*

### **SHAWN COLVIN:**

#### **A Few Small Repairs.**

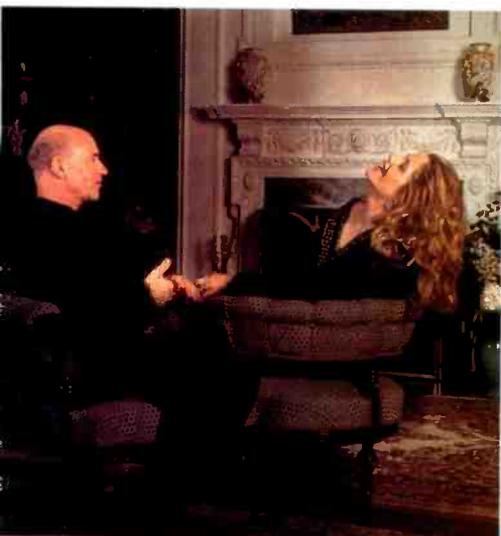
*Sunny Came Home; Get Out of This House; The Facts About Jimmy; You and the Mona Lisa; Trouble; I Want It Back; If I Were Brave; Wichita Skyline; 84,000 Different Delusions; Suicide Alley; New Thing Now; Nothin' On Me.* COLUMBIA 67119 (51 min).

## Splendid Strauss For Soprano And Orchestra

**R**ichard Strauss's final work, the *Four Last Songs* for soprano and orchestra, was completed in 1948, a few months before his death at the dawn of the stereo era. While some tend to think of these songs as being tailored to a heavy, dramatic voice — the Wagnerian soprano Kirsten Flagstad sang the première — some of the best performances on disc have been by lyric sopranos, including an early, legendary one by Elisabeth Schwarzkopf.

Now Renée Fleming, one of the finest

# BEST OF THE MONTH



BMG CLASSICS

**Christoph Eschenbach and Renée Fleming**

lyric sopranos before the public, gives us her interpretation, and what a thrilling version it is! She has a masterly control of her voice, darkening its golden sound with just enough patina to give these autumnal songs the gravity they require without losing the springtime freshness of her natural tone. The exquisite poetry of the songs invites the voice to attempt some daredevil flights of emotion. In *September*, Hermann Hesse writes that the summer "shivers quietly" and then "smiles faintly and in surprise"; both the

shiver and the smile are palpable here.

The nostalgic mood of the *Four Last Songs* is well balanced on the RCA Victor CD with five early orchestral songs, including the teasing, frolicsome *Muttertändelei* and the ardent love song *Cécilie*. The recording engineers, apparently as besotted with Fleming as everyone else, have favored voice over orchestra with a heavy hand on the balance knob. But Christoph Eschenbach and the Houston Symphony Orchestra have their chance to shine in the last 25 minutes of the disc, which is devoted to the glorious suite from Strauss's most beloved opera, *Der Rosenkavalier*. The brasses play with marvelous, robust color, and if the strings in the famous waltz are not quite as lush as I might have wished, Eschenbach propels the music with an irresistible Viennese lilt.

At its best, the Houston Symphony under its brilliant maestro is among this country's finest ensembles, but its recording career has been very spotty since the Leopold Stokowski era, which ended in 1960. Perhaps this excellent recording will start setting matters straight.

Jamie James

**R. STRAUSS: Four Last Songs.**

**Orchestral Songs: Befreit, Wiegenlied, Muttertändelei, Waldseligkeit, Cécilie. Der Rosenkavalier, Suite.**

Renée Fleming (soprano); Houston Symphony, Christoph Eschenbach cond. RCA VICTOR 68539 (69 min).

## Ornette Coleman: Back to the Future

Ornette Coleman's two "Sound Museum" CD's, "Hidden Man" and "Three Women," are the alto saxophonist's first recordings in an all-acoustic setting in more than a decade. And, not counting the keyboards in *Prime Time*, the band here is the first of his small groups in almost four decades to include a piano — significant because at least part of Coleman's initial notoriety stemmed from dispensing with piano and the system of just intonation it imposed. Moreover, Geri Allen, the pianist on the new records, is an exception among Coleman band members in having already carved out an identity for herself before joining him. Charnett Moffett and Denardo Coleman, the bassist and the drummer here, are more typical of his collaborators in having practically been created by him.

The two sets are further notable for presenting competing versions of the same thirteen Ornette Coleman composi-

tions. Double takes in more ways than one, "Hidden Man" and "Three Women" also mark a departure in that Coleman has recorded at least four of these numbers before — as long ago as the Sixties in the case of the punctured Viennese waltz he calls *European Echoes*. Coleman, who early in his career was burdened with quasi-prophetic album titles like "Tomorrow Is the Question" and "The Shape of Jazz to Come," has never before permitted himself the luxury of looking back.

Those are the particulars; the results testify to Ornette Coleman's endless capacity for self-renewal. His reinterpretations of the older numbers are richer and subtler than the original recordings, full of surprising details that reveal a mind never at rest. In the newer material, the difference between takes is occasionally rather slight, but there are numerous instances where a piece has been rethought from the ground up, almost as though to demonstrate the originality and depth of

Coleman's compositions while undermining the very notion of composition as arbitrary. A good example is the "Hidden Man" take of *Yesterday, Today, & Tomorrow*, a ballad where drummer Denardo Coleman gradually moves the beat into the pocket, with the happy side effect of creating greater parity between the horns and the piano. Allen turns in a remarkable job on both discs, rarely implying harmonic parameters so much as supplying a tough percussive counterpoint to the leader's lines. She doesn't comp behind him; she swirls. Moffett, however, is the member of this ensemble most attuned to Ornette Coleman, whether bowing or strumming a fleet pizzicato. And his big sound has been forcefully captured.

The take of *Women of the Veil* on "Three Women" inspires one of Coleman's most passionate and thematically satisfying solos, and this disc's performances tend to be slightly longer and more expansive than those on "Hidden Man." Even so, "Hidden Man" averages out better by virtue of its tighter focus. Not that a choice is really necessary: Anybody who hears one of these CD's is going to want to hear the other. Each is the other's only serious competition as the best jazz recording of 1996.

Francis Davis

**ORNETTE COLEMAN:**

**Sound Museum — Hidden Man.**

*Sound Museum: Monsieur Allard; City Living; What Reason; Home Grown; Stopwatch; Women of the Veil; P.P. (Piccolo Pesos); Biosphere; Yesterday, Today, & Tomorrow; European Echoes; What a Friend We Have in Jesus (Variation); Mob Job; Macho Woman.* HARMOLODIC/VERVE 531 914 (55 min).

**ORNETTE COLEMAN:**

**Sound Museum — Three Women.**

*Sound Museum: Monsieur Allard; City Living; What Reason; Home Grown; Stopwatch; Don't You Know by Now; P.P. (Piccolo Pesos);*



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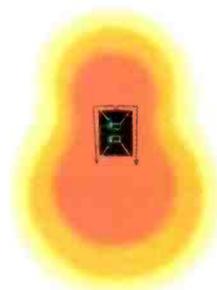
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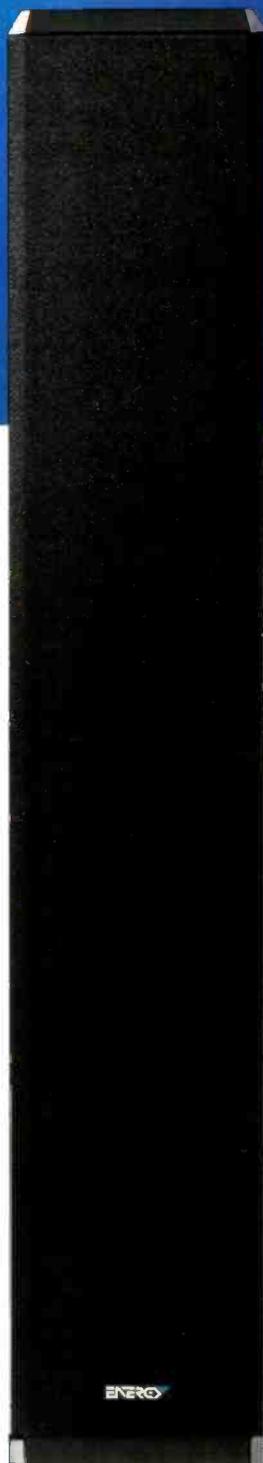
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# BEST OF THE MONTH

*Women of the Veil; Yesterday, Today, & Tomorrow; Biosphere: European Echoes; Mob Job; Macho Woman.*  
HARMOLODIC/VERVE 531 657 (51 min).

## A Symphonic "Fidelio" from Colin Davis

For a supposedly problematic opera, *Fidelio* boasts an impressive discography with a wide array of outstanding conductors and illustrious if sometimes uneven casts. It is a pleasure to report that RCA's new entry under Colin Davis is, for me, the most successfully balanced recorded version since Otto Klemperer's 1961 EMI set with Christa Ludwig and Jon Vickers. Davis's treatment of the work reminds me of Klemperer's "symphonic" approach in its broad and stately pacing, overall vitality, and strong dramatic accents as well as its finely textured ensembles. The superlative chorus and orchestra deserve high praise.

The brilliant singing of soprano Deborah Voigt, as Leonore, and tenor Ben Heppner, as Florestan, should invigorate hearts that have grown faint over the fu-



Tenor Ben Heppner: a brilliant Florestan

ture of the vocal art. Voigt may not match Ludwig's intensity in Leonore's melodramatic scene prior to her discovery of Florestan starving in the dungeon, but her singing is consistently pure and rich, with freedom throughout a wide range and accuracy in the fast passages. Given a powerful assist by the conductor, her

great outcry leading to the distant trumpet call in the Act II, Scene 3 quartet registers thrillingly. Heppner delivers his tortured aria excitingly and rises to similar heights thereafter, projecting tones that are heroic without thickness, with a dramatic ring and a characterization that conveys Florestan's dignity and inner strength.

The rest of the cast calls for no superlatives, but appreciative acknowledgement is due the warm-toned and characterful Rocco, the snarlingly malevolent Pizarro, the eloquent liederlike utterances of the Don Fernando, and the attractively youthful portrayals of Marzelline and Jaquino.

The optional *Leonore* Overture No. 3 is not interpolated in this version. Somewhat curiously, however, *Leonore* No. 2 is included as an encore/bonus. As usual, the spoken dialogue is abbreviated, but the essentials are all there. Enthusiastically recommended!

George Jellinek

### BEETHOVEN: *Fidelio*.

Deborah Voigt (Leonore), Ben Heppner (Florestan), Elizabeth Norberg-Schulz (Marzelline), Michael Schade (Jaquino), Matthias Hölle (Rocco), Günter von Kannen (Don Pizarro), Thomas Quasthoff (Don Fernando); Bavarian Radio Chorus and Orchestra, Colin Davis cond. RCA VICTOR 68344 (two CD's, 140 min).

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### POPULAR

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(original motion-picture soundtrack). MCA 11502. Songs and music by Motown legend Norman Whitfield from the 1976 comedy starring George Carlin and Richard Pryor.

