

# Stereo Review

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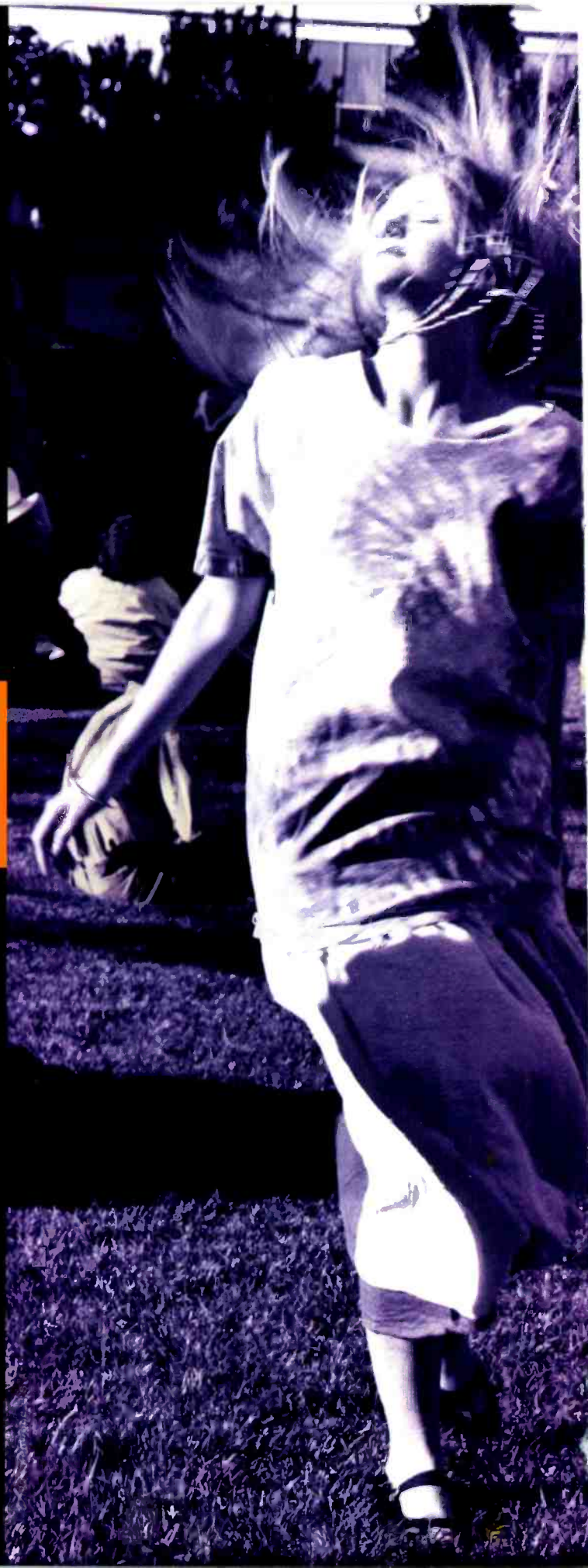


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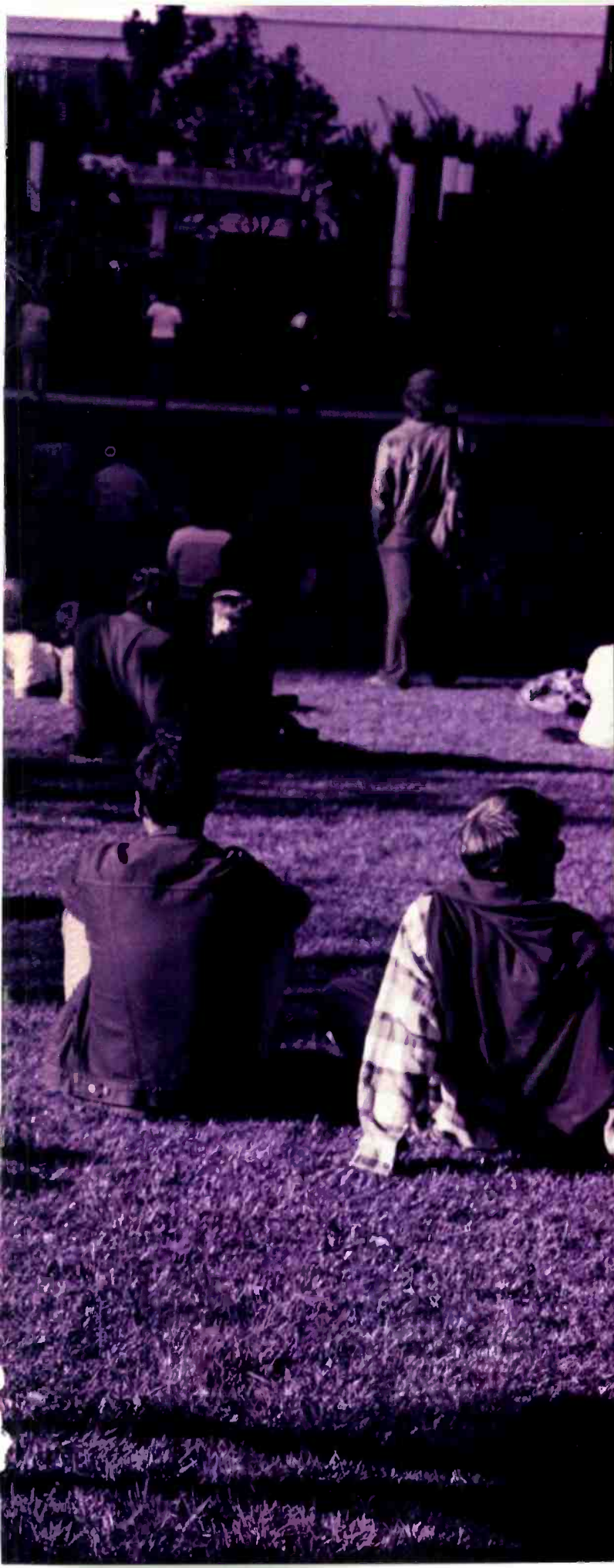


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# Stereo Review

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NOVEMBER 1994

**Cover**

Separate components, such as Rotel's RSP-960AX surround-sound processor and Marantz's MA500 single-channel power amplifiers, provide flexibility in a home theater system. See page 68.

Photograph by Jook P. Leung

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# BULLETIN

BY WILLIAM LIVINGSTONE  
AND BOB ANKOSKO



## CHILL OUT

Sensitive to the global increase in personal stress, Pioneer is promoting in Japan its Bodysonic chair, which soothes an occupant by vibrating in sync with relaxing music. Sales have been limited by the price of the chair (1.5 million yen, or about \$15,000), but Pioneer is optimistic about the future of the system, which also makes it possible to feel videos as you watch. The Bodysonic chair was demonstrated at CES last year, but at present the only Bodysonic products Pioneer U.S.A. is marketing are for the car, \$300 to \$520 "speaker systems" that fit onto the backs of the seats so riders can feel the music playing on the car's stereo system.

A hit in Japan, the "Baby Soother" cassette/CD calms babies with a series of rhythmic sounds said to be similar to those in a mother's womb. British Technology Group, of Guelph Mills, Pennsylvania, which represents the inventor of the Baby Soother, is seeking a company to manufacture and sell the device in the U.S.

## DIGEST

Among the winners of *Discover* magazine's fifth

annual Discover Awards for Technological Innovation are two products that have appeared in STEREO REVIEW's CES "Showstopper" roundups: the Digital Satellite System (DSS) pioneered by DirectTV and RCA and the NoiseBuster noise-canceling headset from Noise Cancellation Technologies (NCT). Five finalists were selected in each of seven categories from a pool of more than 4,000 nominations. Winners were chosen by independent judges in each category. . . . Warner Bros. Records and affiliated record labels are now previewing upcoming music releases on America Online and CompuServe. Subscribers can download

## SPEAKER RECIPES

Want to build your own speakers, but with a little help from the pros? Plans for seven different speaker systems, including four Signature Series designs by speaker guru Vance Dickason (author of *The Loudspeaker Design Cookbook*), are outlined in a 28-page booklet available from Polydax. Each speaker plan includes a parts list, construction diagrams, placement recommendations, comments from the designer, and response graphs. For a copy of *Kit Plans: Build Your Own Loudspeakers* and details on how to get kit components, write to Polydax Speaker Corp., 10 Upton Dr., Wilmington, MA 01837; or telephone 508-658-0700.

30-second samples of releases before they arrive in stores. . . . KEF is offering a limited-edition Signature Series of speakers in honor of its founder, Raymond E. Cooke. The three-model lineup includes a new version of the famous LS3/5a designed for the British Broadcasting Corp. (\$1,450 a pair in teak, \$1,650 in rosewood). The speakers must be special-ordered through authorized KEF Signature Series dealers.

## NUMBERS

An independent survey conducted for Yamaha shows that U.S. consumers are more knowledgeable about home theater now than they were a year ago, yet only 38 percent of audio/video sales personnel said that as many as half of the potential customers in their stores are familiar with the name "Dolby." . . . Mid-year figures released by the Recording Industry Association of America indicate that the dollar value of shipments of recordings in 1994 increased 11.9 percent over the first six months of last year to reach a record total of \$4.8 billion. . . . The soundtrack recording of Disney's *The Lion King* became the best-selling album released in 1994, with sales of 5 million units in only three months. . . . Deutsche Grammophon says that more than 1 million CD's and tapes in its "Mad About"

series of classical recordings were sold in its first year, and the purchasers represent every age group from under 18 to over 60. The supposedly apathetic Generation X (age 26 to 30) led with 14 percent of the sales.

## VCR FIXIN'S

VCR's top the list of products taken in for repair to Radio Shack stores since the chain began handling out-of-warranty repairs for major-brand electronic products last summer, according to Henry Chiarelli, vice president of retail services for Radio Shack's parent, Tandy Corp. It seems that children (we presume) have a penchant for putting coins and other small objects into the cassette wells. "We've seen VCR's with a lot of peculiar things in them," Chiarelli said, adding that another common problem is tapes jammed into decks upside-down.

Telephones are next on the most-often-repaired list, followed by camcorders, personal electronics (Walkman-type tape players, etc.), and, finally, audio products, including receivers, turntables, and CD changers.

## AUTOSOUND ANNEX

Bose sound systems are being offered as options in two new 1995 luxury sedans: the Mazda Millenia and the Oldsmobile Aurora. The Millenia system (\$1,200) features six speakers and a trunk-mounted six-disc CD changer; the Aurora system (\$1,131) features seven speakers, including an Acoustimass bass module, and a twelve-disc CD changer. . . . Options for Ford's new 1995 Windstar minivan include a seven-speaker Ford JBL system (\$510 with "preferred equipment" luxury package) and a ten-disc CD changer (\$500) that's mounted in the console between the driver and front passenger seat. □



SD-1000 SURROUND DECODER



AA-1660 SIX-CHANNEL AMPLIFIER

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# LETTERS

## "Consumer Reports"

As a former audio industry professional and a long-time reader of both STEREO REVIEW and *Consumer Reports*, please let me add my two cents' worth to the debate begun by Julian Hirsch in his September "Tech Talk" column. I agree with almost all of what Mr. Hirsch said, but I wish he'd given more attention to what I consider the most important part of any review in *Consumer Reports*: the frequency-of-repair records.

It's not normally difficult to decide why I like one product more than another—sound quality, ergonomics, wife-acceptance factor, or what have you. But if I know that a particular product (a car, a cassette deck, or a lawn mower) is more likely to need repair than a similar product from another manufacturer, that is going to affect my decision. An audio salesperson might not care to tell me that a certain tape deck tends to spend a lot of time on the repair bench, but *Consumer Reports* can—and saves me a lot of grief in the process.

There is no such thing as too much information. Consumers need to know as much as they can to make informed purchases. STEREO REVIEW and *Consumer Reports* are two excellent places to get that knowledge.

VICTOR A. DOUCETTE  
Detroit, MI

## Changing the Volume

In his amusing story on surround processors, "Doesn't Anybody Change the Volume Anymore?" (September), Alan Freedman stated that the Proceed PAV audio/video preamplifier does not have an on-screen display, but it actually has a rather sophisticated one.

The display can be temporarily disabled if the user finds the on-screen messages distracting. We assume that Mr. Freedman's experience with the PAV was limited to a brief demo in a dealer's showroom, and it is entirely possible that the display was turned off. As for the PAV's lack of myriad digital "hall effects," no amount of artificial reverberation, digital or otherwise, can sound as natural as the ambience captured in the recording itself. For this reason, the PAV uses ambience-extraction circuitry that places the natural ambience of the recording out in the room (where it belongs). JON HERRON  
Director of Communication, Madrigal  
Middletown, CT

As a salesman of high-end audio/video products, I found some errors of oversight in Alan Freedman's "Doesn't Anybody Change the Volume Anymore?" For example, the Denon AVP-5000 audio/video preamplifier incorporates all of Mr. Freed-

man's desired features. Perhaps, too, a more knowledgeable salesperson would have suggested the Denon AVC-3030 integrated A/V amplifier as a replacement for the Yamaha instead of the Denon AVR-3000 receiver, as the AVC-3030 incorporates the on-screen displays the AVR-3000 omits.

In any case, Mr. Freedman was wrong in his criticisms of the AVR-3000's front-panel display. The PANEL button on both the remote controls that accompany the receiver sequentially calls up displays of Surround Mode, Center Channel Mode and (rear) Time Delay, Center Volume Level, Surround Volume Levels (and balance), Input Source, and Record Outputs as well as switching the display completely off.

Finally, the McIntosh C-39 is a versatile A/V control center, not short on features. The incorporation of Pro Logic, (optional) Home THX, and natural ("Hall") ambience-extraction modes without phony digital-delay environment-simulation modes is assuredly deliberate.

ROB GOODMAN  
Stereo Hi-Fi Center  
Torrance, CA

The salesman Alan Freedman spoke with about the Yamaha DSP-A2070 was mistaken. I own that amplifier and enjoy the option of separate audio and video switching via the remote control. It also has all the other options Mr. Freedman listed.

JEFFREY SHULL  
Mansfield, OH

*Alan Freedman replies: As I discovered on my own, after it was too late to change the article, the Proceed PAV does have an on-screen display. As for the rest, however, I don't feel I was off-base. So the input to the Denon amp is displayed if you toggle through a display sequence on the remote—how does that help a family member trying to see at a glance what's playing? The Yamaha DSP-A2070 may have audio/video switching on the remote, but you can't do it at the unit, and the salesman couldn't show me how to do it at all.*

*With many of these components, I scoured the manuals, even taking some home and reading them for hours, because the salespeople lacked the information I needed. Most of them did not seem inspired enough to learn the details. They don't get enough "challenges" from guys like me.*

## Surround Speaker Hookup

While David Ranada's review of three "low-budget" A/V receivers in August was informative on the whole, his discussion of a series hookup for surround speakers may be misleading. If completely different models of surround speaker are



# Introducing the first speaker System to realize even Mozart fans like a good chase scene.



Some consider **Lynnfield VR** video reference speakers from **Boston Acoustics** to be the first home theater components that do justice to, say, an impeccably recorded symphony. Others see them as the first **audiophile speakers** flexible enough to reproduce an Arnold Schwarzenegger film without muscling in on the rest of the living room furniture. To accomplish this, our Lynnfield VR speakers use advanced **technology from our acclaimed Lynnfield Series** (which sell for over \$5000 a pair). Like our patented AMD mechanical filter, anodized aluminum tweeter dome, DCD bass units, crossovers with bypass capacitors and heavy windowpane-braced cabinets. Plus all VR components feature MagnaGuard® shielding so they're not finicky about being placed next to video equipment. A full explanation of these **engineering achievements** is available at your **local Boston dealer**. Why not drive there? Carefully.