#### ROBERT JOHNSON:

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#### "MISSION: IMPOSSIBLE."

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#### WINGS: At the Speed of Sound.

DCC COMPACT CLASSICS 1096. Remastered gold-disc version of the 1976 Paul McCartney



album that gave the world *Silly Love Songs*, with three bonus tracks.

### CLASSICAL

#### G. GABRIELI: Antiphonal Brass Music.

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#### GABRIELI AND FRESCOBALDI: Canzonas and Toccatas.

E. Power Biggs (organ); Boston Symphony Brass Ensemble, Richard Burgin cond. SONY 62353. "Spectacular!" (April 1969).

#### MUSSORGSKY/RAVEL: Pictures at an Exhibition. BARTOK: Music for Strings, Percussion, and Celesta.

Chicago Symphony, Rafael Kubelik cond. MERCURY 434 378. A landmark mono recording made with a single microphone at Orchestra Hall in 1951, produced by STEREO REVIEW's own David Hall.

#### ROSSINI: The Barber of Seville.

Roberta Peters, Robert Merrill, Cesare Valletti, Giorgio Tozzi, Fernando Corena, others; Metropolitan Opera Chorus and Orchestra, Erich Leinsdorf cond. RCA VICTOR 68552 (three CD's). A classic Met roster, vintage 1958 Italian ensemble.

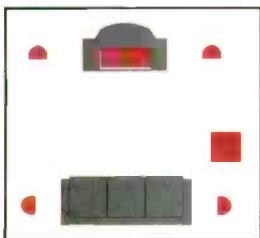
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# POPULAR MUSIC

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

**AL ANDERSON: Pay Before You Pump.**

IMPRINT 10004 (50 min).

**Performance: Irreverent**

**Recording: Neat**

**A**l Anderson, whose work with NRBQ has led to songwriting and sideman stints with the likes of Carlene Carter, arrives on this solo album a full-blown wise-guy party boy. As savvy a country guitar picker as they come (although you wouldn't ever mistake him for Chet Atkins), he gives only a passing nod to all-out country, settling down mainly in the grooves of rock, rockabilly, R&B, boogie, and country blues. The first track, *No Place in History* (about a dueling couple who've blown all their chances), and the last cut, *Hiss on U*, have pounding, cymbal-bashing, singalong melodies in snarling vocals. In between, Anderson moves smartly from thrash rock (*That Thang*) to New Orleans funk (*After the Mardi Gras*) and a gruffly whispered, affecting version of *Without Your Love*.

His most memorable work here recalls NRBQ's ticklish humor, especially the sly rocker *Bang Bang Bang*, where he has fallen for a girl with big hair from the Curl Up and Dye. He's likewise charming in *Lonely Too Long*, a country blues about mismatched lovers: She plays the stock ex-

**Edelman: beautifully framed**



KATHY MORGAN/COMPASS

change, he puts his spare change in a Dixie cup; her dogs have pedigrees, he likes any ol' skinny thing that wanders up.

Anderson packs a few surprises — *Get Gone* is the first song in my memory to use



a five-letter word starting with "p" to describe a loathsome man — and his guitar work is often a flurry of single-note assaults instead of an enabler of melody. Whether you like that or not, "Pay Before You Pump" is still fun, fun, fun. **A.N.**

**JOHNNY CASH: Unchained.**

AMERICAN 43097 (42 min).

**Performance: Mostly masterly**

**Recording: Uncluttered**

**W**ith 1994's acoustic "American Recordings," Johnny Cash achieved the second most surprising comeback of the Nineties, right behind Tony Bennett. Both singers suddenly became cool for the same reason: They had never stopped being great at what they do, and somebody figured out how to package them for a new audience. In Cash's case, that somebody was producer Rick Rubin, who knew that the alterna-rock crowd would be attracted if Cash played up his outlaw side. And Rubin was savvy enough to let him make the stark solo album he'd been wanting to do for years, rather than the rockabilly album everyone was expecting.

"Unchained" returns Cash to an electric-band setting — the band is Tom Petty and the Heartbreakers, sounding sharp and respectful — but maintains much of the

rough-edged, somber feel of "American Recordings." There are two obvious attempts to court Cash's new audience, with covers of Beck's *Rowboat* and Soundgarden's *Rusty Cage*. He has to navigate a few silly lyrics in the first song and a sudden tempo change in the second, but there's an undeniable kick in hearing him stretch this far. Covering a Petty song also makes sense, but it's too bad they chose *Southern Accents* rather than something more up Cash's alley — *Louisiana Rain*, say.

It's no surprise that the best moments come when Cash sticks with country music, which he does most of the time. *I Never Picked Cotton*, a quasi-novelty hit for Roy Clark in the late Sixties, takes on a much tougher undertone, as does the old Carter Family number *Kneeling Drunkard's Plea*, which includes an impassioned second vocal from Petty. The three original songs are Cash's strongest in a while, notably the gospelish *Meet Me in Heaven*. And the rip-roaring finale, *I've Been Everywhere*, sets the stage for the punk/rockabilly album that I still want to hear him make. **B.M.**

**JUDITH EDELMAN: Perfect World.**

COMPASS 4233 (38 min; 117 30th Ave. S., Nashville, TN 37212).

**Performance: Eccentric but nice**

**Recording: Fine**

**O**n her debut, Manhattan native Judith Edelman has three notable characteristics: a knack for mordantly funny lines beneath the singer/songwriter sweetness, a terrific sense for delicate instrumentation (especially from guest dobroist Jerry Douglas and banjoist Alison Brown), and a too obvious influence from Nanci Griffith. Edelman is a singer of pinpoint pitch and clarity, and she likes to hang out in the Celtic range of her repertoire; in the title song, she sets a neurotic's nightmare in a melody that might have hitchhiked around the British Isles for a spell. But her real gift is in crafting the intriguing (if not always clear) line: "See the drunkards in the alley fly like angels in the sky." In *Pass It On*, which could be either Christ's story or a dialogue between a man and woman about to create a child, Edelman begins, "Let's tell the story of life / I'll word the bones, you give the guts." And in *Morning People*, where sleepyheads gather around the breakfast table, she drops in a bit of subconscious animus: "I love you / Gonna eat your heart out today."

There's a kind of unformed quality about "Perfect World," as if Edelman doesn't really know what she wants to do or say on her musical soapbox. But she and producer Bill VornDick frame what's here about as beautifully as you can imagine. Now, about that content . . . **A.N.**

**CHRIS ISAAK: Baja Sessions.**

REPRISE 46325 (39 min).

**Performance: Sleepwalking**

**Recording: Good**

**L**ast time out, the perpetually dreamy Chris Isaak sold 740,000 copies of the album "Forever Blue." But, of course, that record was set in the present. "Baja Ses-

sions," which was recorded neither live nor anywhere near the title territory, wears a watch of much earlier vintage. Fully five songs are oldies covers, including *Only the Lonely*, which finally gets Isaak's Roy Orbison obsession out in the open, even if he keeps it so emotionally low-key that he might as well be sitting with a drum machine in the grimy corner of some seedy bar. But look at the other covers: *Yellow Bird*, *South of the Border (Down Mexico Way)*, *Return to Me*, and *Sweet Leilani*, where he sounds like Elvis in *Paradise, Hawaiian Style*. They're as hoary as old songs can get.

As for Isaak's originals, *Waiting for My Lucky Day* moves along a graceful melody, but *Two Hearts*, where his falsetto soars into the upper stratosphere, is ruined by a cheesy skating-rink organ, and *Back on Your Side* is completely underwhelming — too genteel and monochromatic, without the echoing atmosphere that became the singer's trademark. Only a reprise of *Dancin'*, which should be a hit, mines the dark, dangerous groove of Isaak's musical persona.

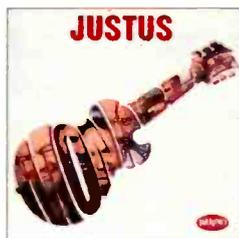
Frankly, I liked him better when he was lost in a David Lynchian fog. Where's the rockabilly here? The mystery? The godforsaken angst? Chris Isaak used to make music fit for Obsession perfume spots. This is music to visit Grandma by. *A.N.*

**THE MONKEES: Justus.**

RHINO 72542 (44 min).

**Performance: Embarrassing**  
**Recording: Better than needed**

Back in the studio more by marketing savvy than by popular demand, the reunited Monkees — Davy Jones, Peter Tork, Mickey Dolenz, and the long-absent Mike Nesmith — have recorded their first album together in 20 years, bragging they wrote the whole thing, produced it, and actually played on it. Can we believe them this time? Yes, because professional musicians don't play this badly.



Let's start with what the press release calls their "buoyant harmonies." In truth, the guys sound like a bunch of 50-year-olds screeching for the high notes, fooling themselves into believing they're 20 again. Next, check out Nesmith's grunge guitar and try not to laugh. As for lyrics, a sample from *It's My Life* tells it all: "It's my life / And I'm taking over now / It's my life / And it's time that I learned how." I'd say so, at least by the time you're 60.

Actually, several tunes have potential. Tork's mondo-jazz *I Believe You* is fairly ambitious, and *Unlucky Star*, which hangs

its hat on triplet-based Fifties rock, almost gets down to business. Still, it's amateur hour here, folks. But hey, hey, they're the Monkees, and people say they monkey around. Do tell. *A.N.*

**PEARL JAM: No Code.**

EPIC 6750 (49 min).

**Performance: Impassioned**  
**Recording: In-the-room**

The good news is that Eddie Vedder is doing his best to move Pearl Jam in a deeper, more spiritual direction. The better news is that he's not succeeding entirely. Not to knock his high aspirations — which make "No Code" the most adventurous of the group's albums — but he's still fronting a band that hasn't shaken its arena-rock roots, and it's the contrast between earnestness and rock-and-roll crudity that gives the record its substantial kick.

Pearl Jam is one of the few superstar bands that still makes albums on a yearly schedule, catching a mood instead of aiming for the most polished product. Appropriately, most of "No Code" has a spur-of-the-moment feel, aided by Brendan O'Brien's *verité* production. The band's ambivalence about its success and Vedder's groping for *The Meaning of It All* combine to fuel the album's best numbers — *Man-kind*, an ironic rock anthem that charges like the real thing, and *Hail, Hail*, a spiritual outburst geared to some very down-to-earth slide guitars. Although more restrained than usual, Pearl Jam rocks fiercely enough in the minute-long *Lukin* and in *Habit*, the best antidrug song in memory, mainly because it sounds more pissed-off than preachy.

Not everything here works that well. The lengthy acoustic *Off He Goes* is pretty but sounds unfinished, the epic *Present Tense* takes too long to peak and pulls back too soon, and the spoken-word *I'm Open* is a well-meant mishfire. Pearl Jam's days as a full-tilt rock band may be winding down; if so, "No Code" makes an effective mix of the hard-driving group of the past and the more ambitious one to come. *B.M.*

**GRETCHEN PETERS: The Secret of Life.**

IMPRINT 10000 (42 min).