## New Lynnfield VR

The Lynnfield VR Series includes three floor-standing left/right speakers—the VR20, VR30 and VR40—the VR12 center channel speaker and VRS dipole surround speakers.

**Boston Acoustics**

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# LETTERS

used, his cautions are valid. But most users would employ the same model for both surrounds, and a series hookup in that case should not cause problems. The frequency response of identical speakers will not be significantly affected by a series hookup, and if a low-impedance design is employed, that kind of connection will prevent the kind of surround-amp overload that might result with a parallel interface.

HOWARD FERSTLER  
Tallahassee, FL

*David Ranada replies: My preference for parallel connections is an "all other things being equal" proposition. Mr. Ferstler is correct that using identical surround speakers should not cause problems, but parallel connection will allow the safe connection of a single surround speaker (as is necessary in some listening situations) or the use of very different surround speakers (as might occur because of a piecemeal upgrade) in addition to providing freedom from speaker-impedance interactions.*

## Going to an Extreme

While reading Parke Puterbaugh's review of the Kiss tribute CD, "Kiss My Ass" (September), I was surprised to see Extreme described as a "German metal band." I thought it was an American band. Am I confused, or is Mr. Puterbaugh?

LAURIE A. WELSH  
Dunellen, NJ

*He was. Extreme's lead singer is German, but the band is American, as other readers also noted.*

## "Is It Real, or . . . ?"

An ad for the Victor Talking Machine in the July 1906 issue of *Ainslee's* magazine shows that realistic recorded sound has been around a lot longer than we may have thought. It declares that people could not "tell the difference between hearing grand-opera artists sing and hearing their beautiful voices on the Victor." It concludes, "There is a Victor for every purse—\$10 to \$100."

Interestingly, an ad for the Edison Phonograph, also from *Ainslee's*, states, "For a small additional expense you can obtain from your dealer a recorder and blank records, by which you can make your own records, and listen to the sound of your own voice and that of your friends."

WALTER V. PIERSON  
Forsyth, GA

## Speaker Values

Tom Nousaine's reports on comparison tests of floor-standing speakers (July) and bookshelf speakers (September) have

left me with some questions. While I understand the limitations of test facilities, Mr. Nousaine positioned all the speakers in the same room location, thereby doing a disservice to those whose manufacturers recommended putting them against a wall or in a corner. How much did that color the listening panel's impressions of their performance? What exactly makes the \$500-\$600 bookshelf speakers tested worth any more than bookshelf speakers in the \$250-\$350 range? Also, what explains the great variation in weight, from 11 to 29 pounds?

JAMES KEYES  
Muskegon, MI

*It is very difficult to set up and carry out a good comparative listening test of loudspeakers, particularly when many or all of the contestants are close in quality, and sometimes one has to make difficult choices between maintaining similar placement of all the speakers under test and placing each of them exactly as recommended. Like any other speaker review, these comparisons should be treated as rough guides to your own further listening and evaluation rather than as the final word on any of the speakers tested.*

*It is impossible to make a blanket statement about what distinguishes speakers in different price ranges that will be valid for all instances. In general, however, one might expect some combination of improvements in bass extension, maximum output level, and overall sound quality (smoothness, detail, imaging, and so forth) as price goes up, particularly within a given line. The variation in size and weight among the bookshelf speakers was a result of our decision to choose models in a particular price range. Had we gone by size or some other criterion, the prices would have varied substantially.*

## The Future of Laserdiscs

After reading several recent articles in STEREO REVIEW about the digital future of television, I have begun to worry about my collection of laserdiscs. The articles state that the new HDTV standard will be totally compatible with the NTSC format we have now, meaning that we will still be able to watch old programs recorded years ago by an ancient VHS VCR on the brand-new digital VCR of the future. But will future laserdisc players be able to play the old discs? Is there any plan at all to continue producing laserdiscs in the future, or will that consist entirely of CD-Movies?

MOSHE REUVENI  
Givatayim, Israel

*The digital VCR of the future probably will not be able to play actual VHS tapes, but*

*you could easily dub them to the new format. As for HDTV laserdisc players, it would be very surprising if they were not endowed with the ability to play current laserdiscs, unless the HDTV discs turn out to be considerably smaller.*

*We assume that by CD-Movies you mean what is being called Video CD. In the present format, the picture quality from Video CD is considerably inferior to that from laserdisc—perhaps on a par, overall, with that from VHS tape—and the laserdisc market is continuing to grow at a good pace. Moreover, the audio data rate on Video CD is too low to accommodate the discrete 5.1-channel digital soundtracks that are expected on laserdisc in the near future.*

## Power to the Center

I can't let the following comment in August "Dealer's Choice," by Rebecca Day, pass without objection: "Having more power for the center speaker is no problem for Rubinstein, since [it] plays a key role [in home theater], especially in reproducing dialogue. And even if the center speaker . . . needs to be throttled back a bit, the adjustments can be made using the processor's remote control."

Obviously, if the input to all channels is in correct balance, then having more power available to any one channel is irrelevant. The article should have noted whether the selected system amplifiers have the same sensitivity—that is, does each amp produce the same level when driven by 1 volt?

STEPHEN J. EDWARDS  
Yonkers, NY

*The published comment about power was indeed confusing; what really has to be attended to are the relative sensitivities of the various amplifiers and loudspeakers in the system. Fortunately, as noted in the article, level-matching can be dealt with via the processor.*

## Wanted: Wire Recorder

My father made a number of recordings on a Sears, Roebuck & Co. wire recorder in the late 1940's and early 1950's. I am having trouble finding a working player for them so that I can make dubs. Can anyone give me any help? I have checked with a number of local stereo and electronics repair shops with no luck.

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251 La Fonda  
Houston, TX 77060

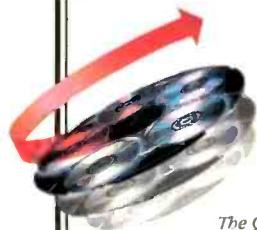
## Bypassing SCMS

Americans have a way of ignoring laws that they find a nuisance—for example, the Serial Copy Management System




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# HOW TO MAKE SURE YOUR 5-DISC CHANGER IS UP TO SPEED.



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## LETTERS

(SCMS). It's ridiculous. I've heard that anyone knowledgeable in electronics will be able to bypass the system. If that's not true, what are the chances of some kind of bypass system's becoming available underground (or overseas)?

BILL OLSEN  
Lake Linden, MI

While we agree that SCMS is a nuisance—particularly in the case of DCC and MD, whose copies are not digital clones—it is required by law on U.S. consumer equipment. And the system will still let you make any number of first-generation direct-digital copies. You usually cannot bypass SCMS by simple means (for example, cutting a wire in the circuit). You'd have to design and construct a circuit to change or eliminate the SCMS data in the digital signal, which is not extremely complex or costly to do, but it is tricky. Trying to sell such a circuit could get you into big trouble, however: lawyers, subpoenas, court appearances, the works.

### Only Connect

PLEASE to manufacturers: On most receivers and amplifiers the many inputs and outputs on the back are much too close together, making it very difficult to connect and disconnect equipment. I have ruined many cables just trying to dislodge them. Why not put the jacks further apart so that a person with average-size fingers can get a good grip on a plug and not have to pull on the cable?

JAAN TONTS  
Rancho Cucamonga, CA

### Corrections

In David Kanada's October "User's Report" on the Energy Home Theater Reference speaker system, two model designations were transposed. The center-channel speaker is the RVS-1, the left and right satellites the RVS-2.

In his September review of a reissue by Bobby Watson, Chris Albertson referred to his "current Blue Note releases." Watson is recording for Columbia now.

In referring to the conductor Kent Nagano's "late New York debuts" at Carnegie Hall and the Met last spring (September), author K. Robert Schwarz overlooked Nagano's prior debut with the New York Philharmonic at Avery Fisher Hall on November 12, 1987.

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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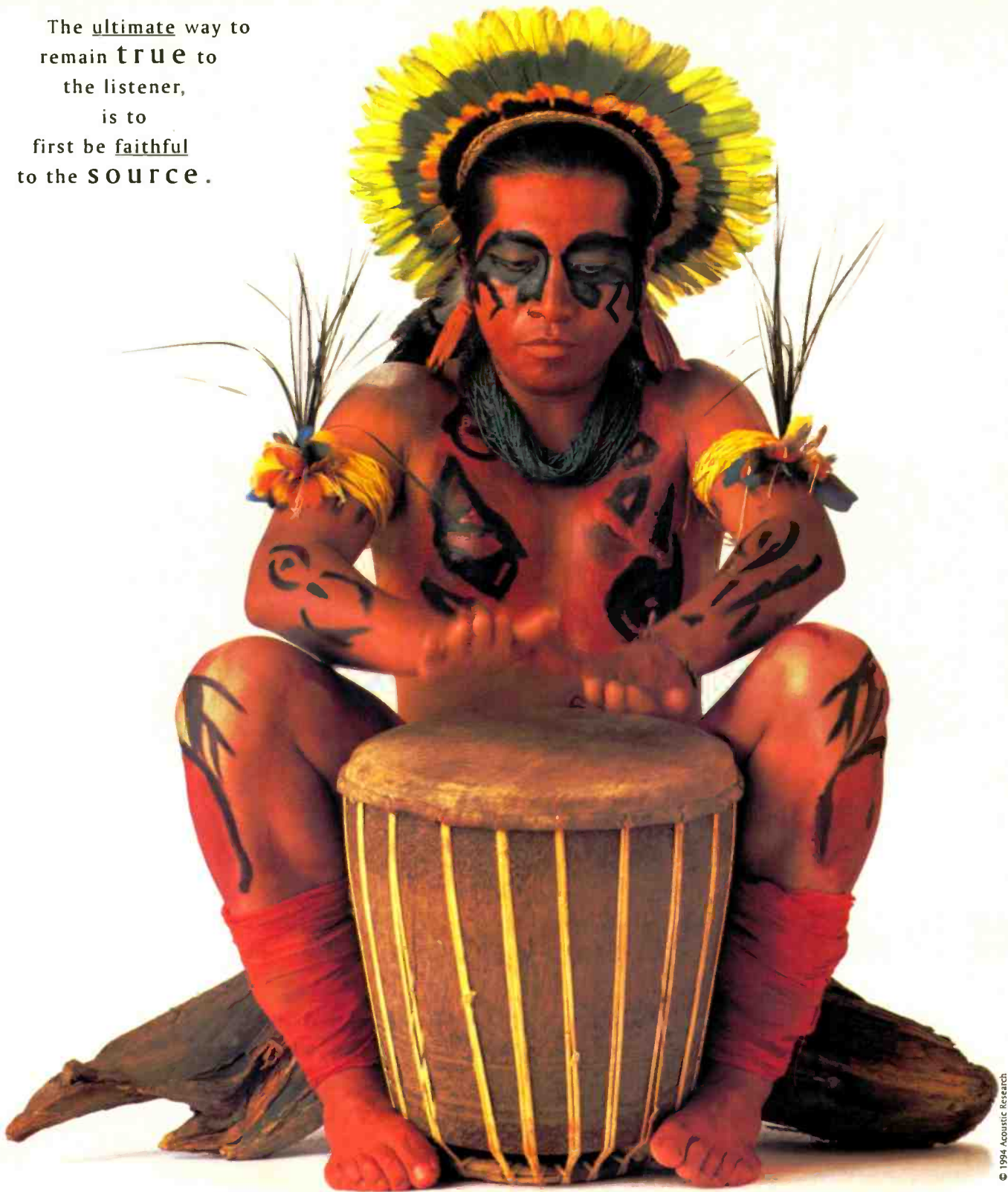
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# NEW PRODUCTS



## TOSHIBA ▲

Toshiba's CV27D48 is the first 27-inch TV with a built-in four-head VHS Hi-Fi VCR. The set is said to deliver 650 lines of horizontal resolution and is equipped with stereo audio/video inputs and a remote control. To simplify recording, the VCR will automatically shift to a

slower recording speed if necessary to fit an entire program on one tape. Other convenience features include such on-screen prompts as clocks that show start and end times. Price: \$1,000. Toshiba, Dept. SR, 82 Totowa Rd., Wayne, NJ 07470.

• Circle 120 on reader service card

## ▼ HSU RESEARCH

Subwoofer or end table? The HRSW12V, Hsu Research's first powered subwoofer, combines a 12-inch driver, an adjustable 24-dB-per-octave crossover, and a 150-watt power amplifier in a vented cabinet that can be used as an end table or TV stand. It's rated down to 20 Hz ( $\pm 2$  dB). The

22-inch-high, 23-inch-diameter cylindrical enclosure has a black fabric sleeve and a Zolatone granite top. Available factory-direct for \$800 (plus shipping) from Hsu Research, Dept. SR, 20013 Rainbow Way, Cerritos, CA 90703; telephone, 310-924-7550.

• Circle 121 on reader service card



## ▲ AIWA

Aiwa's top cassette deck, the AD-F850 (\$400), is a three-head design featuring a two-motor, dual-capstan "quick-response" tape mechanism. Highlights include Dolby HX Pro, Dolby B and C noise reduction, a fine-tuning bias control, a fluorescent display with a linear

tape counter, LED level indicators, and a remote control. The AD-F850 is joined by two other new models: the single-well AD-F450 (\$250) and the dual-well AD-WX727 (\$300). Aiwa, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430.

• Circle 122 on reader service card

## ▼ ONKYO

Onkyo has entered the speaker arena with two THX-certified packages: the System One (shown, \$2,995) and the System Two (about \$4,000). Both systems include three 20-inch-tall front speakers with pairs of 4 $\frac{3}{4}$ -inch woofers and titanium-dome tweeters and two wall-mountable

dipolar surround speakers (brackets included). System One comes with two 30-Hz-capable subwoofers, one of which has a 180-watt amplifier. System Two, for rooms larger than 2,500 cubic feet, doubles the subwoofer count. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446.



# NEW PRODUCTS

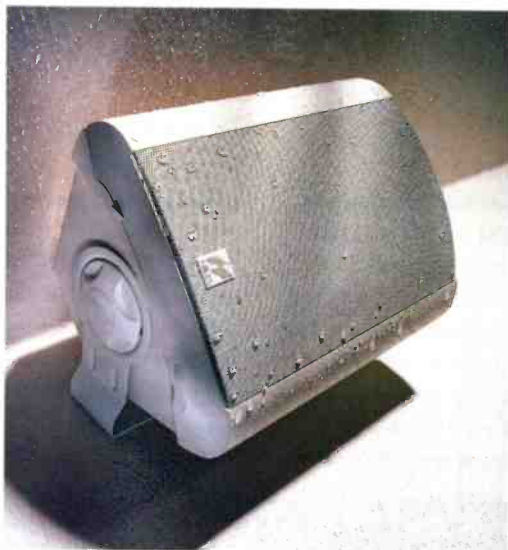


## ▲ CALIFORNIA AUDIO LABS

The Icon mkII CD player from California Audio Labs uses a "hand-trimmed" 18-bit digital-to-analog (D/A) converter, said to provide four times the resolution of standard 16-bit converters, and a digital servo that's said to

provide a tenfold improvement in tracking accuracy over analog servos. Price: \$895. California Audio Labs, Dept. SR, 16812 Gothard St., Huntington Beach, CA 92647.