**Performance: Winning**  
**Recording: Very good**

You may not know Gretchen Peters's name, but you almost certainly know her work. She has crafted songs for a bunch of singers (including George Strait, Patty Loveless, Trisha Yearwood, Randy Travis, and Bonnie Raitt), and she won the Country Music Association's Song of the Year award in 1995 for Martina McBride's hit *Independence Day*.

Sure, you say, but can she sing? First, thanks for asking. Second, most definitely. On her debut album, "The Secret of Life," Peters displays a tender voice, full of emotional colors, and a refreshingly low-key way of using it. Even when she cranks it up in Steve Earle's *I Ain't Ever Satisfied* — yes, the Singer's Songwriter does a cover tune — the tachometer never enters the red zone. She doesn't seem to be selling

**SONG TITLE OF THE MONTH**



Bent and Melted Next to Paul Westberg, a track from Steve Westfield and the Burnouts' "Brainwreck" (BIB 20232), in which the Northwest underground rocker muses on whose CD's will be commingled with his following a nuclear-war firestorm.

**PACKAGING OF THE MONTH**



"Hot Tuna in a Can," a limited-edition set from RCA featuring five Seventies albums by the Jefferson Airplane spinoff, encased in... well, a can. *S.S.*

the songs so much as letting them shine through. Maybe it's not such a surprise that she's a Songwriter's Singer, too.

In this case, the singer has good material to work with. Peters seldom goes for the melodramatic; instead, she nearly always puts her finger on the telling detail, the small moment that is on the cusp of a big deal. *Waiting for the Light to Turn Green* (which she co-wrote with Suzy Bogguss) says a lot about the way women get trapped in daily routines, and it does that quietly and beautifully. *The Secret of Life* considers many potential paths to true happiness — "keep your eye on the ball," "a good cup of coffee." "Rolling Stones records" — through the easy charm of a bar chat, before concluding that "the secret of life is nothin' at all."

Maybe the big picture is more complicated than Peters lets on, but it is made up of smaller pictures that are no less valid for their simplicity. And that's where her photographer's eye is true. You should check out her gallery. *R.G.*

# POPULAR MUSIC

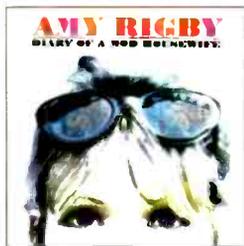
## PSYCHOTICA.

AMERICAN 43089 (55 min).

**Performance:** Godawful

**Recording:** Cruddy

On occasion, breaking taboos can be an act of artistry and courage, a way of kicking open a door to the future. Then there are seamy opportunists who merely rattle their smutty sabers as the quickest way of attracting attention. Psychotica falls in the second category. Its debut album is a guided tour of hell — which is to say, New York City's nether regions — conducted by an androgynous, metal-mouthed sleazoid named Pat Briggs. Music and vocals vie with each other to see which can be more gratuitously scabby. A typical track is *Starf\*\*\*er Love*, whose depraved verses brazenly home in on animal torture, among other things. If you can imagine David Bowie's Ziggy Stardust recast as a Lower East Side satyr with a desperate need to be noticed, you'll know all you need to know about Psychotica. P.P.



## AMY RIGBY: *Diary of a Mod Housewife*.

KOCH 7922 (40 min).

**Performance:** Completely charming

**Recording:** Good

Here is one original, utterly fresh and fun record. Imagine a cross between the Go-Go's, Buddy Holly, and a female cowpunk band, but with stories of marital confrontation: "He left the conversation dangling like a light bulb swinging in a cheap motel." Now you've got an inkling of Amy Rigby's left-field yet completely accessible music, dressed by musicians whose credits include k.d. lang, Lone Justice, and They Might Be Giants. But it's the lyrics that keep you listening close. With lines like "Gave me a number / But it wasn't even his," Rigby might have made a career as a stand-up comic. Instead, she's been a mod housewife since 1993, "a woman being dragged kicking and screaming into adulthood." From the sound of this, that's the kind of halfway house to grow up in, at any age. A.N.

## SCRAWL: *Travel On, Rider*.

ELEKTRA 61934 (40 min).

**Performance:** Honest

**Recording:** Likewise

Scrawl is such a modest band that it's easy to overlook how good it is. On a string of indie albums (for Rough Trade and Simple Machines), singer/guitarist Marcy Mays and bassist Sue Harshe presented material that sounded at first like quaint little diary entries with country/folk overtones — until you noticed the sneaky pop hooks and the creative song angles. *Charles*, from the 1990 album "Smallmouth," should have

made the group famous by itself (it's a band-versus-boyfriend song that pulls a gender switch on Kiss's *Beth*).

Making its overdue major-label debut, Scrawl hasn't changed its approach. There's still a basic honesty in the writing and the uncluttered guitar-trio sound, and the songs remain catchy in an unassuming way — they're just polished a little brighter this time, with Steve Albini, of all people, giving the band its fullest production yet. Mays has emerged as a fine singer who makes the most of an appealing Midwestern drawl, notably in *Story Musgrave*, which might be called a breakup song about a couple that hasn't gotten together yet (it's equally touching in both full-band and solo-piano versions). The songs stick with the sad/haunting mood that Scrawl specializes in. *The Garden Path* is about being jilted by a friend rather than a lover, *From Deep Inside Her* is apparently about being jilted by oneself, and *Easy On Her Mind* and *What Did We Give Away?* are the kind of deep and lonely songs that make for great middle-of-the-night commiseration. B.M.

## SEX PISTOLS: *Filthy Lucre Live*.

VIRGIN 41926 (53 min).

**Performance:** Good throwback

**Recording:** Decent, for a change

The Sex Pistols caught plenty of flak for doing a reunion tour last summer, but, in retrospect, they got everything right. They played credible versions of all fifteen of the songs (give or take a few covers) that were ever in their repertoire. They didn't force lame new material down anyone's throat. Johnny Rotten remained his bitchy, entertaining self, and the band sounded tighter on stage than it did the first time around.

You were expecting social and cultural significance? A lot of people apparently were, but a lot of people took the Pistols too seriously in the first place. Behind their anarchy pose, they always had bubblegum tendencies — not for nothing did they cover the Monkees' (*I'm Not Your*) *Stepping Stone*, included on this recording of the Pistols' London reunion show. Twenty years after its original release, *Pretty Vacant* doesn't sound any more threatening than Slade's *Cum On Feel the Noize*, which it always resembled more than anyone wanted to admit. And it holds up for the same reasons the Slade song does: The guitar riff is killer, the irreverence is still there, and the chorus makes for a great, mindless singalong.

"Filthy Lucre Live" is the first proper live album the Pistols have issued, making up for the long string of tinny, sloppy, semi-legit concert sets that hit the racks since their breakup. The band sounds surprisingly potent after the long layoff, with original member Glen Matlock back on bass (as everyone knows by now, his late replacement, Sid Vicious, couldn't play a lick). And Rotten's in prime form, snarling as well as ever and sending himself up at every turn. In *Liar* he sounds like a stern schoolmarm, and his between-songs shout of "Fat, 40, and back!" is as quotable as anything he said in the old days — and probably more honest. B.M.

## MICHELLE SHOCKED:

*Kind Hearted Woman*.

PRIVATE MUSIC 21452 (44 min).

**Performance:** Stark and poetic

**Recording:** Atmospheric

On her first album since 1992's "Arkansas Traveler," Michelle Shocked returns to the heartland for a collection of mostly bleak yet highly poetic story-songs of harsh life in rural America. Accompanied by Hot House Flowers, who largely stay in the background, the singer sets the tone from the start. *Stillborn* powerfully traces the emotional journey of a midwife who has just delivered a dead baby; the Walt Whitmanesque lyrics are laid out with a damaged wail of a voice and a bare-bones electric guitar that suggests the slitting of a soul. From there, drifting on blues, folk, and attitudinal country, Shocked visits neighboring farms, prairies, and ranches where a girl dies before the age of five (*A Child Like Grace*), a farmer frets over the imminent loss of his crop (*Winter Wheat*), and a widow falls prey to coyotes of both animal and human kind (*Homestead*).

"Never a lesson have I learned without first being burned," Shocked sings in *Hard Way*. But the characters who walk the frozen ground of these defeated fields pay a far steeper price. Like the kindhearted woman of the title — a hobo sign for an easy touch for a warm meal, an odd job, and a place to sleep — Shocked leaves herself open and vulnerable in these primal portraits. In doing so, she's made the least mannered record of her career. It may not approach Bruce Springsteen's "Nebraska," but it puts this daughter of the Texas plains in a whole new league. A.N.

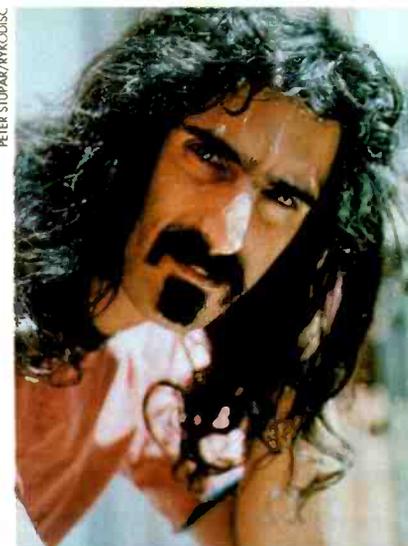
## FRANK ZAPPA: *Läther*.

RYKODISC 10574-76 (three CD's, 173 min).

**Performance:** A marathon

**Recording:** Sparkles

This marks the first official appearance of "Läther" (pronounced "Leather") as it was originally conceived by Frank Zappa. Back in 1977, he submitted the material to



PETER STUPAK/RYKODISC

Zappa: slalom runs for the ears

Warner Bros. as a four-LP boxed set. When the label wouldn't issue the bulky leviathan, he retaliated by airing the whole unreleased mass of it over KROQ in Los Angeles and urged his fans to tape away. Subsequently, the music was doled out piecemeal, serving as the basis for four albums: "Studio Tan," "Sleep Dirt," "Orchestral Favorites," and "Live in New York." Zappa later tinkered with and reworked various tracks for the CD reissues of those titles. Finally, here comes "Läther" as nature intended, strictly following the original running order and using the undoctored mixes.

In a career typified by big, bold strokes, this was a hefty undertaking: 2½ hours of mostly instrumental music that captured Zappa the composer, conductor, soloist, and musical visionary at a mid-career zenith. He leads various small ensembles through soaring passages whose complexity and inventiveness hold their own with the likes of "Uncle Meat" and "Hot Rats." Throughout the set, snatches of genre-warping sound collages — eerie, weeping fountains of Varrèse-like strings, speeded-up percussion interludes, rock-band meltdowns — morph and overlap at a dizzying clip. At their best, Zappa's instrumental chases are like slalom runs for the ears. "Läther" is chockablock with such moments, including what may be his most breathtaking soloing ever in *The Ocean Is the Ultimate Solution*.

Then there's the rest of the album. A truly schizophrenic artist, Zappa could enno-

ble the human spirit with his instrumental reach — only to deflate it with puerile attempts at social satire. Much of "Läther" will send shivers down your spine, but other parts will cause nausea in your gut. God only knows why someone with Zappa's gifts would stoop to such sophomoric lows as *The Legend of the Illinois Enema Bandit*, *Punky's Whips*, and *Titties 'n Beer*, which are as banal as their titles.

"Läther" represents both the best and the worst of Frank Zappa. My advice: Savor the best, overlook the worst. *P.P.*

## Collection

### THE CONCERT FOR THE ROCK AND ROLL HALL OF FAME.

COLUMBIA 67477 (two CD's, 131 min).

Performance: Variable  
Recording: Fine

Just what the world needed: a splashy rock-and-roll variety show to benefit that big tourist attraction in Cleveland. Not one unsung R&B legend is saluted, unless you count the late Dinah Washington, whose *I Know How to Do It* is murdered by Natalie Merchant. Booker T and the MG's are in the house band, but *Saturday Night Live*'s G.E. Smith is leading it, and the history of rock is reduced to a series of classic hits and star turns. The only thing missing is Paul Shaffer.

Still, it's hard to get too cynical about an

album that includes Jerry Lee Lewis rocking hard with Bruce Springsteen and the E Street Band, a blazingly soulful *A Change Is Gonna Come* by Al Green, and a pair of Sly Stone classics done by George Clinton and his P-Funk crowd, who get closer to the Family Stone groove than Sly ever will again. John Fogerty, rock's laziest superstar, still sounds great a decade after his last album and tour, and Iggy Pop cheekily turns Willie Dixon's *Back Door Man* into his own *I Wanna Be Your Dog*. The big revelation is Melissa Etheridge, whose three-song girl-group medley is the raunchiest, sexiest, and most electrifying thing she's recorded — and yes, her *Leader of the Pack* is a she.

Then again, let's get cynical: Since when is Bruce Hornsby a member of rock royalty, and since when is Jackson Browne qualified to represent Bob Marley? A couple of legends also come up short: Aretha Franklin delivers a Vegasized take on *I Can't Turn You Loose*, and Bob Dylan, bless his heart, sounds thoroughly out of it in *All Along the Watchtower*. The biggest glitch is made by James Brown during *It's a Man's Man's Man's World* — not so much because he somehow puts Mickey Mantle in rock-and-roll heaven right next to Jimi Hendrix, but because he commits the mortal sin of asking "Alright if I scream?" and then not screaming. And as for the version of Hendrix's *Red House* coughed up by Slash and Boz Scaggs, let's just say that Mickey Mantle would have been more soulful. *B.M.*

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John Sunier,  
Audio Magazine April 1996



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# POPULAR MUSIC



## JAZZ

### CYRUS CHESTNUT: *Blessed Quietness*.

ATLANTIC 6903 (52 min).

**Performance:** Solemnity

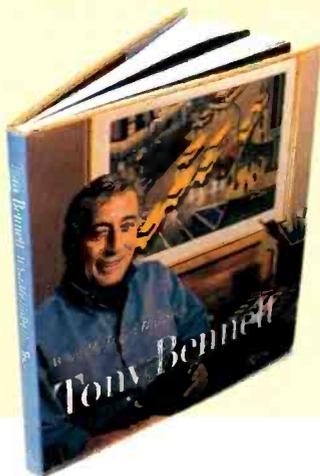
**Recording:** Excellent

Cyrus Chestnut was disappointing in Robert Altman's *Kansas City*, where he was supposed to portray Count Basie but failed to play in anything that resembled that style. Happily, there is nothing disappointing about his performances on "Blessed Quietness," the young pianist's first solo album.

Chestnut can set your body in motion, but don't expect to snap your fingers, for this is a mostly introspective and solemn trek through familiar tunes. If that sounds dull, it isn't: He embroiders the material to a fare-thee-well, adds a bit of barrelhouse to *Old Rugged Cross*, imbues *The First Noel* with more soul than a hundred carolers can shake a bell at, and so on. Chestnut has a fertile musical mind and a wonderful sense of dynamics. You won't find anything here overly familiar — not even *Silent Night*, *Amazing Grace*, or *Sometimes I Feel Like a Motherless Child*. C.A.

## Art Songs

Crossover is King of the Arts in the Nineties. Singer Tony Bennett is winning praise for exhibitions of his paintings, and Rizzoli has published a book devoted to them, *What My Heart Has Seen* (\$40). Meanwhile, painter Julian Schnabel, who also directed the film *Basquiat*, has released a CD where he sings his own songs, "Every Silver Lining Has a Cloud" (Island). The *New York Times* has called it "one of the worst CD's in the history of recording." Clearly, Bennett paints better than Schnabel sings. William Livingstone



### JOE HENDERSON: *Big Band*.

VERVE 533 451 (60 min).

**Performance:** Nimble

**Recording:** Transparent

Joe Henderson's latest concept album takes its inspiration from the rehearsal orchestra the tenor saxophonist led in the late Sixties, an outfit that apparently got together as often as several times a week for a few years but rarely performed in public and went unrecorded. The four Henderson arrangements included here presumably date from that era, and *Without a Song* and *Chelsea Bridge* show him to be as nimble an orchestrator as he is an improviser.

The other arrangements are a mixed bag. Although Slide Hampton's Gil Evans-like intro to Henderson's *Inner Urge* is beautifully detailed, Hampton can't do much with the tune itself, which for all its twists was essentially just a "head" (that is, a nifty springboard for solos) in its original incarnation. The same problem afflicts the scores by Bob Belden, Michael Philip Mossman, and, if only in the case of *Isotope*, Henderson himself. These charts are painstakingly orchestrated, but not really orchestral.

What finally makes "Big Band" well worth hearing is the consistently imaginative soloing by Henderson, pianist Chick Corea, and a handful of others. So maybe it's time for Verve to forget about concepts and just bring Henderson and a rhythm section into the studio to blow. F.D.

### MYRA MELFORD:

*The Same River, Twice*.

GRAMAVISION 79513 (63 min).

**Performance:** Architectural

**Recording:** Well-balanced

Myra Melford is the genuine article, the most gifted pianist/composer to emerge from jazz since Anthony Davis. And "The Same River, Twice" is her most impressive effort so far, a convincing demonstration of her ability to communicate her aims to an ensemble.

Although she's hardly the first pianist to emulate Cecil Taylor's ringing attack, what sets Melford apart is her understanding of the compositional architecture of Taylor's early Sixties work (an architecture that he himself has long since abandoned, alas). It says something about her organizational capabilities that the longest and most discursive of the five pieces here — the 25-minute *The Large Ends the Way*, with somber solos and duos alternating with a theme that's not quite a march and not quite a waltz — may also be the album's most successfully sustained piece of music. She is also adept at miniature: Witness *Bound Unbound*, whose leapfrogging intervals perfectly match the comic gait of its rhythms (the whole thing sounds like a successful attempt to update and personalize Thelonious Monk).

Best of all, the emotive solos by trumpeter Dave Douglas, tenor saxophonist Chris Speed, cellist Erik Friedlander, drummer Michael Sarrin, and Melford herself prove that extended composition can be a spur to unfettered improvisation, rather than an obstacle. Nineties jazz doesn't get any better than this. F.D.

## Collections

### MASTERS OF JAZZ.

**Vol. 1: Traditional Jazz Classics.**

RHINO 72468 (55 min).

**Vol. 2: Bebop's Greatest Hits.**

RHINO 72469 (66 min).

**Vol. 3: Big Bands of the '30s and '40s.**

RHINO 72470 (60 min).

**Vol. 4: Big Bands of the '50s and '60s.**

RHINO 72471 (79 min).

**Performance:** Generally excellent

**Recording:** Very good transfers

The sheer volume of jazz recorded since 1917, when the music made its debut on records, makes compiling a historic overview a daunting but not impossible task. Riverside's "History of Classic Jazz," an LP set covering the early years and released in the late Fifties, was quite good, and so was the Smithsonian Institution's more comprehensive set of 20 years later. The arrival of the CD has called forth countless historical reissues. Now Rhino, a label that thrives on licensed material and deserves high praise for past compilations, is having a crack at the genre's history with "Masters of Jazz," a seven-CD series of which four have been issued so far. A press release calls it "the most comprehensive various-artists collection of the music ever created," adding that it is "extensively cross-licensed to serve as the definitive overview of each style." I wish it were so.

The first two sets are called "Traditional Jazz Classics" and "Bebop's Greatest Hits," but neither volume is true to its title. A 1937 recreation of the Original Dixieland Jazz Band's 1917 Victor recording of *Tiger Rag* is hardly a jazz classic, nor is Bob Crosby's *Fidgety Feet*, Benny Goodman's *That's a Plenty*, or a 1992 Doc Cheatham session. And if James Moody's Swedish recording of *I'm in the Mood for Groovin'*, the Claude Thornhill Band's *Anthropology*, and Lester Young's *Jumpin' with Symphony Sid* were among bebop's greatest hits, I must have been on another planet. There are great recordings on both discs, but they seem to have been assembled without rhyme or reason. The liner notes are sloppy, too. For example, *Struttin' with Some Barbecue* is called one of Louis Armstrong's most durable compositions, although it was written by Lil Hardin, his wife (who sued to get the proper credit, and won).

The next two volumes, "Big Bands of the '30s and '40s" and "Big Bands of the '50s and '60s," contain a selection of big band sides that would be difficult to improve upon. Then again, I might question the inclusion of Charles Mingus's *Better Get Hit in Yo' Soul* and Cannonball Adderley's *African Waltz*, neither of which are by working bands. I also wonder why identical performances of Dizzy Gillespie's *Manteca* appear on Volumes 2 and 3 — and why the playing times of the four sets range from 55 to 79 minutes.

The fact remains that most of these tracks contain excellent performances by some of jazz's finest musicians. All the more reason why I wish more care had gone into the production of "Masters of Jazz." C.A.

# QUICK FIXES

## JOHNNY CLEGG & JULUKA: Collection.

PUTUMAYO 22127 (43 min).

Johnny Clegg and Siphon Mchunu formed the multilingual, multiracial Juluka in 1979 at the height of apartheid in South Africa. Although there was social commentary in their hits from the early Eighties included here, they combined English and Zulu lyrics with Western rhythms in an engaging, melodic kind of rock that still sounded fresh when the band regrouped in 1996. World music at its best.

William Livingstone

## SLIM DUNLAP: Times Like This.

MEDIUM COOL/RESTLESS 89277 (35 min).

The former Replacement guitarist's second album continues in the vein of his first, in that it's an unpretentious, slightly grungy version of a Keith Richards record, with a sense of humor and a heart as big as all outdoors. This time, however, the songs are never less than topnotch, and the instantly addictive *Girlfiend* is hands down the most perfect two-minute single that's never going to get on the radio. Act now.

S.S.

## TY ENGLAND: Two Ways to Fall.

RCA 07863 (32 min).

This sophomore effort from Garth Brooks's former roommate and guitarist is a textbook example of creative blandout. A young talent whose first, exciting album stiffed at radio, England here walks the safest line his record company can muster.

A.N.

## GEORGE GARZONE: Four's and Two's.

NYC RECORDS 6024 (61 min).