• Circle 123 on reader service card



## ▲ NILES AUDIO

Niles says its OS-10 two-way speaker is 100 percent water resistant, making it practical for use outdoors. The waterproof woofer and tweeter are housed in a 10 $\frac{5}{8}$  x 8 $\frac{1}{4}$  x 6 $\frac{1}{4}$ -inch plastic cabinet with an aluminum grille and mounting bracket. The

cabinet has threaded brass inserts for OmniMount brackets and comes in black or white. The speaker's low-frequency limit is given as 65 Hz. Price: \$380 a pair. Niles Audio, Dept. SR, 12331 S.W. 130 St., Miami, FL 33186.

• Circle 126 on reader service card

## ▼ ATLANTIC

Atlantic's 50-inch-tall Guitar CD Tower comes in a 120-disc free-standing version (shown, \$110) and a single-sided wall-mountable 60-disc version (\$80). Both are made of steel and are available in black or red. Atlantic, Inc., Dept. SR, P.O. Box 2399, Sante Fe Springs, CA 90670-2399.

• Circle 124 on reader service card



## ▲ APOGEE ACOUSTICS

Apogee's 5-foot-tall Centaurus Column speaker combines a 26-inch dipole ribbon midrange/tweeter and a 6 $\frac{1}{2}$ -inch cone woofer. The 13-inch-wide, 9 $\frac{3}{4}$ -inch-deep wood-frame cabinet, with a black or taupe fabric grille, can be placed against the wall behind it because the ribbon's back waves are deflected out of one side. Bandwidth is 35 Hz to 20 kHz. Price: \$1,495 a pair. Apogee Acoustics, Dept. SR, 35 York Ave., Randolph, MA 02368.

• Circle 125 on reader service card

## ▼ ADVENT

Designed for car stereo systems in need of a modest power boost, Advent's PA415 four-channel amplifier is rated to deliver 15 watts per channel into 4 ohms or 18 watts into 2 ohms (both continuous). It has speaker-level and line-level inputs, two input-

sensitivity controls, and gold-plated connectors, all concealed by its heat sink. Dimensions: 1 $\frac{7}{8}$  x 8 $\frac{1}{2}$  x 4 $\frac{3}{4}$  inches. Price: \$149. Advent, Dept. SR, 25 Tri-State International Office Center, Suite 400, Lincolnshire, IL 60069.

• Circle 127 on reader service card





NAME: Chris McAdams.  
PROFILE: Furniture Designer.

“The other day my dad informs me that most normal people my age are actually looking forward to settling down, driving station wagons and buying dishes that aren’t plastic. Which translates into: they don’t play the saxophone at three in the morning, eat cheese puffs for breakfast, or sleep ‘til noon.”



on Saturdays. Of course, he also thinks The Who is part of an old Abbott and Costello routine, Red Hot Chili Peppers are used for making tacos and Columbia House must be where they grind those tasty coffee beans.”

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- The Allman Brothers Band—A Decade Of Hits 1969-79** (Polydor) 430-439
- Rod Stewart—Sing It Again Rod—Grt. Hits** (Mercury) 423-822
- The Very Best Of The Righteous Brothers—Unchained Melody** (Verve) 423-772
- The Moody Blues—Grt. Hits** (Polydor) 423-756
- Eric Clapton—Time Pieces** (Polydor) 423-467
- John Lennon Collection** (Capitol) 405-308
- Lynyrd Skynyrd—Skynyrd’s Innards/Their Grt. Hits** (MCA) 381-129
- Grateful Dead—Skeletons From The Closet** (Warner Bros.) 378-406
- Fleetwood Mac—Grt. Hits** (Warner Bros.) 375-782
- Journey’s Greatest Hits** (Columbia) 375-279
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- Bad Company—10 From 6** (Atlantic) 341-313
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- Cheap Trick—Grt. Hits** (Epic) 428-656
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- Counting Crows—August And Everything After** (DGC) 467-944
- Jimmy Buffett—Songs You Know By Heart** (MCA) 339-911
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- Indigo Girls—Swamp Ophelia** (Epic) 477-323
- Nine Inch Nails—The Downward Spiral** (TVT/Interscope) 476-739
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**Jodeci**—Diary Of A Mad Band (Uptown/MCA) **473-116**

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**Haddaway** (Ansta) **471-409**

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# NEW PRODUCTS



## ◀ ZENTEK

Zentek's CS720 wireless headphone system uses an infrared transmitter with an operating range of "up to 23 feet." The AC-powered transmitter/base has a miniplug (a phone-jack adaptor is supplied) and a built-in charger for the two AAA Ni-Cd batteries (not included) the headset requires. A volume control is on one headphone. Price: \$60. Zentek Corp., Dept. SR, 3670-12 W. Oceanside Rd, Oceanside, NY 11572.

• Circle 128 on reader service card



## ▲ ALLISON ACOUSTICS

Allison's PD8.3 speaker combines two 8-inch woofers, a 4-inch midrange driver, and a 1-inch tweeter in a 34-inch-tall sealed hardwood cabinet with a pecan veneer. The system is magnetically shielded and has inputs for biamping or triamping.

Bandwidth is given as 35 Hz to 20 kHz and sensitivity as 89 dB. Rubber feet and brass floor spikes are included. Price: \$900 each. Allison Acoustics, Dept. SR, 478 Stanford Ave., Danville, KY 40422.

• Circle 129 on reader service card

## JASCO ▶

Instant car CD: Jasco's HE 8647 adaptor kit converts the output of a portable CD player into a radio signal so that it can be played through any car stereo system equipped with an FM tuner. It has an adjustable transmitting frequency and provides 4.5-, 6-, or 9-volt DC power to the player via a cigarette-lighter adaptor. Price: \$33. Jasco, 311 N.W. 122nd, Oklahoma City, OK 73114.

• Circle 130 on reader service card



## ▼ NIKKODO/BMB

A new form of blackmail? The BMB DA-X11 karaoke amp from Nikkodo includes a tape deck so you can record sing-along performances. It also has five mike inputs and a digital key

shifter and echo processor. Rated power output is 100 watts per channel. Price: \$1,599. Nikkodo USA, Dept. SR, 4600 N. Santa Anita Ave., El Monte, CA 91731.

• Circle 131 on reader service card



## ▲ BELL'OGGETTI

The AVS-767 audio/video rack from Bell'Oggetti is designed to accommodate television sets with screen sizes up to 32 inches diagonal. Made in Italy of heavy-gauge metal with a black powder-coated finish, the rack has five tempered-glass shelves and features a hollowed-out

post (rear) for organizing and concealing component power cords and interconnects. The rack's overall dimensions are 31½ x 34 x 19 inches. Price: \$850. Bell'Oggetti, Dept. SR, 711 Ginesi Dr., Morganville, NJ 07751-1250.

• Circle 132 on reader service card

# NEW PRODUCTS



## ◀ NOMAR

Nomar's Speaker Friendly bracket is designed for wall-mounting and accommodates speakers from 8 to 24 inches tall and weighing up to 20 pounds. Once seated in the  $\frac{3}{16}$ -inch steel bracket, the speaker pivots horizontally. Available via mail order for \$39.95 (plus shipping) from Nomar Industries, Dept. SR, P.O. Box 301381, Portland, OR 97230; telephone, 503-520-1341.

• Circle 133 on reader service card

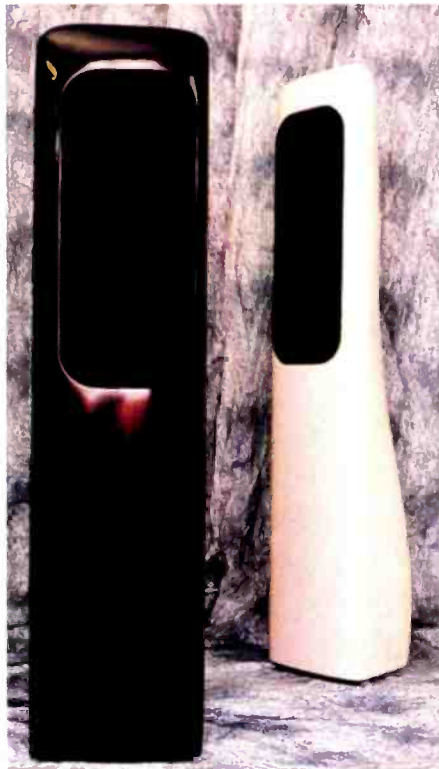


## ▲ SIGNATURE TECHNOLOGIES

The classic styling of Signature Technologies' SRd-12 CD player seems incongruous with its function until you find out that there's a vacuum tube in its analog output stage. The player also features a Philips CDM 9 transport, a 1-bit digital-to-analog (D/A) converter, favorite-track

memory for more than 100 discs, and an optical digital output. The standard finish is rosewood (shown); oak, walnut, and cherry finishes are also available. Price: \$1,695. Signature Technologies, Dept. SR, P.O. Box 09068, Milwaukee, WI 53209.

• Circle 134 on reader service card



## ▲ ROSINANTÉ

The Evolution speaker from Rosinanté unites two 7-inch "polyglass" woofers and a 1-inch inverted titanium-dome tweeter in a unique 4-foot-tall cast-polymer cabinet. The density and shape of the seamless cabinet, made via a patented process, are said to eliminate resonances

and image-muddling refraction. Bandwidth is given as 28 Hz to 22 kHz and sensitivity as 93 dB. Power-handling is 50 to 300 watts. Finish is white or black simulated marble. Price: \$2,000 a pair. Rosinanté, Dept. SR, 602 Acorn Plaza, Eudora, KS 66062.

• Circle 137 on reader service card



## ◀ PANAMAX

Panamax's Coaxmax 6 surge suppressor, designed to protect A/V gear from electrical spikes, boasts a 40,000-ampere surge capacity. Price: \$129. Panamax, Dept. SR, 150 Mitchell Blvd., San Rafael, CA 94903.

• Circle 135 on reader service card

## ▼ CANTON

Canton's Fonissimo subwoofer/satellite speaker system includes two 5-inch-cube satellites, each containing a 4-inch midrange driver with a coaxially mounted tweeter, and an 11½-inch-high band-pass bass module with two 7-inch

woofers. System bandwidth is given as 22 Hz to 30 kHz. All three pieces are available in black or white vinyl with matching grilles. Price: \$829. Canton, Dept. SR, 915 Washington Ave. S., Minneapolis, MN 55415-1245.

• Circle 136 on reader service card





N E W

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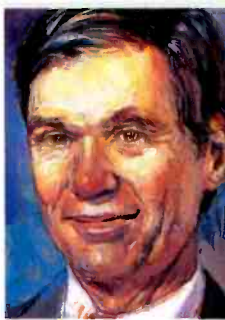
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# AUDIO Q & A

BY IAN G. MASTERS

## To Sub or Not

**Q** An audio salesman told me that I must use a subwoofer to reproduce the low-frequency effects in movie soundtracks. I have full-size speakers and a parametric equalizer that lets me boost the bass when the system is in Dolby Pro Logic mode. It sounds great, so why would I need extra equipment? Could I be damaging my system the way I have it set up? **RANDY SADOWSKI**  
Milwaukee, WI

**A** The subwoofer may be a convenient solution to a couple of problems that sometimes arise in stereo systems. Some rooms cannot accommodate large main speakers, and many small speakers—but by no means all—tend to be shy in the low end. If your speakers are bass-shy, an outboard subwoofer can be used to supply that bottom octave or so; if your speakers are already producing that part of the spectrum, however, you don't need a sub to produce it.

Still, even with speakers that are able to reproduce the very low sounds, room acoustics can play havoc with bass response. Placing a full-range speaker so that it provides good stereo imaging can cause standing waves or other problems that result in less-than-smooth bass. In that case, a subwoofer can be used to even out the low end because it can be placed just about anywhere in the room. But again, if you don't have the problem you don't need the cure.

Either way, it's safe to run your system without a subwoofer unless you crank the bass so high that you try something.

## Ambiguous Ambience

**Q** My surround-sound receiver has a number of digitally produced ambience modes, but I'm not sure how to adjust them because I've never been in a recording studio or concert hall and don't know what they sound like. How do I set the controls so they'll sound right? **MICHAEL GAYLE**  
Philadelphia, PA

**A** First, forget what they call the various modes. Instead of Hall, think "big, reverberant space"; for Studio, think "smallish, dead room"; and so forth. Then use the controls to create pleasing effects for the various sorts of music you listen to. If you've never been to a concert hall, it's not an acoustic reference for you, so it doesn't really matter whether or not your enhancer sounds like a genuine hall, let alone a particular one. Or just leave the adjustments as the maker set them—most of the good ones create plausible, pleasant acoustic effects at their default settings.

## Dueling Preamps

**Q** My surround-sound system contains a preamp/decoder that would normally feed power amplifiers directly. Instead, I have it connected to three integrated amplifiers, each with its own built-in preamp stage that can't be bypassed. Am I missing out on better sound quality by doubling up the preamp stages? **JAMES W. THOMPSON**  
Colorado Springs, CO

**A** I doubt it. Generally, the fewer things in the signal path the better, but pure electronic components—such as preamplifiers—are pretty transparent in terms of noise and distortion. Just make sure that the secondary preamps' tone controls, loudness switches, and anything else that might alter the frequency response are in their neutral positions—or switched out if possible.

## Flat Response

**Q** I often come across the term "flat response" when audio equipment is reviewed. What is it? What is its importance? Can it be determined or measured at home? **JUANITO NATIVIDAD**  
Hanover Park, IL

**A** One of the major virtues of a good piece of audio gear is that it be *linear*, that the output it produces for a particular input level be independent of frequency. In other words, if an amplifier fed a 1-millivolt signal at 1 kHz produces an output of, say, 1 volt, it should do the same at 20 Hz and 20 kHz, and at all frequencies in between. A component's ability to do that is usually plotted on a graph where the horizontal axis represents the frequencies within the audio spectrum, from lowest to highest, and the vertical axis represents the device's output at each frequency with a fixed input level. The result is a graphic representation of its frequency response: a perfect response curve would be a straight line, or "flat."

Flat response is important to the character of a system's sound: Too little treble and it will sound muffled, too little bass and it will sound thin, and dips and bumps in the middle will make music sound unnatural. At home, you can get some idea of a component's response by using a test CD that plays specific frequencies across the audio spectrum. Feed the signal through the component you want to check and then to a power amp with output meters. Watch the meters to see how the levels of various frequencies compare—they should be the same if the component has a flat response. If your amp doesn't have output indicators, the level meters of a cassette deck can sometimes



N E W

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you won't see it in your home, either.) However, there is one last instruction you should follow. Hold

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be used instead, although those may provide only 1- or 2-dB resolution.

### Tiny TV Speakers

**Q** My music system is in one room and my TV in another, which means that when I watch TV I have to listen to the tiny speakers in the set. Is there any reason television manufacturers don't incorporate 50- or 100-watt amplifiers in their sets so that they could drive a normal pair of speakers?

LARRY LOZNER  
Whitestone, NY

**A** Traditionally, TV makers have shown little concern for sound quality. But in recent years, as A/V systems have become increasingly popular, they have made great strides in improving the quality of both the speakers and the amplifiers they put in their TV sets. Even so, they haven't gone to the extreme of incorporating high-power amps (cost, weight, and heat are big factors). Instead, they have bumped power up modestly (read: a few watts) and added A/V output jacks to many sets, on the principle that anyone who's really concerned about audio quality will feed the signal to an outboard sound system anyway.

A few elaborate big-screen TV's do, however, have built-in Dolby Pro Logic decoders and five channels of amplification,

so that (theoretically) all you need to add is a couple of surround speakers. Even these amplifiers tend to have a fairly low output (maybe 10 or 15 watts), though, so external amplification is usually desirable. But the built-in stuff is often okay in small rooms or until you can afford the extra gear.

### Digital Print-Through?

**Q** I have read a lot about print-through in analog tapes. I am considering moving into one of the modern digital recording media and wonder whether the same effect happens with them. If not, why not? Magnetic patterns are magnetic patterns, aren't they?

CLYDE A. RUSSELL  
Thornton, CO

**A** Yes, they are, and digital tape media, such as DCC and DAT, might well have lots of print-through. Fortunately, though, the playback systems simply ignore it. In analog tapes, print-through—the leakage of magnetic patterns on one layer of tape through to the next—might be on the order of 40 or 50 dB below the program level. That's well within the range of audibility, especially if what's leaking is loud and what's currently playing is soft.

In any kind of digital recording, the playback system detects only the presence or absence of a signal at each moment, with no

concern for its level. In practice, if the signal falls below a certain level, the pickup doesn't respond to it at all. Digital tape print-through falls into that category.

### CD to Phono Input

**Q** My roommate recently bought a new CD player. I'd like to attach it to my current system, but there aren't enough line-level inputs to accommodate it. If I patched it to the phono inputs, would that damage my receiver?

RYAN CONOVER  
Bettendorf, IA

**A** It probably won't do any damage, but it is sure to sound terrible. For one thing, the phono stage is equalized—it boosts the bass and cuts the treble quite a bit in order to reverse the equalization applied when a vinyl record is made. For another, the phono input has an extra amplification stage to handle the very low output of a phono cartridge; feeding it a high-level signal such as the output of a CD player will overload it and cause excruciating distortion.

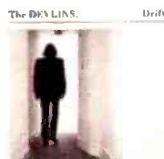
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# PERIPHERALS

PRODUCTS AND TRENDS

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MAINSTREAM AUDIO/VIDEO

## Cataloging Your Recordings by Computer BY CHRIS ALBERTSON

Keeping track of discs and tapes is no big deal if you have a modest collection. You set aside some space—perhaps on a shelf or in one of those specially designed wall racks or cabinets—and arrange them in some sort of logical order. But music collections have a tendency to grow, and before you know it you've got a pretty good library on your hands. When you reach that point, it's time to set up some kind of inventory system. Actually, you should begin cataloging *before* the collection becomes unwieldy, but most of us don't.

Back in the days of vinyl, I simply put my LP's on shelves in alphabetical order, first by label and then by artist. That made it fairly easy to locate a record, but the physical arrangement was impractical because I had to shift the entire collection periodically to make room for new arrivals. Having amassed several thousand records, I had to find a better way, so I created a card file and began storing them in order of receipt, assigning a library number to each one. Then, in the early Eighties, when my card file was almost up to date, I switched to a computerized system.

A computerized catalog provides

several advantages over a paper file, not the least of which is the ability to quickly locate a tape or disc according to just about any criteria. Whether you need to find all your recordings of *Cherokee* or locate a specific performance of it, the information is just seconds away. Another great benefit is that you can generate all kinds of useful lists. For example, I have a 110-page printout of my entire catalog, sorted by artist, that I regularly supplement with a list of recently received CD's—and it's easy to add the new recordings because my database includes acquisition dates.

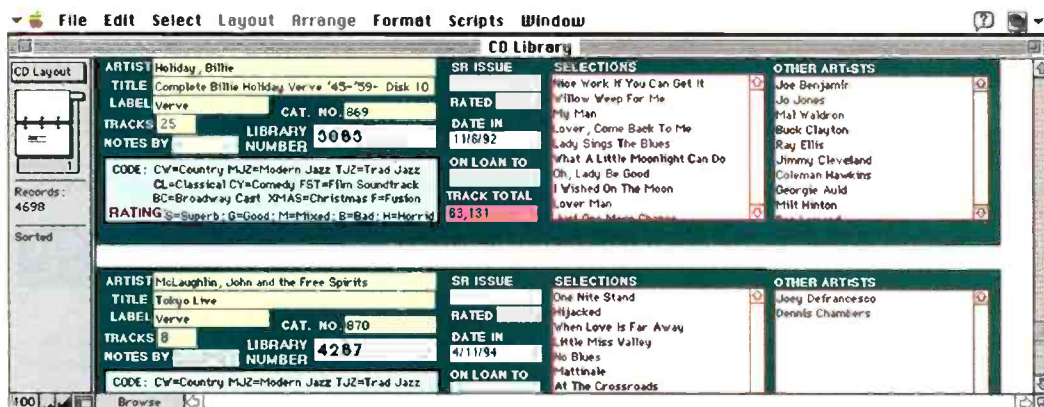
Of course, to do any kind of computerized searching or sorting you need to organize the raw data, so the first thing to consider is what kind of information you want to be able to retrieve. Then you need a good database program. I use FileMaker Pro from Claris, a full-featured business program, and if you already have one of several similarly powerful programs, including Borland's dBase and Microsoft's FoxPro, that should work just as well. But mail-order prices for these programs typically range between \$100 and \$300, which is a lot to spend just on a music catalog. The less powerful database programs in integrated

software (Claris Works, Microsoft Works, and so on) should also be quite adequate.

A database program will let you set up a recording catalog and customize it as you see fit. Each disc or tape in your collection is entered as a "record" (an apt term in this case) made up of "fields" that hold such specific data as the artist's name, the album title, and your library number. Those three fields are the bare minimum, but with only those you have barely progressed beyond the alphabetized card file, so you'll probably want to include more data fields. Just keep in mind that it's very easy to go overboard when structuring a database. When you consider including song titles, composers, individual track timings, etc., think about keying in all that information—it's a slow, laborious process that few of us have the patience for, especially if there's a large collection to catalog from the start.

Because I had been too ambitious when setting up my field-laden LP database, which slowed data entry to a discouraging snail's pace, I took a more prudent approach when I started cataloging my CD's a couple of years ago. The collection had already reached 2,000 titles (a reviewer's

perk), a huge backlog that I wanted to deal with as quickly and effortlessly as possible. To ease the burden, I set up a streamlined database and began making entries in only three key fields: artist's name, album title, and label. Fortunately, FileMaker Pro automatically assigns a number to each record in a database (many other programs do the same), and



A section of the author's own CD catalog created with the FileMaker Pro database program.



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



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



## Surround Speakers

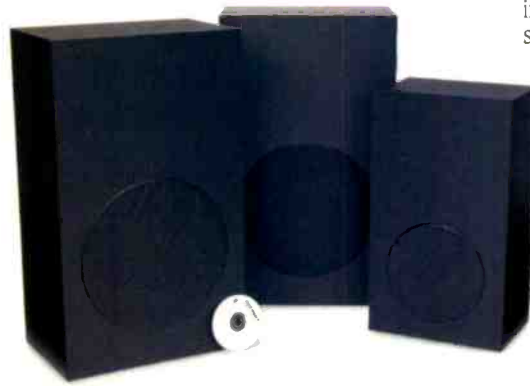
Cambridge SoundWorks makes two "dipole radiator" surround sound speakers. Dolby Laboratories recommends dipole radiator speakers for use as surround speakers.

*The Surround* has a very high power handling capacity and is often selected for "high end" surround sound systems. *Audio*, describing a system that included *The Surround* said, "In many ways the surround sensation was every bit as good as far more expensive installations." **\$399 pr.** The smaller *The Surround II* is arguably the country's best value in a dipole radiator speaker. **\$249 pr.**

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

## Powered Subwoofers

The original *Powered Subwoofer* by Cambridge SoundWorks consists of a heavy-



duty 12" woofer housed in an acoustic suspension cabinet with a 140-watt amplifier and a built-in electronic crossover. *Stereo Review* said it provides "deep powerful bass...31.5 Hz bass output was obtainable at a room-shaking level... they open the way to having a 'killer' system for an affordable price." **\$699.** Our *Slave Subwoofer* uses the same woofer driver and cabinet, but does not include the amplifier or crossover. It can only be used in conjunction with the *Powered Subwoofer*. **\$299.** The new *Powered Subwoofer II* uses a 120-watt amplifier with an 8" woofer. **\$399.**

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

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

## Home Theater Speaker Systems

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



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

For information on other home theater speaker systems - or on any of the products we make and sell - call 1-800-FOR-HIFI for your free color catalog. Thanks.



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

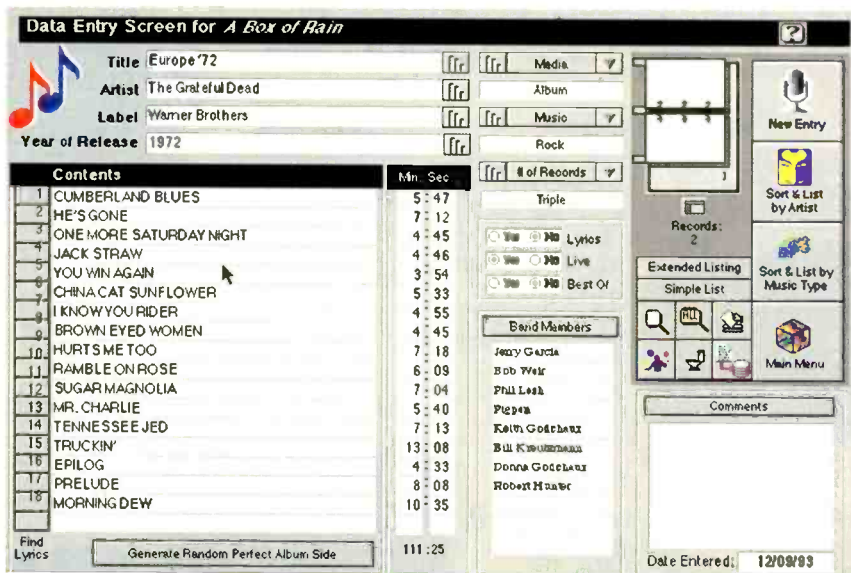
## Center Channel Speakers

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



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

# PERIPHERALS



**A Box of Rain is a free recording-catalog template for use with FileMaker Pro.**

those numbers became the library numbers of the corresponding CD's, though I still had the chore of physically numbering all the jewel cases and shelving them in order.

With only three items to enter for each CD, I was able to breeze through the 2,000 records in a few days. Once my computer catalog was up to date, it was easy to maintain a routine of entering new discs as they were acquired, and I am still leisurely keying in additional data, such as song titles and secondary performers, for the original 2,000.

Creating your own catalog structure also gives you the advantage of being able to add new fields at any time. You might want to add a category field, for example, with a code for Christmas records that will make it easy to generate a holiday list once a year. Although I have changed the look and structure of my database a few times—adding such new fields as the record label's catalog number, the date received, and the number of tracks per disc—I keep it fairly simple. If you have the time and inclination, you can always add bells and whistles (such as a fancy screen look) later. For example, I recently set up my database so that it automatically displays a running total of tracks—certainly not essential information, but interesting nonetheless.

If you have the FileMaker Pro program and wish to skip the creative process, Tom Hyde offers his ready-made cataloging database, called *A Box of Rain*, for free. A limited demo copy can be downloaded from America Online (AOL), and sending an e-mail message to Mr. Hyde (Seastack@AOL.com) will get you a password that turns it into a full working copy. *A Box of Rain* is pleasing to the eye and has lots of useful features as well as some extravagant ones. Unless you have a modest-size collection, for instance, you should probably avoid the Album Cover and Sound Sample fields (not shown in the screen shot above)—both require the creation of additional, space-consuming graphic and sound files that are guaranteed to slow you down considerably.

If you don't already own a database program, you might check out some inexpensive "shareware" programs for the Mac, DOS, and Windows environments. Many of these programs can be downloaded free from computer bulletin boards (BBS's) or such online services as AOL and CompuServe. Most shareware authors request a nominal payment once you decide to use the program. It's on the honor system, but paying for shareware encourages further development, and in many cases registered users are entitled to periodic upgrades. Here are a

few shareware cataloging programs I've come across:

For IBM's and compatibles, there's *Organize Your Records & CDs*, \$3.95 plus postage and handling from Public Brand Software (P.O. Box 51315, Indianapolis, IN 46251; 1-800-426-3475). I haven't tried the program, but Public Brand rates it highly.

*CD Catalog* is a HyperCard-based program for the Macintosh that even allows you to enter liner notes, although that could become a lifetime occupation. Fields include artist, orchestra, album title, song titles and timings (the program automatically totals them), label, catalog number, music category, and stereo/mono. You can include up to six volumes of a series in one record. Like most of these programs, *CD Catalog* allows you to import and export entries from other databases (including its sister program, *LaserDisc Catalog*); unlike other programs, it can generate labels for cassettes or DAT's from the data. You can download a demo version of *CD Catalog* from AOL. Author Mark Calice of Ardenwood Software (34766 Monaco Common, Fremont, CA 94555; e-mail, MarkC17@AOL.com) will mail you a fully functional copy for \$35 if you live in the U.S., or \$45 if you're overseas.

*DiscTrak System* is a DOS-based entertainment cataloging program for IBM's and compatibles. I haven't used it, but it claims to be loaded with features. The price is \$30 from Blaine R. Young (707-202 Clark Court, Leesburg, VA 22075). *LaserDisc Gazette* subscribers get a \$10 discount and can download a fully functional evaluation copy (file name: DT-171.ZIP) from the *Gazette's* BBS (703-779-2961).

*Record Collector*, another HyperCard-based Macintosh program, contains more fields than you might need, but author Charles Wiltgen (e-mail, CWiltgen@mcs.com) has kept it reasonable. Fields include format (CD, CD-3, LP, VHS, and so on), condition (mint, poor, etc.), song titles, and comments. Pop-up menus minimize typing. A demo copy of the latest version, 2.1, should be available on America Online by the time you read this; it will include instructions for obtaining an unlocked copy. □



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

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

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

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

### The New Ensemble

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



### So What's New?

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

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

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

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

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

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

### The New Ensemble II

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

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

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

### The Ensemble III

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



speakers are only 4 1/2" x 6 1/2" x 5" and its subwoofer is 8" x 8" x 15".

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

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

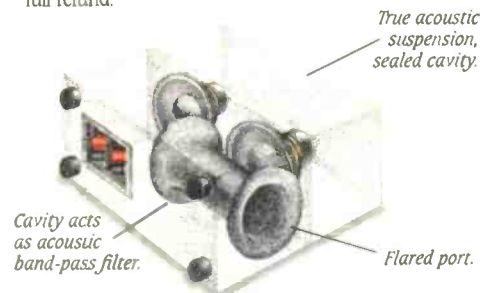
With most recordings *Ensemble III* will sound virtually identical to *New Ensemble II*. It simply won't play as loud. Its construction quality is normally found only in much more expensive speakers.

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



### 30 Day Home Audition.

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



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CIRCLE NO. 6 ON READER SERVICE CARD



# SIGNALS

BY KEN C. POHLMANN

## Smart Radio

In the fast-paced world of CD, CD-I, CD-R, CD-ROM, 3DO, CDX, X-Eye, CD+G, MD, LD, TV, DCC, DAT, DSP, DSS, THX, VCR, VHS, S-VHS, VHS-C, 8mm, Hi8, CATV, and HDTV (not to mention Dolby B, C, and S), AM and FM have become technological dinosaurs. Aside from the unenthusiastically received AM stereo format, the last technological breakthrough in radio was FM stereo—which occurred thirty-five years ago. In truth, amplitude modulation and frequency modulation were well understood when Thomas A. Edison was still selling the wax-cylinder phonograph.