Garzone, a veteran Boston tenor saxophonist just now beginning to gain a national reputation, more than holds his own against Joe Lovano in what is less a cutting contest than a battle of wits. One highlight is their Lennie Tristano-like orbit around the chords of *Have You Met Miss Jones*. Good rhythm section, too.

F.D.

## MARIA MULDAUR: Fanning the Flames.

TELARC BLUES 83394 (57 min).

The soulful Ms. Muldaur has surrounded herself with an impressive lineup of like-minded colleagues, including Mavis Staples, Bonnie Raitt, Huey Lewis, Sonny Landreth, and Johnny Adams. My favorite track is *Well, Well, Well*, a Bob Dylan-Danny O'Keefe message against corporate greed, but there is much more to admire here. If you like your music dripping with blues and soul, this one's for you.

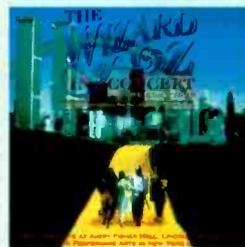
C.A.

## ANDEAN LEGACY.

NARADA 63927 (55 min).

The fourteen ensembles that provide this kaleidoscope of music from the Andean countries of South America include Intillimani from Chile as well as newer groups like Ancient Winds, founded by Ecuadorians in 1995. All are excellent.

W.L.



## THE WIZARD OF OZ IN CONCERT — DREAMS COME TRUE.

RHINO 72405 (72 min).

This benefit CD for the Children's Defense Fund boasts one of the most eclectic star rosters imaginable, including Jewel, Natalie Cole, Ry Cooder, Joel Grey, and Ronnie Spector. Nobody here will erase memories of the originals, but Jackson Browne's very L.A. version of *If I Only Had a Brain* works wonderfully well; ditto for Nathan Lane's *If I Were King of the Forest*.

S.S.



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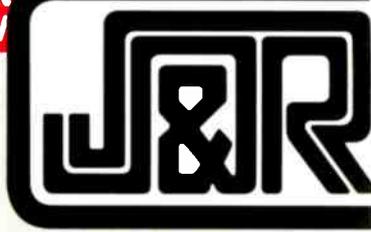
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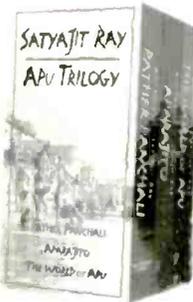
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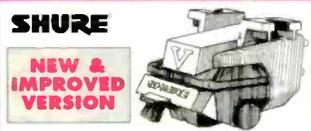
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# CLASSICAL MUSIC

NEW RECORDINGS REVIEWED BY ROBERT ACKART,  
RICHARD FRED, DAVID HALL,  
JAMIE JAMES, GEORGE JELLINEK, AND ERIC SALZMAN

## ANDRIESEN: *De Materie*.

Members of the Netherlands Chamber Choir; Schönberg and Asko Ensembles, Reinbert de Leeuw cond. NONESUCH 79367 (two CD's, 108 min).

**Performance:** Imposing  
**Recording:** Monumental

Let me try to describe *De Materie*: a two-hour music-theater piece (originally directed by Robert Wilson) with no action and no real characters except a series of historic texts, mostly in Dutch, set for tenor, soprano, two speakers, chamber choir, and chamber orchestra. The title can be translated as "about matter," but by "*materie*" Andriessen seems to mean politics, work, spiritual and earthly love, the essence or nature of things, art, science, love, and death. Not much left out there.

The score begins with 144 repeated chords (so it is claimed; I didn't count) and goes on to include boogie-woogie, the well-known motif based on Bach's name, an almost serialistic structure that evokes the *Well-Tempered Clavier*, a duet of hammers banging on wood, the song *L'Homme Armé* beloved by the composers of the Flemish Renaissance, and some 1927 music by the composer's father, Hendrik Andriessen. The writing veers between the sensational (in all senses) and a nearly unlistenable austerity.

Andriessen is one of the seminal figures of our time, and as the other gurus of modernism fade into the historical twilight, his work and personality loom larger and larger. This is a major work in a major performance and recording under the redoubtable Reinbert de Leeuw. *E.S.*

## BARTOK: *String Quartets 1-6*.

Keller Quartet. ERATO 98538 (two CD's, 149 min).

**Performance:** First-rate  
**Recording:** A-1

The young Hungarian players constituting the Keller Quartet are bred-in-the-bone Bartokians who cover the ground from the intense, post-Romantic First and Sec-

ond Quartets, through the fierce, terse Third, and on to the Fourth, Fifth, and Sixth with both spirit and finesse. High points are the *sotto voce* "toccata" episode in the scherzo of No. 4, the *allegretto pizzicato* that follows its wonderful "night music" slow movement, and the first slow movement of No. 5, another eerily exquisite

night-music piece. I also like the terrific vim and vigor the Keller players bring to the opening of No. 5. The sound throughout is absolutely superb — just the right mix of presence and acoustic elbow room.

Despite the formidable competition, including a new Bartok/Janacek set by the Tokyo String Quartet (RCA) and the Emerson String Quartet's Grammy-winning cycle (Deutsche Grammophon), on its own merits this entire production is eminently satisfying musically and sonically. *D.H.*

## BIZET: *Carmen*.

Jennifer Larmore (*Carmen*), Thomas Moser (*Don José*), Angela Gheorghiu (*Micaëla*), Samuel Ramey (*Escamillo*), others; Chorus and Orchestra of the Bavarian State Opera, Giuseppe Sinopoli cond. TELDEC 12672 (three CD's, 158 min).

**Performance:** Good to very good  
**Recording:** Very good

Like so many other recordings of *Carmen*, this one is internationally cast (with three American principals), but it offers the original *opéra-comique* version, with slightly abbreviated spoken dialogue and the full duel episode in Act III. Giuseppe Sinopoli sets an uncommonly slow initial pace for the Gypsy Dance (Act II) but gradually builds it to an exciting climax. The second *entre-acte* and the final duet are also somewhat slow, though not damagingly so. In all, the pacing is well judged and incisive,

## Love Song

Cecilia Bartoli's dark-hued, richly shimmering voice is better suited to song than opera, and most of her recordings to date have explored this repertoire, varied with Mozart and Rossini opera roles. "Chant d'Amour," a London CD of romantic French *mélodie*, her first recording in languages other than her native Italian, is delightful and scrupulously well prepared, tapping in to the singer's exuberant, playful instincts. Her impersonation of a talking insect in Bizet's *La Coccinelle* will bring a smile to even the sourest puss.

The program has a strong international flavor, and instead of the obvious chestnuts there are lesser-known songs. One real find is three songs of Pauline Viardot, a nineteenth-century diva. The poet Alfred de Musset wrote a pseudo-Spanish bit of fluff for her called *Les Filles de Cadix*, and she and Delibes both set fanciful boleros to it; Bartoli includes both versions here.

Her interpretations of two Berlioz songs, *La Mort d'Ophélie* and *Zaïde*, are serious and shapely but slightly exaggerated in their breathiness. The disc concludes with a virtuosic set of Ravel's songs in a variety of popular styles, sung in the Limousin dialect of French and in Galician, Italian, Hebrew, Yiddish, and Greek! Myung-Whun Chung accom-

panies Bartoli with great sensitivity, and the recorded sound is so intimate that you may find yourself wanting to reach out and touch them. *Jamie James*

## CECILIA BARTOLI: *Chant d'Amour*.

Cecilia Bartoli (mezzo-soprano); Myung-Whun Chung (piano).

LONDON 452 667 (68 min).



Soprano Cecilia Bartoli

## CLASSICAL MUSIC

and it is supported by excellent orchestral playing.

Forget about typecasting mezzo-soprano Jennifer Larmore in the Handel-Gluck-Rossini mold. Her vivid Carmen is responsive to all of the role's demands, combining strong drama with musical accuracy. Her Habañera is sexy and playful, her Seguidilla coquettish, and one can almost see the lightning in her eyes in the angry interchange with Don José that leads to the

Flower Song. Tragedy is clearly foretold in the Card Scene, while in the final moments she is all pride and defiance without excessive histrionics.

Thomas Moser is an intelligent and sensitive artist, but he projects little of Don José's fatal impulsiveness until the final scene. To his credit, he ends the Flower Song softly, as written, but he cannot equal the standard met by Plácido Domingo in three different recordings. The Micaëla of

soprano Angela Gheorghiu is delicate if a bit small-scaled. Escamillo's range is perfect for Samuel Ramey's sonorous bass-baritone; the characterization needs only an extra touch of suavity.

There are no real weaknesses among the supporting players, but a more authoritative Zuniga would have helped. This set faces tough competition from the many previous recordings of this opera available, but it is a worthy entry on its own terms. *G.J.*

## DAREDEVIL MOZART

**T**he new Sony CD "The Mozart Sessions" offers two piano concertos, Nos. 20 and 23, performed — complete with improvised preludes and cadenzas — by pianist Chick Corea and the Saint Paul Chamber Orchestra conducted by Bobby McFerrin. While these two jazz musicians are perfectly comfortable with Mozart as Mozart, they're also happy to wander off on their own.

Which is odder, McFerrin's brief vocalise intros or Corea's improvised cadenzas? McFerrin's preludes, however surprising, are at least in a Mozartean framework. Corea, who is merely doing what Mozart expected any performer to do — that is, improvise a cadenza in the appropriate place — throws caution to the winds and takes off in his own inimitable manner. Wow! This is far-out, risky stuff that puts Mozart squarely back into a living performance tradition. But maybe it's not the right one. Or maybe it's not quite far-out or risky enough. Let me try to explain.

Improvisation was a living art in Mozart's day, and written-out scores were not regarded as holy writ. Not only were cadenzas improvised, but embellishments and variants were allowed and even expected as ways of livening up the proceedings. So what Corea and McFerrin are doing has more legitimacy than might at first appear.

But, in my view, they have to either go further in recasting this music into their own idiom, or else use their jazz experience to recreate a more truly Mozartean improvisational idiom. The current experiments, while going further than anything else in the past couple of centuries, are still something of a compromise.

What might have happened is tantalizingly suggested by a delicious little 2½-minute improvisational encore, called *Song for Amadeus*, based on a Mozart adagio (from the Sonata No. 2, K. 280/189e). In the body of the two actual

concertos, pianist and conductor perform rather elegantly in a quite Classical idiom that, intros and cadenzas aside, is only lightly (and perfectly tastefully) embellished in a spirit of cool that the composer, no doubt, would have adored.

But the extras seem pasted on. The intros — McFerrin sings first, and then Corea slips in, speeds up the tempo, and slides neatly into the opening orchestral tutti — serve as oddball musical warm-ups of a certain unexpected charm. But those cadenzas! Corea makes a pretense of taking off from the traditional ones that Mozart and Beethoven wrote out for the increasing number of pianists who no longer knew how to improvise, but in a flash he is into his own world and the eighteenth century 6/4 chord is left far behind. Then, only minutes later, he must twist his way quickly back to those good ol' dominant-seventh trills that prepare the final tutti.

The sideslip is simply too great, and the music is bent out of shape. In the process we learn nothing new about Mozart and only a little about the performer and his skill. Nothing else really justifies these moments of breath-taking, daredevil musical risk.

McFerrin and Corea are real artists, and they have, with a bit of derring-do, let in a breath of fresh air. Mozart survives, and the world is perhaps even a slightly better place for their adventure, but I think they actually could have done a lot more, perhaps improvising and embellishing all the way through and even stretching the rhythmic elements. See what you think. *Eric Salzman*

**MOZART: Piano Concertos No. 20, in D Minor (K. 466), and No. 23, in A Major (K. 488). McFERRIN/COREA: Song for Amadeus.**

Chick Corea (piano); Bobby McFerrin (vocals); Saint Paul Chamber Orchestra, Bobby McFerrin cond. SONY 62601 (67 min).



Bobby McFerrin (left) and Chick Corea

DAVID KATZ/STERN/SONY CLASSICAL



**BRUCKNER: Symphony No. 6.**

Berlin Philharmonic, Daniel Barenboim cond. TELDEC 94556 (55 min).

**BRUCKNER: Symphony No. 6.**

North German Radio Symphony, Günter Wand cond. RCA VICTOR 68452 (55 min).

**Performances: Barenboim's more dramatic Recordings: Teldec richer**

**T**he Bruckner Sixth used to be the orphan child among his symphonies in terms of recorded performance, but no more: These latest versions bring the current total on CD to more than a dozen. While No. 6 may not boast thematic content as memorable as that found in Nos. 4, 5, 7, and 9, it is certainly the most amiable and best-proportioned of the lot.

Both Daniel Barenboim and Günter Wand are well-seasoned Brucknerians, though thirty years apart in age. Not unexpectedly, as the younger, Barenboim seizes more effectively on the dramatic elements, as in the nervous opening bars, the proto-Mahlerian menace at the start of the marchlike scherzo, and the sharp contrasts of the finale. Wand, for his part, emphasizes flow and texture, achieving his most effective results in the broody slow movement and in the bucolic horn calls midway in the scherzo. Barenboim's Berlin sound is full-bodied and nicely balanced. Wand's on the bright and close-up side. *D.H.*

**CORIGLIANO: String Quartet.**

**HAYDN: Quartet in D Major, Op. 76, No. 5.**

Cleveland Quartet. TELARC 80415 (54 min).

**Performance: Excellent Recording: Superb**

**I**n 1995 the Cleveland Quartet, one of the outstanding chamber-music ensembles of the last quarter-century, announced that it would disband at the end of that fall, even though all four current members were relatively young for such a veteran ensemble. As a parting gesture, they commissioned a substantial new work by John Corigliano specifically for their farewell tour — and farewell recording. On the new Telarc disc so labeled are the Corigliano quartet and

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# CLASSICAL MUSIC

Haydn's Quartet in F Major, Op. 76. No. 5, both taped a few days before the Cleveland Quartet's final live performance.

As Corigliano points out in his own comprehensive annotation, the quartet is actually his "first essay in this extraordinary medium." It runs a shade under 35 minutes here, comprising a relatively brief prelude and four subsequent movements of approximately equal length: a scherzo, a nocturne, a fairly complex fugue, and an extended postlude that follows without pause, all linked together by shared thematic material.

The overall character of the music is sober and intellectually challenging, in general more ruminative than overtly dramatic. Technically it is demanding in ways rather beyond the normal connotations of "virtuosity"; there is little that string instruments are capable of doing that they are not called on to do. One actual "programmatic" image is acknowledged by the composer: The calls of the muezzins breaking through the Moroccan darkness and subsequent night sounds leading up to daybreak in Fez are reflected in the central nocturne — a curi-

ously faraway reference that effectively supports the general theme of farewell.

This particular Haydn work had a special significance to the Cleveland Quartet: It was one of the first works performed by the original foursome, back in 1969, it opened the group's New York debut program two years later, it introduced William Preucil to the public as the quartet's new first violinist in 1989, and it had a place on the farewell-tour programs. The performance of it is as elegant and witty and warmhearted as that of the Corigliano is urgent and probing, and both are superbly recorded. *R.F.*

## Last Tango

**T**he great *tanguero*, or tango artist, Astor Piazzolla played his last concert in the very classical precincts of the Herodes Atticus Theater in Athens on July 3, 1990, only a month before he was struck down by the thrombosis that eventually killed him. That the 69-year-old *bandeonista* was at the height of his performing powers is evidenced by the recording of that event on an imported Milan CD. The two classical-style concerted works, *Three Tangos for Bandoneón and Orchestra* and a *Bandoneón Concerto*, with Manos Hadjidakis conducting his quirkily named Athens Colors Orchestra, and the two performances of *Adiós Nonino* for bandoneón, harp, and piano (the second was an encore) attest to that extraordinary mixture of strictness and freedom that was a hallmark of both Piazzolla's music and his playing style. The modern "classicism" of his work has its Stravinskian and Bartokish elements, but, in truth, it never strays very far from real tango. He simply took tango seriously as an art form, taking it off the dance floor and raising it up to Herodian Attican, even Olympian, heights.

The first few moments of the recording are disconcerting; the low bandoneón (which is pretuned mechanically and cannot be adjusted during performance) sounds out of tune with the strings. Mysteriously, the problem corrects itself rather quickly, and tuning issues are secondary thereafter. The location sound is sonically dense, but it has presence and the whiff of a live performance.

Harmonia Mundi France has released a CD of Piazzolla's music that suggests it has a future even after his death. Pablo Mainetti is a very capable young bandoneón player in the Piazzolla mold, and his performance of the *Bandoneón Concerto*, with a chamber orchestra from Catalonia, Spain, has a classical rigor and intensity that give it a character of its own. The *Tres Movimientos Tanguísticos*

*Porteños* ("three tango movements in the style of Buenos Aires") is a real discovery; it is earlier than the concerto, dating from 1968, and one of the few known Piazzolla works that does *not* feature bandoneón.

The CD concludes with five tangos — including *Decarissimo*, Piazzolla's tribute to his great predecessor, Julio de Caro; *Adiós Nonino*; and three other great tangos from the 1960's — that have been arranged for orchestra using both piano and bandoneón as soloists. The almost byzantine complexity of tango performance as practiced by the master

*tangueros* — including, of course, Piazzolla himself — is largely replaced by a simpler, Neoclassical clarity and rhythmic bounce. The music can take it. Piazzolla's genius was that his work existed and will continue to exist in both the world of the Argentine-style tango ensemble and in the larger (but not necessarily superior) context of modern classical chamber music.

Piazzolla's last concert neatly crossed the line between those two worlds; the Harmonia Mundi performances are already on the far side of it. Both approaches have their merits, and since only one work is duplicated on both discs, the obvious choice is to get both.

*Eric Salzman*



HARMONIA MUNDI

### **PIAZZOLLA: Three Tangos for Bandoneón and Orchestra; Adiós Nonino; Concerto for Bandoneón.**

Astor Piazzolla (bandoneón); Athens Colors Orchestra, Manos Hadjidakis cond. MILAN/BMG 35758 (54 min).

### **PIAZZOLLA: Concerto for Bandoneón; Tres Movimientos Tanguísticos Porteños; Five Tangos (arr. Vidal).**

Pablo Mainetti (bandoneón); Lluís Vidal (piano); Orquestra de Cambra Teatre Lliure; Josep Pons cond. HARMONIA MUNDI FRANCE 901595 (67 min).

### **MAHLER: Symphony No. 7.**

Cleveland Orchestra, Pierre Boulez cond. DEUTSCHE GRAMMOPHON 447 756 (75 min).

**Performance: Analytic**  
**Recording: Very good**

**G**rated that the first and last movements of the Mahler Seventh Symphony take some doing by the conductor to make them hearer-friendly, but the analytic approach can be overdone, as it is in much of this recording. Pierre Boulez treats the opening "rowing" motive very deliberately, not so much in pacing as in overly careful articulation, which tends to inhibit the all-important sense of motion. The whole first movement, in fact, seems to last an eternity. By the same token, the three central "night music" movements are deprived of their magic: The tempo for the first one is on the fast side, and the succeeding scherzo with its ghoulies and ghosties is decidedly unscary to my ear. The third of these movements, marked *andante amoroso*, is elegantly detailed, especially in the guitar and mandolin passages, where the plucked strings add a special touch to the overall texture.

If the complex rondo-finale is not as uninhibited as it might be, Boulez and the superb Cleveland players display all of the music's nuts and bolts in no uncertain fashion. The sound from Cleveland's Masonic Auditorium is both sharply etched and handsomely translucent. *D.H.*



### **C. MATTHEWS: Fourth Sonata for Orchestra; Suns Dance; Broken Symmetry.**

London Sinfonieta, Oliver Knussen cond. DEUTSCHE GRAMMOPHON 447 067 (65 min).

**Performance: Remarkable**  
**Recording: Very good**

**C**olin Matthews (b. 1946) has been one of the more powerful creative forces on the post-World War II British music scene. He was a close associate of Benjamin Britten during his last years and helped Deryck Cooke work out his final performance version of the Mahler Tenth Symphony.

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## CLASSICAL MUSIC

The Fourth Sonata for Orchestra (1974-75), on a recent Deutsche Grammophon CD of his music, is a 25-minute "sound piece" falling into three major sections, which at one point the composer called "Intensification," "Complexity," and "Simplification." The work is played without pause, beginning with a quasi-minimalist treatment on a single repeated D note and building up to a maximally saturated orchestral texture involving all twelve tones of the chromatic scale. From there on things turn fiercely dramatic, but with tension eased here and there by contrasting episodes involving the strings or brass. Eventually, after a violent central section, the opening D signals a conclusion of sorts.

*Suns Dance* (1984-85) — for piccolo, oboe, bass clarinet, contrabassoon, horn, string quartet, and double-bass — is a kind of concerto for orchestra in microcosm that requires prodigies of virtuoso execution. Much is made of extreme contrasts of instrumental timbre, notably in the next-to-last episode, featuring piccolo and double-bass. A relentless flow of energy is conveyed by this music, energy that seems not to be organic but cosmic.

Most imposing of all is *Broken Symmetry* (1991-92), a big orchestral piece that the composer describes as "an extended sequence of scherzos and trios revolving around a central axis." Again the sequence of musical events is without pause, recalling the grimly relentless quality of the Vaughan Williams Fourth and Sixth Symphonies, but with decidedly more pronounced dissonance and heavy percussion. Even if the "scherzo" element seems less than evident, you are made aware of an implicit form that keeps the music from dissolving into phantasmagoric chaos.

Colin Matthews's musical language may not be easy for listeners of conservative sensibilities to understand, but it surely stirs up the innards. Conductor Oliver Knussen directs performances of crackling vigor and virtuosity, and Deutsche Grammophon's production crew, working in All Saint's Church, Peterham, has done a most impressive recording job. *D.H.*

### MONTEVERDI:

#### L'Incoronazione di Poppea.

Sylvia McNair (Poppea), Anne Sofie von Otter (Ottavia), Dana Hanchard (Nerone), Michael Chance (Ottone), others; English Baroque Soloists, John Eliot Gardiner cond. DEUTSCHE GRAMMOPHON ARCHIV 447 088 (three CD's, 191 min).