True, radio is far and away the most powerful medium on the planet. Add together all the other consumer electronics machines, and they still wouldn't rival the countless billions of radios out there. The power of radio is easy to understand. It's an inexpensive, wireless medium that delivers good sound over long distances. Nothing else comes close in terms of cost effectiveness.

Yet, as any T-Rex would tell you, just because something is big and powerful doesn't mean it will dominate forever. Despite what marketers like to believe, the number of hours a person can spend in leisure activities is finite. As newer, more engaging mediums are developed, the time we spend listening to radio will inevitably dwindle. Savvy broadcasters everywhere are asking whether radio's appeal can be expanded with new, low-cost features. The answer is maybe—if a technology that has been widely used in Europe for a decade catches on here.

Radio Broadcast Data Service (RBDS or RDS for short) adds a nonaudio data channel to conventional FM broadcasts. RDS can supply and display alphanumeric data such as station call letters and program type; its "radio text" feature, in addition to no-brainers like providing song titles and artist names, could flash everything from sports scores to Nike commercials. RDS can also send a trigger that switches your radio to traffic or emergency reports as they are broadcast. To receive RDS broadcasts, you need a radio that's equipped with an RDS decoder and an alphanumeric display. On their end, broadcasters need an RDS encoder and must feed in the RDS information.

I recently popped an RDS-equipped Denon DCT-950R CD receiver into my dashboard and took it for a test drive. I discovered two RDS stations in Miami, at 91.3 and 93.1 MHz. Actually, the receiver's RDS Seek function found them and displayed their call letters, WLRN and WTMI, in the LCD panel. I hit a button labeled PTY to find out about each station's program type, and the word PUBLIC came up on the display for WLRN, CLASSICL for WTMI.

The RDS format lets you browse through an electronic catalog with twenty-four PTY entries such as NEWS, TALK, SPORTS, TOP 40, COUNTRY, and JAZZ. Once you find the kind of programming you're interested in, you can perform a station search by hitting a couple of buttons. In my case, I searched the CLASSICL entry, and the radio correctly tuned to WTMI.

In addition, you can engage an Alternative Frequency (AF) function; when signal conditions deteriorate on the station you're listening to, the radio will automatically scan incoming RDS data to find

audio reception had begun to deteriorate, but it failed when the FM signal became audibly quite poor. True to its digital nature, it didn't become noisy or garbled; it simply vanished. But if FM signal strength failed momentarily, the Denon head unit's memory retained the current RDS display. Clearly, RDS added utility and convenience to the radio.

The only obstacle to RDS seems to be the classic chicken-and-egg problem. Radio stations won't start encoding RDS data until people start buying RDS radios. And that can't happen until manufacturers offer them for sale. So far, only a handful of companies—including Denon, Onkyo, Blaupunkt, and Panasonic—are selling RDS-equipped components, for home and car, and General Motors is the only carmaker offering an RDS radio option (on some models).

So RDS is the next big thing, right? Well, as with any good chicken-and-egg story, there's a fox (or two) lurking just outside the coop. In this case, the fox's handle is DAR (Digital Audio Radio). The Electronic Industries Association and the National Association of Broadcasters are testing several proposed DAR systems and will present their recommendation to the FCC, which will eventually select a standard. Whichever system is chosen, whether it's transmitted by satellite or by terrestrial towers, DAR will provide CD-grade sound quality, immunity to multipath and other interference, and its own data services. Why should radio stations and consumers invest in RDS when an entirely new, digital generation of radio is on the horizon? Moreover, some critics argue that RDS is obsolete even for conventional FM applications because it's too slow.

Depending on your point of view, the potential, or threat, of newer and better broadcast technologies creates a wait-and-see attitude, which can be fatal in a chicken-and-egg scenario. So far, perhaps 200 radio stations have started encoding RDS data. As of this writing, as far as I know, none of them are sending anything really useful—like traffic information. This year and the next will be critical for RDS: if it doesn't kick-start soon, it will be overrun by new technologies. One thing is certain. As analog radio enters its second century, it will have to adapt to a digital world. And as broadcasters embrace digital improvements such as DAR, AM and FM could join the LP. □

**Can radio's  
appeal be expanded  
with new,  
low-cost features?  
Well, maybe.**

another station (on another frequency) broadcasting the same type of program.

An RDS message consists of eight alphanumeric characters: on some RDS receivers the displays are static, but on others they scroll. Radio text raises an interesting liability issue: Would you sue the radio manufacturer or the radio station if you drove into a tree while you were reading your radio? It might make more sense to have a memory that would save selected messages for display when the vehicle stops.

The reliability of RDS data depends on the integrity of the FM signal. During my test, the RDS data was reliable even after





# Introducing *SoundWorks* By Henry Kloss.

We'll get right to the point. *SoundWorks* – our new amplified speaker system may well be the most exciting product ever designed by Henry Kloss – and the most affordable. Never before has so much high quality, wide-range, natural, "big" sound come from such a small, affordable system. It is ideal for literally hundreds of applications, and thousands of people.

*SoundWorks* consists of a pair of satellite speakers (app. 3 1/2" x 3 1/2" x 3 1/2") and a compact, powered subwoofer cabinet that encloses a 4" woofer, a 3-channel amplifier, equalization and crossover electronics, as well as a control panel.

## The Satellites.

The small satellites are magnetically shielded so they can be used very close to a TV or computer monitor. They contain a remarkable 2" speaker driver with a long-throw/wide-range design that reproduces high and mid frequencies all the way down to 150 Hz, without the need for a "midrange" driver. You can order *SoundWorks* with satellites finished black, or in "computer-beige." The satellites can be used as is, hung on walls using their back-panel keyhole slot, used with their supplied mini-stands, or they can be attached to a computer monitor with their velcro kit (supplied).

## The Subwoofer.

The subwoofer cabinet (a little bigger than a shoe box: 5" x 8" x 9") reproduces only non-directional bass so it can be placed in out-of-the-way places – on the floor behind your TV set, under your computer desk, or in back of furniture. It contains a 3-channel amplifier that's been precisely tailored to match the speaker drivers. Its control panel includes a stereo mini-jack input for connecting to a computer or a portable CD player, a "set and forget" bass level control, and connecting terminals for the satellite



AVAILABLE  
OCT. '94

**\$199**  
Not including CD player

Never Before Has So  
Much High Quality,  
Wide Range, Natural,  
"Big" Sound Come  
From Such A Small,  
Affordable System.

speaker wires. It also has an input for 12 volt so you can plug *SoundWorks* into the cigarette lighter in your car or boat!

## The Sound.

"Amazing." "Remarkable." "Unbelievable." These are the words used by leading members of the audio press at the unveiling of *SoundWorks*. In terms of frequency range, tonal balance, stereo imaging and overall sound, *SoundWorks* compares very favorably with component music systems costing far more. It just doesn't seem possible that a system so small could produce a sound so "big." But it does.

## The Applications.

Because of its small size and price, and because of its magnetically shielded satellites, *SoundWorks* is ideal for use as a multimedia speaker with any computer (it sounds far better than any we've heard designed for that use). It fits easily into smaller rooms – like kitchens, dens, dorms and bedrooms. Its 12-volt capabilities make it perfect for boats, campers and cars. And it's small enough to pack in a suitcase, so you can travel with it.

## The Price.

You can buy *SoundWorks* only factory-direct from Cambridge SoundWorks. Because we eliminate expensive middlemen, we can sell *SoundWorks* for only \$199. We haven't heard a system for anywhere near its price that we think sounds nearly as good. Period.

## 30-Day Risk-Free Audition.

With our 30-day risk-free home audition, you can listen to *SoundWorks* the right way – in your home, with your music. If you aren't happy, return it within 30 days for a full refund. We even reimburse your original UPS ground shipping charges in the continental U.S.

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The critics already have. Our top-of-the-line THX model, the TX-SV919THX, was hailed by Technical Editor David Ranada in a recent issue of *Stereo Review* as "the best

AV receiver I have ever tested". Our TX-SV717PRO won the first ever "Hot Ticket" award from *Home Theater Technology*. And just as a great film can be made on a small budget, so can great Home Theater sound be had via our TX-SV414PRO.

So, we urge you to visit your Onkyo dealer and choose the Home Theater Receiver model that's right for you. It'll add such a new dynamic to your home viewing, you might even want to rent one of the films shown at left. They're always in.

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# CAR STEREO



## Sanyo MDR-300 MD Changer Receiver

KEN C. POHLMANN • HAMMER LABORATORIES

The Sanyo MDR-300 is a head unit with a detachable face. It's also a receiver with pretty healthy power output. It's also a CD changer controller. And last, but definitely not least, it's also a MiniDisc player—three of them actually. No, it's not some kind of cockamamie cartridge-loading deal. It's an MD player with three loading slots and three eject buttons.

At first glance, the MDR-300 does not look like a MiniDisc changer. If you hit the Open button, however, the front panel falls forward on its bottom hinges, revealing three MD loading slots stacked horizontally alongside their eject buttons. Each slot is marked with a back-lighted number. Three MiniDiscs can be loaded at a time, and one or two of them can be ejected and replaced while the third is playing.

The front panel does have an Off button, but if you're like me, and you simply grab the detachable face and go, the MDR-300 will remember what it was doing, and when you put the face back on it will start CD or MD playback where it left off or tune to the radio station you were listening to. The Off button has another function: When you hold it down for more than 3 seconds, it switches the display color between green and amber.

The Audio Control button is a weirdly designed four-sided rocker; the upper right and lower left corners let you vary volume, bass, treble, balance, and fader. These various controls are selected with the bottom right corner of the rocker. The top left corner is a bass-expander (BSX) control—it punches up bass response. Three mode buttons let you choose radio, CD, or MD playback; each of them turns the head unit on. The CD and MD buttons also act as play/pause controls. The radio mode button lets you step through the available bands—FM1, FM2, FM3, and AM—and if you hold it down the tuner scans the preset stations in the selected band.

The Tuning/Track double rocker lets you tune the radio incrementally with its + and - ends. A quick touch gives you seek tuning, and a longer touch switches to manual tuning (an-

other long touch switches you back). When you're playing an MD or CD, the rocker provides track selection or, when it's held down, audible fast search. The Display button switches the alphanumeric readout from an MD between playing time, disc title, and track title. In radio mode, the Display button selects stereo or mono.

There are six radio preset buttons. Preset 1 also provides an MD Scroll function; the selected title information (up to thirty-two characters) scrolls across the display. Preset 2 also lets you audition the first 10 seconds of CD and MD tracks, or the first 10 seconds of the first track of each disc. Preset 3 also provides track and disc repeat. Preset 4 also provides random track selection or random track and disc selection. Presets 5 and 6, designed as a double rocker with + and - ends, double as disc-select controls for the MD and CD changers.

An ATP (Auto Travel Preset) button surveys either the AM or FM band and places the six strongest stations in special ATP presets (six each in AM and FM), arranged from strongest to weakest in signal strength. Hit ATP again and it will scan the ATP presets. In CD mode, the ATP button can be used to switch between two different Sanyo changers; a special divider unit is needed in the changers' control lines. An L/DX button switches the tuner between low and high sensitivity to optimize reception for local and distant stations. The mute button kills the audio output temporarily, but if it's left engaged for more than 5 minutes during MD or CD playback, the MDR-300 powers itself down.

The dot-matrix LCD screen provides a full set of alphanumerics for the usual track, timing, and clock information as well as MD track and disc titles. In addition, you'll find icons and labels for tuner band, volume level, bass and treble levels, stereo or mono reception, distant sensitivity, repeat or random playback, and so on. The display also flashes diagnostic messages—for example, when a blank MD has been loaded or when the ambient temperature is too high for proper operation.

The rear of the MDR-300 has an antenna lead, four line-level phono jacks,

### DIMENSIONS

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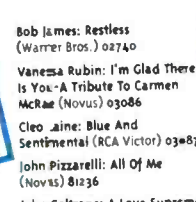
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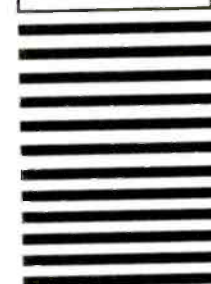
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# CAR STEREO

an eight-pin DIN pigtail for connecting a CD changer, and a wiring-harness socket. The harness has eight speaker-lead pigtailed as well as wires for remote turn-on, power, ignition, and ground. The three power leads run through a beefy line filter, suggesting that the head is either sensitive to RF noise or is dirty with it. Both the power and ignition leads have an in-line 10-ampere fuse—about the biggest you'll see in a head unit. The unit's power hunger and heat sensitivity are verified by an exhaust fan on the rear panel.

The inside of the MDR-300 is stuffed with disc-changer and transport mechanics as well as tuner and MD-playback circuitry, including a RAM (random-access memory) chip that stores up to 12 seconds of read-ahead music to buffer disc skipping, an ATRAC decoder, and 1-bit digital-to-analog (D/A) converters. The unit comes with a credit-card-size wireless remote control whose eighteen buttons duplicate the front-panel controls.

## Lab Tests

The MDR-300 was good but not great on the test bench. MiniDisc playback was somewhat inferior to good CD playback and not as good as that of some other MD players I've tested. Still, the numbers were respectable overall. For example, frequency response dropped only 0.92 dB at 20 kHz and total harmonic distortion plus noise (THD+N) was low at 1 kHz. But the THD+N was a high 0.45 percent at 20 kHz, and linearity erred by +3.6 dB at -90 dB.

Tuner performance was pretty good, with sensitivity and adjacent-channel selectivity particular standouts. The internal power amplifiers pumped out almost 10 watts into 4 ohms, with low distortion and noise.

## Installation

Installation of the MDR-300 was no big deal. I cleared out a DIN space in my dash and affixed the mounting sleeve by bending tabs. I popped out three transport screws from the MDR-300's chassis, slid it into the sleeve, where it locked, and screwed in a rear strap. I wired up the front speaker outputs to my front speakers and the rear

## MEASUREMENTS

### MD SECTION

<b>Maximum output level</b> .....	1.77 volts
<b>Frequency response</b> .....	20 Hz to 20 kHz +0, -0.92 dB
<b>Channel separation</b>	
1 kHz .....	70.0 dB
20 kHz .....	46.2 dB
<b>Dynamic range (A-wtd.)</b> .....	84.6 dB
<b>Signal-to-noise ratio (A-wtd.)</b> .....	83.1 dB
<b>Distortion (THD+N, 1 kHz)</b>	
at 0 dB .....	0.08%
at -20 dB .....	0.45%
<b>Linearity error (-90 dB)</b> .....	+3.6 dB
<b>Interchannel phase shift (at 20 kHz)</b> ..	0.2°
<b>Disc-change time</b> .....	12 seconds

### TUNER SECTION

All measurements are for FM only except frequency response.