Performance: Full of character  
Recording: Good live quality

Unlike earlier "operas," *The Coronation of Poppea*, written at the end of Monteverdi's life, has a historical and not a mythological subject: the coupling of sex and politics, of passion and power, a theme that was to occupy center stage in the opera house for a long time.

The problem is that *Poppea* survives only in a later pastiche in which several composers, arrangers, and music directors seem to have had a hand. There are manuscripts in Venice and in Naples, both dating from

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# QUICK FIXES

**BACH: Violin Concertos in A Minor, E Major, and G Minor; Violin and Oboe Concerto in C Minor.**

Viktoria Mullova (violin); François Leleux (oboe); Mullova Ensemble. PHILIPS 446 675 (52 min). Bach concertos, original and reconstructed, for violin and violin and oboe, gracefully performed by the Russian violinist whose meteoric rise in the last ten years has now



earned her a back-up ensemble of her very own. The Mullova Ensemble is not an early-instrument orchestra, but the playing has a gentle grace and an unflinching charm of phrase that clearly derive from her lead.

The result is a kind of high-Baroque chamber music, at once grand and intimate, timeless and stylish, analytic and . . . well, lovable. *E.S.*

**BRAHMS: Piano Pieces, Opp. 116, 117, 118, and 119.**

Hélène Grimaud (piano). ERATO 14350 (75 min). In Brahms's twenty final pieces for piano, Hélène Grimaud takes a vigorous, brisk approach that at the same time manages to probe every nuance and half-light. The close-up recording tends to emphasize the instrument's percussive quality, but overall this is a richly satisfying issue as well as an obviously convenient package. *R.F.*

**SIBELIUS: Violin Concerto; Symphony No. 2.**

Vladimir Spivakov (violin); St. Petersburg Philharmonic, Yuri Temirkanov cond. RCA VICTOR 61701 (75 min). Both performances are fresh in outlook and heroic in scale. Vladimir Spivakov's playing is at once stylish, fastidious, urgent, and impassioned in the concerto. Yuri Temirkanov, with his great orchestra in top form, illuminates some frequently overlooked details in both works and takes his time building climaxes in the symphony, but the overall effect is one of remarkable spontaneity and flow. Demonstration-class sound. *R.F.*

**MONTSERRAT CABALLÉ AND MONTSERRAT MARTÍ:**

**Two Voices, One Heart.**

RCA VICTOR 29646 (63 min). With the phenomenal beauty of her voice still intact, Montserrat Caballé performs here with her daughter in a program of songs, arias, and duets. Montserrat Jr. has a pleasant enough voice, but this recording proves that in putting over a rock song or an excerpt from Viennese operetta, Spanish zarzuela, or French or Italian opera, Mother still knows best. *William Livingstone*

**QUINTETT WIEN: Wind Quintets and Other Works by Haydn, Mozart, Danzi, Farkas, and Takacs.**

NIMBUS 5479 (67 min). The Quintett Wien (Vienna Wind Quintet) offers a delectable program beginning with the B-flat Major Divertimento attributed to Haydn. The equally agreeable Mozart Divertimento in F Major (K. 213) follows, and though Franz Danzi's G Minor Quintet is not quite in the same class, the arrangement for flute and clarinet duo of six tidbits from *The Magic Flute* is witty and clever. Best are five Dances from Old Hungary by Ferenc Farkas and the Serenade on Country-Dances by Jenő Takács — you can fairly taste the paprika. The performances are a delight, the recording flawless. *D.H.*

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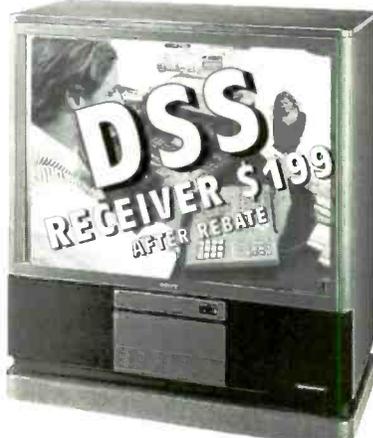
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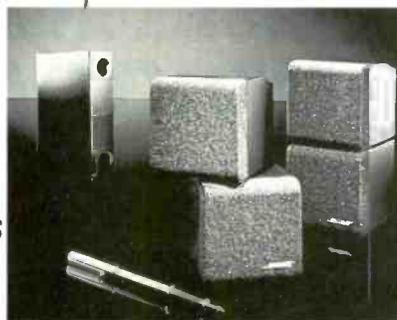
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## CLASSICAL MUSIC

after Monteverdi's death. John Eliot Gardiner has opted for the Naples road-show version on the grounds that, no matter how flawed, it was closely connected with a real production. But he also felt the need to fix it up to make it usable: Two major scenes have been cut, and the instrumental parts were corrected, rewritten, swiped from somewhere else, or even newly composed to make them more Monteverdian! So much for period authenticity.

Wisely, Gardiner and DG Archiv chose

to record a live performance, and it is the liveness that gives this version its character. The immediacy of its images and emotions is caught by both the performance and the recording. Ironically, the one truly seductive voice in the cast is allotted to the part of Nerone (the infamous emperor Nero). Dana Hanchard's very sexy and flexible mezzo-soprano has a rare quality of controlled and musical vibrato. She is also one of those exceptional vocalists who make musical phrases that speak out in complete.

passionate sentences. Sylvia McNair is a girlish Poppea. Her voice is almost too light for the viperish sensuality of the role, but she is always stylish and, curiously, charming. Anne Sofie von Otter is an attractive performer, but she has only one real moment, the affecting "A Dio Roma!" She makes the most of it.

There are three important male voices in this cast, two of them countertenors. Michael Chance is a bit wimpy as the rejected Ottone, but once or twice he shows some character and fire. There are two comic nurses, one sung by countertenor Roberto Balconi, the other by mezzo-soprano Bernarda Fink, and both are well played for character. The philosophical playwright Seneca is the boring low-voiced good guy, but the strong vocal contributions of Francesco Ellero d'Artegna are a relief from the high singing that prevails elsewhere.

Ironically, by choosing a revised version of the score and reworking it still more, Gardiner has achieved, if not a truly authentic *Poppea* — that goal will always be elusive — one that makes dramatic sense, even (perhaps especially) in recorded form. *E.S.*

**STRAVINSKY: Symphonies of Wind Instruments; Septet; Octet for Wind Instruments; Tango for Piano; Piano-Rag Music; Concerto for Piano and Wind Instruments.**

James Tocco (piano); Detroit Chamber Winds and Friends, H. Robert Reynolds cond. KOCH INTERNATIONAL 3-7211 (63 min).

**Performance: Trim  
Recording: Excellent**

**A**n interesting Stravinskian grab bag. This CD puts wind instruments very much to the fore. The 9-minute Symphonies of Wind Instruments from 1920, dedicated to the memory of Debussy, was described by the composer as "an austere ritual which is unfolded in terms of short litanies between different groups of homogeneous instruments." The Detroit players opt for Stravinsky's mid-1940's revision with its somewhat stripped-down instrumentation and notational changes.

The 1953 Septet for Clarinet, Horn, Piano, Violin, Viola, and Cello is gesture music in its first movement, but in the ensuing passacaglia and gigue Stravinsky edges into the realm of serialism via super-rigorous and complex contrapuntal procedures, using every trick in the book in the gigue. Not for devotees of the *Firebird!* The Octet for Wind Instruments, with its sinfonia, theme and variations, and jazz-tinged finale, is cast in Stravinsky's best mid-1920's "back to Bach" mode. Good listening, elegantly performed.

Pianist James Tocco provides a diverting interlude by way of the highly amusing 1940 Tango and the 1919 Piano-Rag Music, which takes on a new aspect in view of the Scott Joplin revival of recent decades. The 1924 Concerto for Piano and Wind Instruments, a three-movement affair, again represents the "back to Bach" Stravinsky (the composer worked it up as a concert vehicle for himself). Tocco carries the whole thing off with aplomb and benefits from an un-

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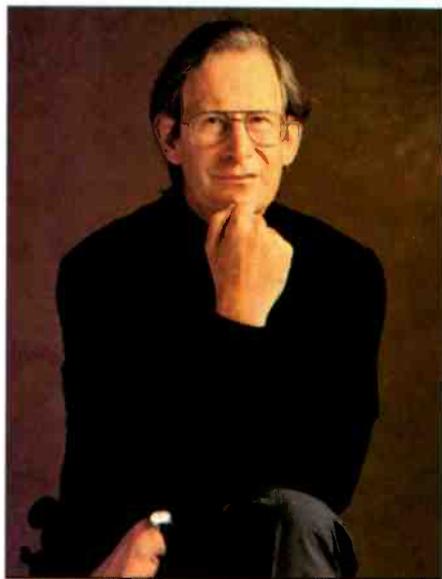
## ROMANTIC REVOLUTION

**J**ohn Eliot Gardiner has been a leader of the period-instrument movement for nearly thirty years. In 1990, after distinguished recordings of works by (among others) Bach, Purcell, Monteverdi, and, especially, Mozart, he formed a new orchestra — l'Orchestre Révolutionnaire et Romantique — to push the envelope forward into the

nineteenth century. The centerpiece of Gardiner's Romantic crusade has been the works of Beethoven, though he also has ongoing projects on both Deutsche Grammophon and Philips devoted to Berlioz, Schumann, and Verdi.

We spoke when he was in New York last summer to lead his orchestra at the Lincoln Center Festival, including a national telecast of the Beethoven Ninth. "Beethoven *isn't* stuffy or 'difficult,'" he declared. "The overall effect of period instruments is to make him seem more modern and less of a distant figure." It bothers Gardiner to hear Beethoven played by modern symphony orchestras: "Their basic sonorities are attuned to the late-nineteenth-century repertory. The sound is too plush and polished and well rounded — too fat, as it were — for Beethoven, who demands something very rugged, lean, and sharply differentiated."

As passionate as he is about playing on old instruments, Gardiner also has a close working relationship with the Vienna Philharmonic, one of the most conservative musical institutions in the world. Their latest collaboration is a collection on DG of works by the French composer Emmanuel Chabrier, who "wasn't known to them at all. They'd never played a note of his music!" But next on the agenda is an integral set of the Schubert symphonies, which "they have in their blood." *Jamie James*



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Conductor John Eliot Gardiner

usually well-recorded piano. The wind ensemble does a sterling job throughout. *D.H.*

**TIPPETT: Concerto for Double String Orchestra; Fantasia Concertante on a Theme of Corelli; The Midsummer Marriage, Ritual Dances.**

BBC Symphony Chorus and Orchestra. Andrew Davis cond. TELDEC 94542 (64 min).

**Performance: Committed**  
**Recording: Very good**

**T**he three works on this CD add up to a strong, well-balanced hour of essential Michael Tippett. Two of them — the Concerto for Double String Orchestra (1939) and the Fantasia Concertante on a Theme of Corelli (1953) — are well established in the repertory now and have been recorded many times. The Ritual Dances from the opera *The Midsummer Marriage* provide an illuminating contrast, in respect both to the substance and character of the music and also to its relative unfamiliarity.