<b>Max. output (100% modulation)</b> ..	0.73 volt
<b>Sensitivity (50-dB quieting, mono)</b> ..	21.2 dBf
<b>Distortion (THD+N at 65 dBf)</b>	
mono .....	0.60%
stereo .....	0.88%
<b>Signal-to-noise ratio (at 65 dBf)</b>	
mono .....	64.8 dB
stereo .....	51.9 dB

### Channel separation

(at 65 dBf, 1 kHz) .....	30.3 dB
<b>AM rejection (at 65 dBf)</b> .....	59.5 dB
<b>Capture ratio (at 65 dBf)</b> .....	3.0 dB
<b>Selectivity</b>	
adjacent-channel .....	20.0 dB
alternate-channel .....	61.3 dB
<b>Image rejection</b> .....	50.2 dB
<b>Frequency response</b>	
FM .....	30 Hz to 15 kHz +0, -3.2 dB
AM .....	30 Hz to 3 kHz +0, -5.9 dB

### AMPLIFIER SECTION

All measurements were made with 14.4-volt DC power supply; all channels driven into 4 ohms unless otherwise noted.

<b>Noise (A-wtd, re 1-watt output)</b> .....	76.9 dB
<b>Distortion (THD+N, 1 kHz, 1 watt)</b> ..	0.085%
<b>Damping factor</b> .....	35
<b>Frequency response</b>	
20 Hz to 20 kHz +0.26, -0.33 dB	
<b>Output at clipping (1 kHz)</b>	
8 ohms .....	6.8 watts
4 ohms .....	9.9 watts
<b>Tone-control range</b>	
bass .....	+9.9, -10.0 dB at 100 Hz
treble .....	+9.3 dB at 10 kHz

line-level outputs to an external rear amplifier. I also took care of the remote turn-on, antenna, power, ignition, and ground connections. I did not have a compatible Sanyo CD changer (such as an AX-600 or AX-800), so I passed on that option. I clicked in the front panel, popped in a test MD, set sensitivity in the rear amplifier, and hit the road.

## Road Tests

Putting my burning MD curiosity on hold, I first turned my attention to the radio. I tuned to both local and distant stations, changing sensitivity and stereo/mono mode as needed. The tuner did a good job of pulling in weak signals. Sound quality of strong stations was quite good, with subjectively flat frequency response and moderate distortion. In heavy urban terrain, multipath interference did intrude, with a fair amount of stoplight fade. Overall, I would rate this a B+ tuner that should give good performance under typical conditions.

Next, I opened the front panel and loaded in three MD's—a quick and easy procedure. I also quickly learned the changer's ground rules: If an MD is in a slot (not being played), it is ejected immediately after you press its eject button. If a disc is playing when you hit its eject button, it stops playing and moves back into its slot; you hit the eject button again to actually eject it. In addition, the disc in the next numerical slot is automatically moved into playing position. After putting the front panel back, I observed that disc-changing time was about 12 seconds and that mechanical noise during the process was unobtrusive.

Playing around a little, I turned the unit off and removed the front panel, as if I were parking the car. I flipped up the subplate. For reasons that defy imagination, this subplate has a cutout around the MD loading slots. In other words, when the panel is removed, the slots are open to the outside air, which surely invites dust to enter and clog the mechanics and optics. Even if

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# CAR STEREO

front clearance was a tough issue, some kind of covering should have been designed into this head unit.

The MD format's alphanumeric titles are a strong feature. In this case, the disc or track title appears complete in the display if it has less than thirty-two characters. If it has more, it automatically scrolls. In any event, you can scroll titles by hitting the Scroll button. (Titles are always encoded in prerecorded MD's, but you have to enter them yourself when you record on a blank MD.) In my humble opinion, the MDR-300's scrolling should be faster. At about two characters per second, unless you're a really slow reader you'll lose interest (or drive into a tree) before you complete more than twenty characters.

One of MD's key benefits is its read-ahead memory, which stores a good amount of music data (12 seconds in this case) and can quickly replenish it if tracking is interrupted. I took the MDR-300 through some of the bumpiest roads I know and never heard a skip. Unless you're into some serious off-road recreation, skipping should not be a problem.

Using a number of prerecorded and personally recorded MD's, I checked out the changer's sound quality. First of all, only about half the people I've tested can hear the difference between MD and CD playback under optimal conditions. In a moving car, I doubt whether anyone could reliably do it. In that context, I was pleased with the MDR-300, but not overwhelmed. In particular, in a parked car MD's didn't sound as good as CD's do, or even MD's on some other players I've tested. Don't misunderstand—it blew away cassette tape, but it lacked the high-frequency sparkle and presence of better formats. Overall, while it sounded pretty damn good, I wished it sounded better.

The onboard amplifiers were pretty good—more power and better sound than usual. Despite the exhaust fan, the unit ran very hot to the touch.

The MDR-300 is one of the most expensive head units I've ever seen, and one of the neatest. I do not like and have never liked disc cartridges; it is simply a pain to load and unload them, especially in a car or outdoors.

The MDR-300 clearly shows there is a better way. Its three MD loading slots are a real joy to use. Once you appreciate the ability to chuck 222 minutes of music into the dashboard without

any hassles, you'll wonder how you ever lived without it. The wads of fun you'll have using this unit should make up for any loss in fidelity you might notice while driving. □



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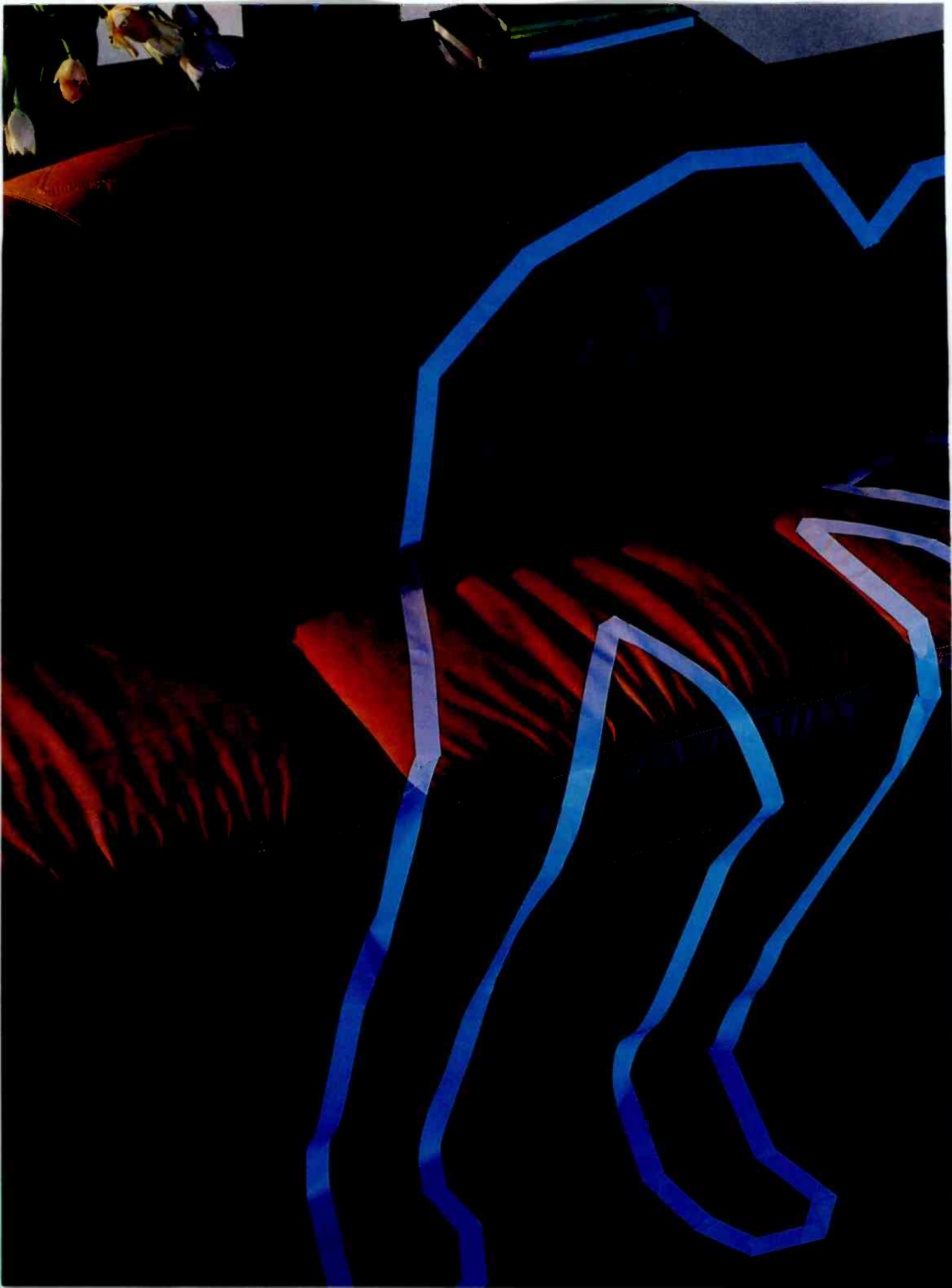
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# TECH TALK

BY JULIAN HIRSCH

## Which Watt?

**H**ow powerful is that amplifier (or receiver) you are considering? You might be surprised at the variety of numbers that can be applied (legitimately!) to the same product. Let's take a look at this potentially confusing situation.

The *watt* is a unit of power, which is the rate of doing work (in this case, moving the diaphragms of your speakers back and forth). An electrical watt is the product of voltage and current (volts and amperes), multiplied in an AC circuit by the cosine of the phase angle between them. When rating audio components, it is usually assumed that the load is a pure resistance (although it rarely is), so that the phase angle can be ignored. In practice, the phase angle of a speaker's impedance can vary widely with frequency.

In the early days of stereo, it was a common practice to measure an amplifier with only one of its channels being driven, multiplying its maximum power output by the number of channels to establish an advertised rating. When both channels operate from the same power supply, however, its voltage normally drops because of the extra load of the second channel, reducing the total power slightly (sometimes considerably). The Federal Trade Commission put a stop to that practice in 1974 by requiring that *all* channels be driven simultaneously when making this measurement and that the maximum distortion, load impedance, and frequency range over which a power rating applies be included in the specification. Although this ruling has not been actively enforced in recent years, it has become part of the industry-standard test procedure. In contrast with the grossly distorted claims that were once commonplace, today's power ratings are consistently honest and usually conservative.

The growing popularity of audio/video systems has led to the development of more complex multichannel amplifiers. A typical A/V receiver, for example, has five channels, for the main front speakers, a center-channel speaker, and surround speakers. How do you measure a big multichannel amplifier? In a word, carefully! The logistics of dealing with a large number of bulky load resistors, which can become *very* hot, is not a trivial matter. For-

tunately, it is rare for *all* the channels of such an amplifier to be driven to full output simultaneously in normal use.

In any event, I will use a typical A/V receiver as an illustration of the measurement problem. Its amplifier section is rated, according to FTC rules, at 125 watts per channel in its two-channel stereo mode into 8-ohm loads, from 20 Hz to 20 kHz, at 0.05 percent total harmonic distortion. In Dolby Pro Logic operation each of the channels (left, right, center, and the combined surround outputs) is rated at 100 watts into 8 ohms at 1 kHz with 0.8 percent distortion. The slightly reduced front-channel power, compared with the stereo rating, reflects the need to share the power-supply output with additional amplifier channels. In fact, if the same distortion and bandwidth were used for the power ratings in Pro Logic mode as in the stereo mode, they would probably come out lower still. Raising the distortion ceiling for the specification and narrowing the frequency range will invariably yield a bigger power rating.

So far, we have been considering only continuous power ratings (in this context, "continuous" means for a duration of at least 5 minutes). The rated power of an

"dynamic power" and is a characteristic of almost every amplifier to some degree.

The dynamic-power test is made at 1 kHz with a special signal that drives the amplifier to its maximum unclipped level in 20-millisecond bursts, once per second. The output is measured on an oscilloscope and converted to an equivalent steady-state wattage, usually for load impedances of 4 or 8 ohms (we also test at 2 ohms in most cases). Dynamic headroom, expressed in decibels, is the amount by which the dynamic power exceeds the *rated* continuous power. Thus, an amplifier rated at 50 watts of continuous power that delivered 100 watts of dynamic power would have a dynamic headroom of 3 dB. (Because continuous-power ratings are often conservative—sometimes extremely so—dynamic-headroom figures are usually greater than they would be if they were expressed relative to the actual *measured* continuous power.)

Since most program material, either music or speech, resembles the dynamic test waveform more than it does a continuous sine wave, dynamic power can be as important as an amplifier's continuous output capability. A bonus for the user of an amplifier with a high dynamic-power capability is that it can play, under most conditions, slightly louder or with less distortion than another amplifier with the same continuous, or clipping, power output but lacking its dynamic capability. On the other hand, if your preference is for organ music with long, sustained pedal passages, and your speakers (and budget) are equal to the challenge, you may prefer an amplifier with little or no dynamic headroom but high continuous power capability into any speaker load you might present to it.

Most amplifiers (especially in receivers) take advantage of the inherent ability of a loosely regulated power supply to handle brief peaks of much higher power than their continuous ratings would allow. Some even use special power-supply designs that facilitate the process by responding to the signal amplitude to provide a higher instantaneous voltage to the output transistors for brief intervals. At the opposite pole are amplifiers of classic design (usually larger, heavier, and more costly) that are built to provide full power on demand, within their design limits, for signals of any duration or level. Your best choice will depend on your needs, tastes, and finances. □

**D**ynamic power can be as important as an amplifier's continuous output capability.

amplifier is the maximum that it can deliver for that time into a specified load impedance, at the rated distortion, within a range of frequencies defined by the manufacturer (usually 20 Hz to 20 kHz).

Music and speech are not continuous in nature, however. Both contain peak levels far exceeding their average value. It is unnecessarily expensive to design an amplifier to deliver, say, 200 watts continuously when it may be called upon to deliver only a fraction of that power 99 percent of the time. Therefore, most amplifiers are designed to deliver considerably more than their steady-state power for brief intervals (musical peaks). This is called





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# TEST REPORTS



## Rotel RSP-960AX Surround Processor

DAVID RANADA • TECHNICAL EDITOR

Although Rotel modestly bills its RSP-960AX as a mere surround-sound processor—one providing Dolby Pro Logic decoding as well as music-oriented ambience-enhancement modes—it can nonetheless perform many of the functions of a complete A/V preamplifier. It includes, for example, audio and video connections and switching for multiple inputs. If you can live without a phono input, the RSP-960AX can serve as the one and only preamp in an A/V system.

The RSP-960AX has five inputs selected by buttons on the upper right of the front panel. Two are audio only: Line is where you would plug in a CD player if you were using the RSP-960AX as a preamplifier, and Tape is where you would connect an audio-only recorder, which is fed whatever is connected to the Line input. The remaining three inputs have both stereo audio and video connectors, the latter

in both composite-video and S-video flavors. The LD input is intended for a laserdisc player, whereas Video 1 and Video 2 are designed primarily for VCR's. You could, however, use any of these video inputs to connect another source, such as the audio outputs from a TV set or both audio and video from a satellite receiver. Both VCR connections are provided with inputs

### DIMENSIONS

17 $\frac{1}{2}$  INCHES WIDE, 4 $\frac{1}{2}$  INCHES HIGH,  
13 INCHES DEEP

### WEIGHT

13 $\frac{1}{4}$  POUNDS

### PRICE

\$600

### MANUFACTURER

ROTEL OF AMERICA, P.O. Box 8, NORTH READING,  
MA 01864-0008

and outputs, the outputs being fed by whatever is hooked to the LD input (there are no provisions for dubbing between VCR's). A TV set gets connected to the composite or S-video monitor output on the rear panel. As usual, there is no conversion between S-video and composite signals, so if you have only one of the monitor outputs connected to your TV, all the video inputs to the RSP-960AX must be of the same type.