Tippett completed *The Midsummer Marriage* just before he composed the Fantasia Concertante; the Ritual Dances, in fact, were put together and performed as a concert suite two years before the opera was first staged. The music calls for a very full orchestra, with a chorus at the end robustly apostrophizing, in the composer's own words, "Carnal love . . . transfigured as divine consuming love." And yet, for all its

big gestures, this wondrous suite contains even more passages of utmost intimacy and tenderness.

And, for all their more modest dimensions, the two works for strings alone radiate the same exultantly affirmative principle that gave rise to the opera. They have almost always been recorded by chamber orchestras; here Andrew Davis has insured that the larger string body of the BBC Symphony sacrifices nothing in the way of clarity or flexibility while bringing an altogether welcome increase in solidity. Throughout the disc, Davis has his forces fired up. The chorus is convincingly impassioned at the end of the Ritual Dances; if the words are not always intelligible, the recording otherwise serves the various works splendidly, and the annotation includes the sung text as well as authoritative notes. *R.F.*

## Collection

**LEILA JOSEFOWICZ: Solo.**

Leila Josefowicz (violin). PHILIPS 446 700 (62 min).

**Performance: Stunning**  
**Recording: Good**

**L**eila Josefowicz turned 19 early in 1996, and the occasion was marked by her major-label debut on Philips with a well-received CD of the Tchaikovsky and Sibelius

violin concertos. There was comment at the time on her muscular style, which she now brings to bear on a truly formidable recital of repertoire for unaccompanied violin ranging from Bartok to Kreisler.

The Bartok solo sonata is arguably the finest work in the medium since J. S. Bach's, and Josefowicz gives it her all, displaying unerring intonation in the opening chaconne and delivering the following fugue in exactly the *risoluto* style called for by the composer. In the slow movement she sustains the line beautifully and with great tenderness while negotiating the echoed harmonics and glissandos with wonderful poise. The presto finale leaves Rimsky's bumblebee eating dust.

Paganini's Introduction and Variations on "*Nel cor più non mi sento*" calls for every trick in the book, and then some — for Josefowicz it's no sweat! Fritz Kreisler's only unaccompanied violin work, the Recitativo and Scherzo-Caprice, Op. 6, is no tidbit. There is virtuoso flair aplenty in this performance, especially in the *spiccato* closing section. Eugène Ysaÿe's six solo-violin sonatas are considered touchstones of the repertory. Josefowicz gives impressive accounts of the single-movement No. 2, subtitled "Ballade," and the three-movement, neo-Baroque No. 4. Her recital winds up with a mind-boggling paraphrase on Schubert's *Erkönig* by the nineteenth-century Moravian virtuoso Heinrich Wilhelm Ernst, a finger-buster if ever there was one — I found it hard to believe there weren't at least two players on the job.

In short, this is quite a mix of demon fiddling and solid listening. The sound is clean and full-bodied. *D.H.*

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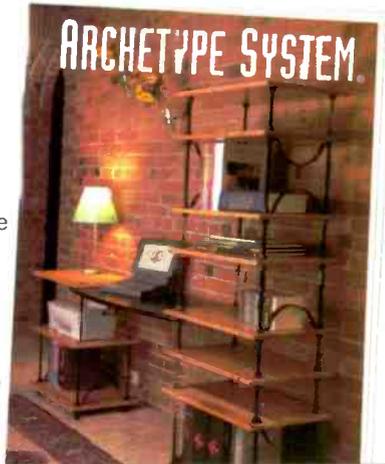
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## Audio Product Design Engineers

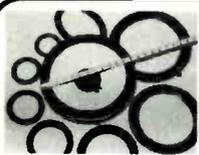
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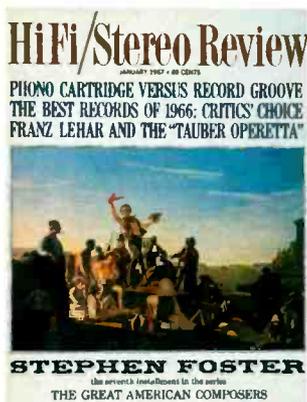
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# TIME DELAY



## 30 YEARS AGO

The January 1967 issue heralded the seventh installment of our "Great American Composers" series: an appreciation of Stephen Foster by musicologist Wiley Hitchcock. Among other music articles were George Jellinek's paean to operetta king Franz Lehár and a review of Peggy Lee's "Guitars à la Lee" that compared the singer (favorably) with Edith Piaf. And "Best Recordings of 1966" included the composer-conducted Columbia LP of Copland's *The Tender Land* and — despite a pan in the same issue by scold Rex Reed — the Beatles' "Revolver."



Allen music center, 1967

New products included the Allen Organ Company's music center (\$695), an electronic clavichord on wheels with an optional built-in turntable. Hirsch-Houck Laboratories tested the Revox G-36 Mk. III open-reel tape recorder (\$549), a semi-pro unit that accommodated 10½-inch reels. And in Installation of the Month, the custom hi-fi system belonged to none other than composer/critic Virgil Thomson.

We feel the same way about Michael Bolton: Reviewing "The Return of David Whitfield," Peter Reilly called the singer "a grotesque imitation of Mario Lanza" and concluded, "Another five-year hiatus before the next David Whitfield record won't bother me at all."

## 20 YEARS AGO

Well, do your stuff anyway: In the January 1977 issue, Noel Coppage described "Children of the World" by the Bee Gees as "Muzak for the feet."

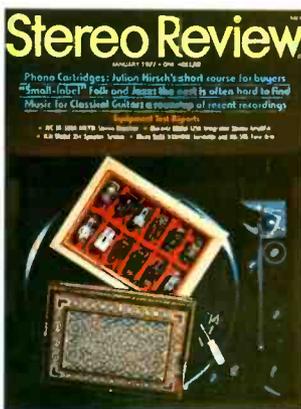
Julian Hirsch's "Phono Cartridges: A Short Course for Buyers" was accompanied by a piece on the fictional Dazzle-track cartridge, whose specs were "thoroughly mediocre." Among new products was the Robins "Soundtrack Scrubber" for cleaning eight-track tapes. And in test reports, Hirsch-Houck Labs praised JVC's JR-S600 (\$750) as "clearly one of the handful of top-ranking receivers on the market."

In Best of the Month, Stoddard Lincoln endorsed a CRD disc of Vivaldi's *The Seasons* led by Trevor Pinnock, and Joel Vance



Walter Murphy, 1977

flipped for "Nighthawks Live," a club set by the finest blues band from Washington, D.C. "A semi-occasional roundup" of classical guitar albums covered the likes of Julian Bream and John Williams, and a look at small-label purveyors of folk, jazz, and blues included Folkways, whose catalog also listed records on handwriting analysis, hypnotism, and Senator Joseph McCarthy.



Your next stop — the Twilight Zone! Faced with Walter Murphy's disco smash "A Fifth of Beethoven," a stunned Peter Reilly wrote: "That anything as bad . . . could hit as high on the charts as it has would seem to challenge reality."

## 10 YEARS AGO

Sure to be controversial, the big story in the January 1987 issue was David Clark and Ian Masters' "Do All Amplifiers Sound the Same?," in which audiophile listeners responded to double-blind tests of both high- and low-end units. The conclusion: "Certainly there are still differences between amps, but we are unlikely to hear them." Meanwhile, Julian

Hirsch tested the Linn Axis turntable (\$575), hailing its "combination of sophistication



Linn Axis turntable, 1987

and simplicity" and its "virtually ideal performance."

Picks for Best of the Month included Talking Heads' "True Stories" and pianist Georges Cziffra's recital of Liszt on an EMI import. And we profiled the then very hot all-girl rock group the Bangles, who said they'd been compared with the Go-Go's "but we never took that as an insult."



Vox Populi: In Letters, Ron Rosenberger of Silverdale, Washington, took exception to our November 1986 story about unified remote controls. "I'll never be so lazy," he declared, "that I can't ask my wife to turn off the radio and put in a cassette!"

— Steve Simels

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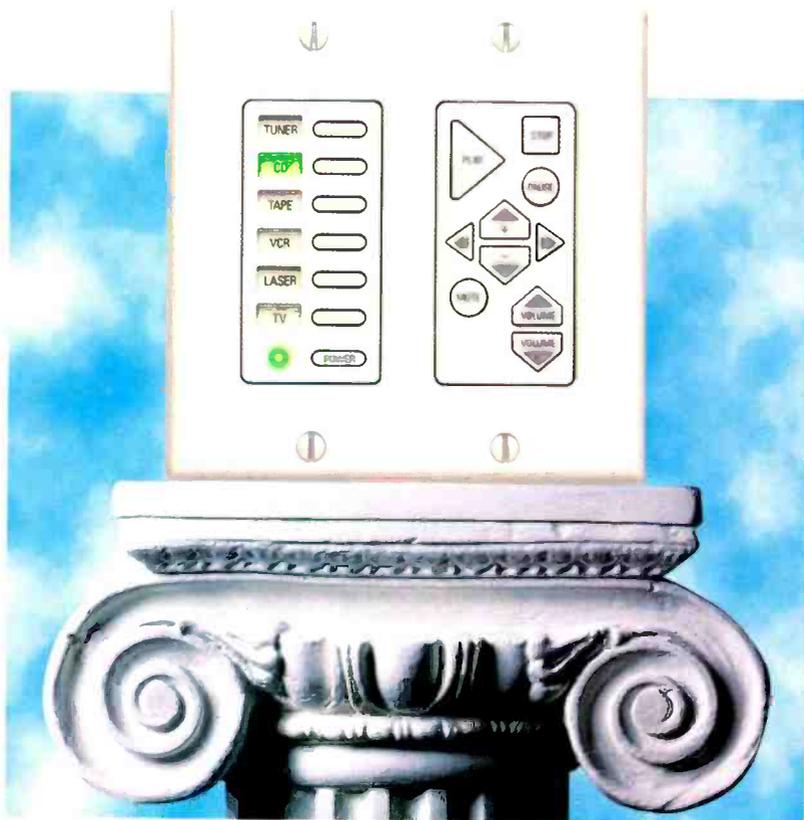
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The IntelliPad is as smart as it is attractive. It solves the most common problem associated with controlling a remotely located A/V system—*knowing whether your equipment is on or off.* If you've ever pressed a button and wondered if it actually did something, then you know what we're talking about. You become impatient, press the button again, and find that you did the exact opposite of what you intended.



An LED indicator displays whether your remotely located A/V equipment is on or off.

## IntelliPad™

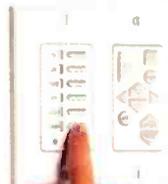
With the IntelliPad that's not the case, because its unique Power Status Synchronization circuitry actually *knows* when your system is on, and won't turn it off by mistake. Unlike IR repeater systems and other keypads, the IntelliPad puts you and your equipment in perfect harmony. No more "press 'n pray"—waiting endlessly for something to happen, only to end up frustrated and unfulfilled.

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