There are six audio outputs, each at line level and each intended to feed a power amplifier: front left, center, and right, surround left and right (labeled "Rear"), and subwoofer. The subwoofer output has its own rear-panel level control, and its output can be switched so that it is either wideband ("Flat") or rolled off at 12 dB per octave above either 80 or 120 Hz (settings to be used if your subwoofer amplifier has no crossover of its own). The rear panel notably lacks any AC convenience outlets, a standard feature of most true A/V preamps.

The front panel likewise lacks a headphone output, but it does have controls for other, more A/V-oriented features. In addition to the central

# TEST REPORTS

master volume-control knob, there are pushbuttons for raising and lowering the volumes of the center and surround speakers and for turning on the level-check test signal. There are also buttons for changing the center-speaker mode from Normal to Wide or Phantom and for switching the Dolby Pro Logic surround-channel delay to either 20 or 30 milliseconds. A Bass EQ button boosts low frequencies to produce a +8-dB shelf at 100 Hz and below, but its effect extends past 1 kHz, where the response is still up about 1 dB. The boosted response sounds like that of a typical bass tone control turned all the way up.

At the lower right of the front panel are the sound-processing selector buttons. The available selections include plain two-channel stereo, Dolby Pro Logic, and three four-speaker (center-off) ambience modes. The Concert Hall mode produces multiple decaying "reflections" in the surrounds over a period of approximately 200 milliseconds. Jazz rolls off the bass in the

front speakers (at 6 dB per octave below 200 Hz) and generates only two surround reflections. Stadium, the third ambience mode, rolls off the bass and boosts the treble in the front channels and feeds the front left and right signals without alteration to the surrounds; it introduces some crossfeed between the front channels as well. The manual says that the Stadium mode is designed for live recordings or broadcasts, particularly sporting events. None of the ambience modes permit any adjustments.

In our laboratory measurements the RSP-960AX showed very good to excellent performance in two-channel stereo and Pro Logic. Of particular note were the low noise levels. In two-channel mode, spectrum analysis showed a very low level of high-frequency noise combined with well-controlled power-supply leakage (worst case was 60-Hz hum at an inaudibly low -103 dB below a 0.5-volt output). Surround-channel noise-reduction calibration in the Pro Logic mode was



**Every control on the Rotel processor's remote has a corresponding front-panel LED.**

## MEASUREMENTS

### PREAMPLIFIER SECTION

All measurements were taken through the LD (laserdisc) input.

**Output at clipping** (1 kHz) ..... 7 volts

**Input overload level** ..... 3.3 volts

**Sensitivity** (for a 0.5-volt output) .... 236 mV

**Distortion** (THD+N, 1 kHz) ..... 0.0038%

**Noise** (A-wtd., re 0.5-volt output) ..... -96.6 dB

**Frequency response**  
..... 20 Hz to 20 kHz +0, -0.29 dB

### DOLBY PRO LOGIC DECODER

Unless otherwise noted, all measurements were made at unity gain (main volume setting at approximately 2 o'clock) with LD-input reference levels of 200 millivolts (mV) for the left and right front channels and 141.4 mV for the center and surround channels. All measurements were made with the Normal center-channel setting except frequency response and channel separation, which were made in the Wide setting using MLS techniques.

#### Frequency response

left, right ..... 20 Hz to 20 kHz +0.03, -0.26 dB

center ..... 20 Hz to 20 kHz +0.07, -0.77 dB

surround ..... 31 Hz to 6.4 kHz +0.07, -3 dB

#### Noise (A-wtd.)

left, right ..... -80.4 dB

center ..... -75.5 dB

surround ..... -76.8 dB

#### Distortion (THD+N, 1 kHz)

left, right ..... 0.02%

center ..... 0.027%

surround ..... 0.21%

#### Surround decoder input-overload margins (at 1 kHz)

left, right (re 2-volt input) ..... +3.5 dB

center (re 1.414-volt input) ..... +5.9 dB

surround (re 1.414-volt input) ..... +1.7 dB

#### Surround-channel noise-reduction calibration error (see text)

Dolby spec (re 247.5 mV) ..... 0 dB

Home THX spec (re 141.4 mV) ..... +4.86 dB

#### Channel separation (100 Hz to 7 kHz)

left output, right driven ..... >31 dB

left output, center driven ..... >50 dB

left output, surround driven ..... >42 dB

center output, left driven ..... >44 dB

center output, surround driven ..... >44 dB

surround output, left driven ..... >49 dB

surround output, center driven ..... >69 dB

right on the nose according to Dolby specs (which means it is 4.86 dB high according to THX standards). Surround-channel frequency response in Pro Logic operation was also very good, indicating good noise-reduction tracking as well as an absence of the all too common overall downward tilt to the surround-channel response. The video switching circuitry introduced no noticeable picture degradation with critical test patterns.

But the measurements did confirm one characteristic of the RSP-960AX that had proved problematical in setting it up for listening tests. The surround- and center-speaker level controls have an unusually wide range, more than 70 dB. While the wide range is okay in itself, that the controls change the level in increments of approximately 2 dB is not. Such adjustments are too coarse to guarantee really good matching of speaker levels (depending on the sensitivities of the loudspeakers employed). So it would be a good idea to use the RSP-960AX with amplifiers that have their own input level controls to enable finer balance adjustments.

There are other, minor ergonomic



# Cambridge SoundWorks Takes Center Stage.

Model Ten-A



Center Channel Plus

Center Channel

Our experience with Dolby Surround Pro Logic sound systems is that the center channel is *very* important. A significant portion of movie soundtracks is directed to the center channel in a Pro Logic system. It's crucial that the center channel speaker is capable of reproducing the material accurately, with proper volume level and dispersion.

Cambridge SoundWorks manufactures three center channel speakers. All three produce natural, accurate, well-dispersed sound. All three are magnetically shielded so you can place them close to your TV monitor. All three are covered by our 7-year parts & labor warranty and our 30-day money-back guarantee. And because we sell

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*Model Ten-A* is a very small (4 1/2" x 6 1/2" x 3"), two-way acoustic suspension speaker that's ideal for an affordable Pro Logic system. Its small size makes it easy to place near your TV. And its balanced, natural sound will satisfy even critical listeners. It is acoustically identical to the satellite speakers in our *Ensemble III* system. Factory-direct price, **\$80**.

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*Center Channel* is a compact, two-way, acoustic suspension speaker that is acoustically identical to the satellite speakers in our *New Ensemble®* and *New Ensemble II* speaker systems.\* Its wide-range, well-dispersed, balanced sound and high power handling capability make it one of the country's best values in a center channel speaker. Factory-direct price, **\$149**.

## Center Channel Plus.

*Center Channel Plus* is an outstanding center channel speaker in that it provides outstanding acoustic performance, while blending in to the "TV environment" in a unique way. *Center Channel Plus* uses four 3" long-throw woofers and a tweeter that perfectly matches the acoustics of our *New Ensemble* and *New Ensemble II* systems. The frequency range of the outer pair of 3" woofers is intentionally tailored to maintain proper dispersion characteristics.

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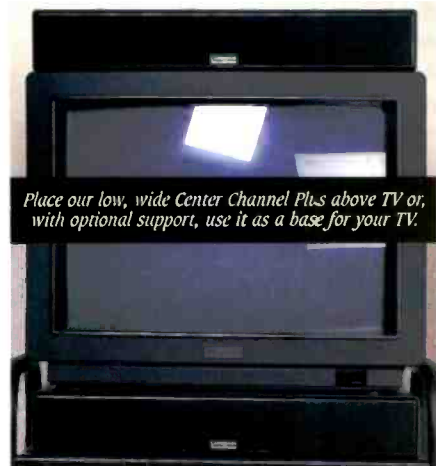


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BY HENRY KLOSS



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# TEST REPORTS

difficulties. The processor should be plugged directly into a wall socket or an *unswitched* convenience outlet on another component. If power to the RSP-960AX is totally disconnected, it will forget your volume settings for the center and surround speakers. (The problem is exacerbated by the lack of any front-panel or on-screen indication of those settings. The five indicator lights on the panel above the center and surround level controls show only which outputs are activated when the different surround modes are turned on.) Fortunately, if it loses your settings, the RSP-960AX turns the center and surround outputs all the way down rather than leaving them in some random state. On the other hand, the bass-boost feature has an irritating tendency to turn itself on after power loss. None of these problems will occur, however, if the processor remains connected to a live outlet at all times.

Aside from such difficulties, none of which are insurmountable and some of which you may never encounter, I had no problems operating the processor. All speaker-level adjustments, coarse though they may be, can be made from the remote, which duplicates all the front-panel controls and adds a mute function. I liked the pro-

fusion of indicator lights on the front panel: Every control on the remote has a corresponding front-panel LED. Once you memorize the lights' positions, you can tell the processor's operating status at a glance from a good distance in total darkness without having to strain to read an alphanumeric display.

The RSP-960AX performed very well in both stereo and Pro Logic modes. Pro Logic steering was accurate, and background noise was very low. I didn't much care for the Concert Hall ambience mode, although it was far better than many similar modes in other products, which often suffer from exaggerated artificial reverb. I found the response alterations and spatial effects in the Jazz and Stadium modes to be effective only with some program material. And, as usual, I advise you to disregard the names of these modes when deciding which one (if any) to use; try them all.

On the whole, the RSP-960AX was easy to use and, in the Rotel tradition, a good no-frills performer at an attractive price. If your primary interest is high-quality Dolby Pro Logic decoding, with a little A/V switching thrown in for good measure, it could be a fine choice. □



"Say, isn't that Baxley, the wealthy loudspeaker manufacturer?"





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# “Room Shaking!”

Stereo Review

A semi truck landing after a 20 foot fall in *Terminator 2*. The heavy pounding of feet of a T-Rex in *Jurassic Park*. These are examples of the ultra-low, ultra-strong bass signals on today's movie soundtracks. Such frequencies are rare in music, and are beyond the capabilities of most speakers designed for music.

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*...deep powerful bass...31.5 Hz bass output was obtainable at a room-shaking level...they open the way to having a 'killer' system for an affordable price."*

Stereo Review

## Our Powered Subwoofer II.

Our *Powered Subwoofer II* uses a heavy duty 8" acoustic suspension woofer in a vinyl-clad cabinet that also holds a 120-watt amplifier. The *Powered Subwoofer II's* 8" woofer has a very long (3/4") "throw" for powerful, linear bass response. Its amplifier employs electronic equalization to extend uniform output to well below 30 Hz. Bass performance is, in fact, identical to that of our *Powered Subwoofer*, although total acoustic output is not as suitable for exceptionally large rooms. There is also no provision for connecting a "slave" subwoofer.

The woofer uses a unique heat sink, instead of a dust cap (see illustration). An input gain control and a variable low-pass filter let you match *Powered Subwoofer II* to

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# TEST REPORTS



## Canon S-35 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Canon's new S-35 is truly a unique loudspeaker. At first glance it resembles a stylized bust of Darth Vader. The rounded, matte black, die-cast zinc upper portion is approximately the size of a human head, and its glossy black plastic base resembles an upward-facing 90-degree cone. Inside the "helmet," facing downward, is a small cone driver (Canon refers to it as a 5¼-inch cone, but its effective diameter is only about 4¼ inches). Concentrically mounted with the cone is a ¾-inch soft-dome tweeter. The enclosed volume of the helmet is vented by two small openings on its rear, which also contains the recessed multiway binding-post terminals.

Canon's term for the unique character of the S-35 (which, like all Canon speakers, is manufactured in Great Britain) is Wide Imaging Stereo (WIS), since the acoustic output is radiated into a considerably wider horizontal angle than with a conventional forward-firing design. Canon says the S-35's horizontal dispersion is within

±3 dB from 1 to 15 kHz over a 100-degree forward angle.

The system's rated frequency response is 70 Hz to 22 kHz ±3 dB, with an axial (anechoic) sensitivity of 88 dB sound-pressure level (SPL) at 1 meter with a 2.83-volt input. The speaker is rated to handle up to 75 watts (a 50-watt amplifier is recommended), and it has a nominal impedance of 6 ohms. An internal overload-protection system senses signals of excessive level and duration and reduces

### DIMENSIONS

10½ INCHES HIGH, 9 INCHES WIDE,  
9½ INCHES DEEP

### WEIGHT

10 POUNDS

### PRICE

\$399 A PAIR

### MANUFACTURER

CANON U.S.A., DEPT. SR, ONE CANON PLAZA,  
LAKE SUCCESS, NY 11042

the input to the drivers until a safe level is restored.

The S-35 speakers can be mounted on wall brackets or stands and should be angled inward toward the listening area by 35 to 45 degrees for optimal imaging. According to Canon, their integral magnetic shielding allows them to be installed close to a TV monitor or receiver without affecting the picture.

We placed the Canon S-35's on 30-inch pedestals about 9 feet apart and 2 feet from the wall behind them. Initially they were facing forward, but we angled them as recommended for listening tests. The averaged room-response curve showed maximum output points at 260 Hz and 20 kHz and a uniform response (±2.5 dB) from 400 Hz to 4 kHz. The crossover to the tweeter appeared to be at about 5 kHz (quasi-anechoic MLS measurements confirmed that by revealing a narrow notch of about 12 dB at 4.9 kHz).

The close-miked woofer response indicated a ±3-dB variation from 85 Hz to 2.5 kHz (with some unevenness above 1 kHz, where this measurement began to become invalid). Bass output fell off at 12 dB per octave below 100 Hz but remained useful at least to the rated 70-Hz limit.

The composite response curve, combining the close-miked bass response and the smoothed room response (which overlapped for several octaves), showed the usual variations due to unavoidable boundary effects. The curve's most obvious features were a broadly emphasized region between 100 and 600 Hz, a moderate variation in response between 1 and 10 kHz, and a rise of about 8 dB in the top octave, between 10 and 20 kHz. The MLS measurements revealed (in addition to the 5-kHz notch mentioned above) a tweeter resonance peak of perhaps 8 dB at 19 kHz, accounting for the rising high end in the room-response measurement.

The S-35's horizontal dispersion was, as might be expected from its design, very good. Over the 45-degree angle that we usually use for this test, the 15-kHz output varied only about 4 dB, essentially confirming the manufacturer's rating. But since the speaker's output has no clear access to the



# In-Wall Speakers By Henry Kloss.

## Inside.

We Don't Know Of Any Other In-Wall Speakers That Match Their Performance, Durability, Value And Ease Of Installation.

Cambridge SoundWorks manufactures two different in-wall speaker systems designed by Henry Kloss (founder of AR, KLH & Advent). The in-wall version of our *Ambiance*<sup>™</sup> speaker is designed for use indoors. The in-wall version of our all-weather speaker, *The Outdoor*, is suitable for use on the patio, by the pool...even on boats.

Both systems deliver the wide-range, accurate, natural sound people expect from Cambridge SoundWorks. Both systems are covered by our 7-year parts & labor warranty and our 30-day money-back guarantee. And because we sell only factory-direct, with no expensive middlemen, both systems represent outstanding values.

### Ambiance In-Wall Speakers.

We don't know of *any* ultra-compact speaker - at *any* price - better than our *Ambiance* speakers. (Also available in free-standing cabinets.) Henry Kloss chose a very wide dispersion tweeter for *Ambiance* In-Wall. It delivers accurate midrange/high-frequency response over a very wide pattern, so you can place the system very high - or very low - on a wall and still hear realistic stereo imaging anywhere in the room. This flexibility can be very important for in-wall installations.

We don't know of any loudspeaker its size with better bass response than *Ambiance* In-Wall. *Stereo Review* magazine said "They easily held their own against substantially larger, more expensive speakers...a lot of good sound at a hard-to-beat price." Factory-direct price, \$329 pr.



stainless steel hardware and gold-plated five-way binding posts. (Also available in free-standing cabinets.) Factory-direct price, \$329 pr.

### Easy To Paint. Easy To Install.

Both our in-wall systems can be used as-is with their supplied off-white finish. Or you can paint them any color. Both systems are also an installer's dream. Because they include sealed enclosures, you don't have to create an enclosure within your walls. And a plastic "dog leg" locking system makes final installation as simple as turning a screwdriver.

*"A Lot Of Good Sound  
At A Hard-To-Beat-Price."*  
Stereo Review

### Satisfaction Guaranteed.

With our 30-day money-back guarantee you can audition these speakers the *right* way - in your home, listening to your music, with no salesman hovering nearby. If within 30 days you aren't entirely happy, return for a full refund. We even reimburse original UPS ground shipping charges in the continental U.S.

## And Out.

### The Outdoor In-Wall Speakers.

*The Outdoor* In-Wall speaker is very similar to *Ambiance* in overall sound, and has the same wide dispersion pattern. It is slightly more efficient, so that it can produce high volume levels with a reasonably powered receiver - which is very appropriate for an outdoor speaker. It has an electro-plated steel grille and a slim-line enclosure with a braced polymer shell. Unlike other in-wall systems, its mounting frame is integrated with a fully sealed enclosure that provides not only weather resistance, but also proper acoustic loading for the speaker drivers. It includes



8 1/4" wide x 11 3/4" high x 3 3/4" deep (below mounting surface) x 3/8" (above mounting surface, including grille).

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# TEST REPORTS

rear, a 90-degree off-axis measurement showed a drop of 10 to 15 dB in the range from 10 to 20 kHz.

The impedance characteristic was distinctive, with three large, narrow peaks, to 27 ohms at 30 Hz and 100 Hz and to 23 ohms at 1 kHz. The minimum reading of 5 ohms at 250 Hz and 20 kHz, however, justifies the speaker's nominal 6-ohm rating.

Our measurements confirmed the rated sensitivity (88 dB SPL at 1 meter with a 2.83-volt input). Woofer distortion measured between 0.6 and 1.5 percent from 100 Hz to 2 kHz, rising at lower frequencies to 5 percent at its rated 70-Hz limit and to 10 percent at 30 Hz (where its output was too low to be useful).

In listening tests, the Canon S-35 sounded pretty much the way its response measurements would suggest. It had a pleasant warmth, almost certainly due to its slight emphasis in the lower midrange. The highs, though clearly present, were not prominent (the tweeter resonance peak being at the upper limits of human hearing). There was none of the sizzle that sometimes signals a peaked top end. The overall sound character was distinctively different from that of more conventional speakers, imparting a sense of air and space that seemed to fill the entire region between the speakers but had little correlation with the apparent source of the music. In

spite of that effect, spatial imaging with the Chesky JD37 test disc was as good as we have ever heard.

Our pulse power tests proved the effectiveness of the speaker's protective system. At 100 Hz, the circuit effectively "soft-clipped" the drive signal at a point where the sound took on a hard quality (in the vicinity of 200 watts). With further increases in level the signal was merely clipped a bit harder (we did not attempt to test the limits of the protection, since the sound became rather ominous at about 250 watts). At higher frequencies, the speaker's impedance rose to the point where our amplifier's output was voltage-limited to the equivalent of about 300 watts at 1 kHz. At 10 kHz the tweeter output was severely clipped at 800 watts, but without any permanent damage.

To check Canon's claim of magnetic shielding, we measured the field at the outer surface of the S-35. It never exceeded 2 gauss and was typically much less. The speaker is obviously safe to use in an A/V system.

Once you accept the odd appearance of the Canon S-35, it is a very easy speaker to live with and listen to. Its subjective bass is all one would expect from a conventional speaker of its size (or two or three times its size), and it is designed for flexible installation. In fact, with a little imagination in its placement, it might never be taken for a loudspeaker! □



"Now then, was that Mr. Coleman live, or was that Mr. Coleman on tape?"





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Don't trash your old CD player. It's not biodegradable. Besides, it's worth \$100, maybe more.

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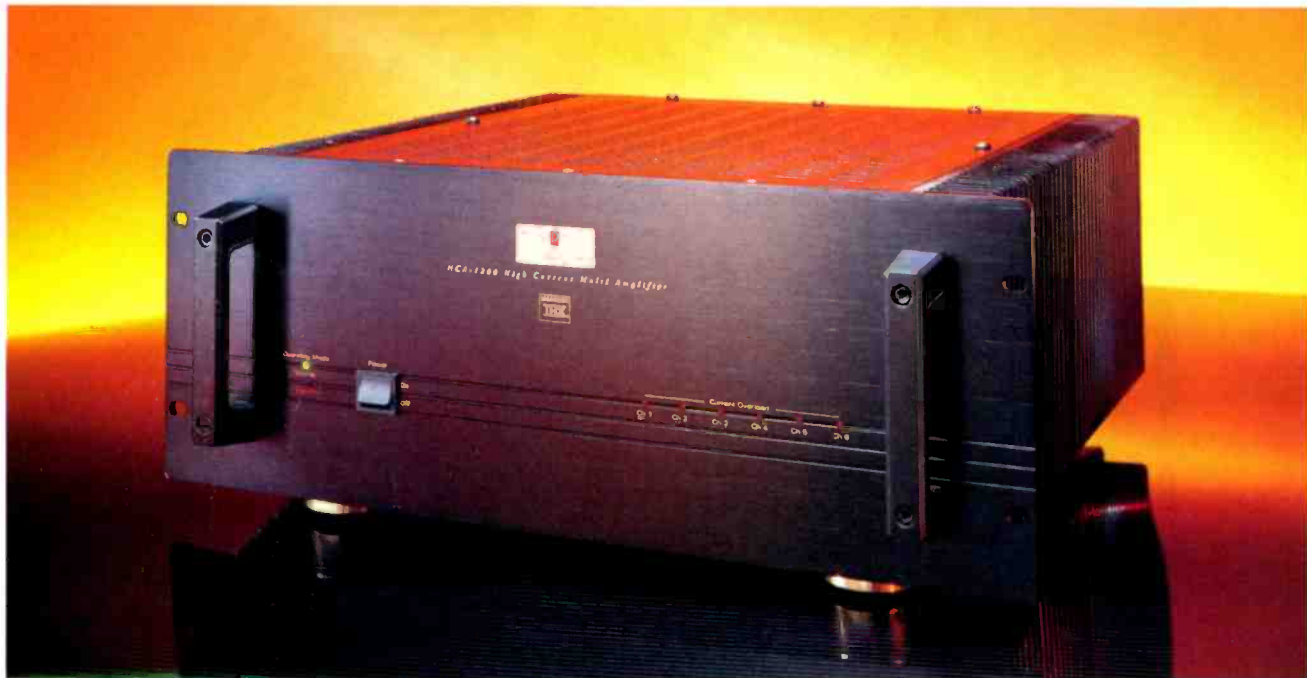
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# TEST REPORTS



## Parasound HCA-1206 Six-Channel Power Amplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The Parasound HCA-1206, designed by the well-known circuit designer John Curl, is an exceptionally powerful and versatile high-performance power amplifier certified by Lucasfilm for use in Home THX surround-sound systems. It is also suitable for multiroom audio systems or any other application requiring as many as six independent high-power amplifiers.

With all channels driven, each channel of the HCA-1206 is conservatively rated to deliver 120 watts into 8 ohms, or 180 watts into 4 ohms, from 20 Hz to 20 kHz with less than 0.07 percent total harmonic distortion (THD). Although all its channels are identical, Channels 1 and 2 are designed specifically for the front channels of a multi-channel sound system and cannot be bridged. Channels 3 and 4 and Channels 5 and 6 can be switched to

bridged mono operation, in which each bridged pair is rated at more than 300 watts into 8 ohms.

Each output channel is rated for operation with loads as low as 4 ohms, although a pair of bridged channels should not be used with loads of less than 8 ohms. That limitation is not due to any lack of current-delivering ability

for short intervals, but prolonged high-current operation could create excessive temperatures in the amplifier, which does not have an internal fan.

The HCA-1206 is a large, very heavy amplifier, weighing more than 70 pounds. It is equipped with handles on the front and rear panels. The output circuitry is located along the inner sides of the cabinet, and exterior heat-sink fins cover the full depth of each side. The heavy steel top cover is also extensively perforated for ventilation. The output stages use a total of twenty-four 60-MHz, 15-ampere output transistors in matched complementary pairs.

A huge power transformer (which surely supplies a good share of the amplifier's weight) is located in the center of the HCA-1206 just behind the front panel. It is rated at 1.7 kVA (kilovolt-amperes), consistent with the amplifier's potential for delivering more than a kilowatt of clean audio power. Parasound says that the power supply contains more than 120,000 microfarads of computer-grade capacitors. Although the power supply and related components, plus the actual output transistors (four per channel), occupy most of the HCA-1206's inte-

### DIMENSIONS

19 INCHES WIDE, 7 $\frac{3}{4}$  INCHES HIGH,  
18 $\frac{1}{2}$  INCHES DEEP

### WEIGHT

71 POUNDS

### PRICE

\$1,850

### MANUFACTURER

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— *Sound & Vision Magazine*

*Experience the miracle of bipolar technology  
when you hear the absolute sonic superiority  
of Definitive's revolutionary BP8, 10 & 20*

## "Truly Outstanding"

— *Stereo Review*

*Sound & Vision's* Critic's Choice Award is one of the industry's top honors. It's no wonder experts agree that Definitive's revolutionary bipolar BP8, BP10 and BP20 are three of the world's finest speakers and are sonically superior to any conventional speaker, regardless of cost.

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CIRCLE NO. 15 ON READER SERVICE CARD

# TEST REPORTS

rior, there is also a single fairly large circuit board containing the low-level amplifier stages and no fewer than fifteen fuses of various types.

Numerous other circuit and construction features contribute to the unusual character of the HCA-1206. These include cascode Class A input stages, complementary MOSFET high-voltage drivers, and Class A/AB biased output transistors direct-coupled to the speakers without intervening phase-correcting networks. The amplifier also contains a number of temperature sensors and protective relays.

The front panel is comparatively stark. Besides the two massive handles, there is a rocker-type on/off switch, an adjacent LED power light, and six LED's to indicate instantaneous current overload in each of the six channels.

The rear apron actually serves some of the functions usually allocated to a front panel. Six pairs of multiway binding posts, which accept stripped wires or banana plugs, are along the bottom, plainly marked to show their function. Channels 1 and 2 are labeled non-bridgeable, and the others are marked MonoBridge. Small toggle switches above Channels 3/4 and 5/6 are normally set down for separate channels, up for MonoBridge operation.

Across the rear apron, just above the switches, are three pairs of gold-plated phono-jack inputs with small toggle switches between each pair. These inputs are used to "loop" signals from the inputs of Channels 1 and 2 to either or both of the other pairs. That simplifies multiroom stereo installations, allowing the routing of stereo programs to other zones without external jumper cables or Y adaptors.

Finally, across the top of the rear apron are six level-control knobs to balance the volumes in different rooms of a multiroom installation. When the knobs are turned to the dot marked THX (the maximum clockwise setting), the amplifier meets Lucasfilm standards for playback amplifier gain.

Our bench tests of the HCA-1206 were limited to its functions as a two-channel stereo amplifier, although we also applied its preconditioning phase (1 hour at one-third rated power into 8 ohms) to Channels 1 through 4. The

## MEASUREMENTS

All figures for Channels 1 and 2 only except as noted

<b>Output at clipping</b> (1 kHz)	
8 ohms .....	182 watts
4 ohms .....	312 watts
<b>Clipping headroom</b> (re rated output)	
8 ohms .....	1.8 dB
4 ohms .....	2.4 dB
<b>Dynamic power</b>	
8 ohms .....	188 watts
4 ohms .....	325 watts
2 ohms .....	528 watts
<b>Dynamic headroom</b> (re rated output)	
8 ohms .....	2.0 dB
4 ohms .....	2.6 dB
<b>Distortion at rated power</b> .....	0.011%
<b>Sensitivity</b> (for 1-watt output) .....	105 mV
<b>Noise</b> (re 1-watt output, A-wtd.) .....	-51

top cover of the amplifier became very hot—not enough to burn, but uncomfortable to touch for more than a couple of seconds. During our other tests it ran comfortably cool.

The Parasound HCA-1206 is certainly one of the most powerful and most versatile power amplifiers we have seen in its price range. For Home THX setups or a top-quality multiroom installation, it should be hard to beat (or match, for that matter). After we overcame our initial wariness about pushing the amplifier to its limits, we found it to be as rugged as it feels, looks, and weighs. Perhaps not "bulletproof," but certainly a far cry from some amplifiers we have tested that required kid-glove treatment to avoid self-destruction.

A final note: Parasound's manual for the HCA-1206 is quite specific in respect to do's and don'ts, and on using its operating versatility to best advantage. It is one of the few power amplifiers we have seen that is actually versatile enough to require such information, and it was reassuring to find it provided in a well-done owner's manual.

Obviously, an amplifier of the caliber of the Parasound HCA-1206 is going to do an absolutely first-class job in any home music installation. In my view, this amplifier is about as good as they come. □

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# TEST REPORTS



## Technics SL-PD1000 CD Changer

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

One of the most popular audio components these days is the five-disc CD carousel changer. At little or no more cost than a single-disc CD player, a carousel changer makes it possible to play music for hours without having to reload discs, and most changers have all the operating and programming features of a single-disc machine.

The Technics SL-PD1000, in addition to the conventional features of five-disc carousels, provides a number of unusual operating modes that, as a group, distinguish it from the others.

In its general appearance and operation, the SL-PD1000 is typical of carousel players. An open/close button on the front panel causes an almost full-width drawer to emerge from the lower part of the panel, revealing two disc-loading wells. The Disc Skip button rotates the carousel to allow up to five discs to be loaded, and a second touch on the open/close button closes the drawer smoothly and quietly.

The display window on the panel normally shows the number of the disc and track currently playing and can be switched via the remote to show the elapsed or remaining time on the track or disc. It also has a symbolic display of the loaded carousel positions, giving the user a clear picture of the player's invisible interior.

The basic CD operating controls (stop, pause, play) are full-size buttons to the right of the display, with smaller

buttons for fast search and track skipping. Above them is a row of small yellow illuminated buttons, numbered 1 through 5, that indicate the loaded disc positions (the one for the playing position glows green). The nearby Disc Skip button (not illuminated) rotates the carousel to place any disc in the playing position. Used in connection with the disc- and track-selection buttons, a Program Mode button allows up to thirty-two selections from the five loaded discs to be played in any order.

On the opposite side of the panel is a group of buttons that operate a number of additional programming features. ID Scan is a "music sampler" that is very convenient when you're looking for a particular selection on a disc. Pressing the button rapidly moves the laser pickup to the approximate midpoint of each track and plays it for 10 seconds before going on to the next track. To play the current track from its beginning at any time, you merely push the play button.

One of the unusual features of the SL-PD1000 is called Memory Reserve. Normally, a CD changer goes silent for a few seconds when it changes discs. The interval before the

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

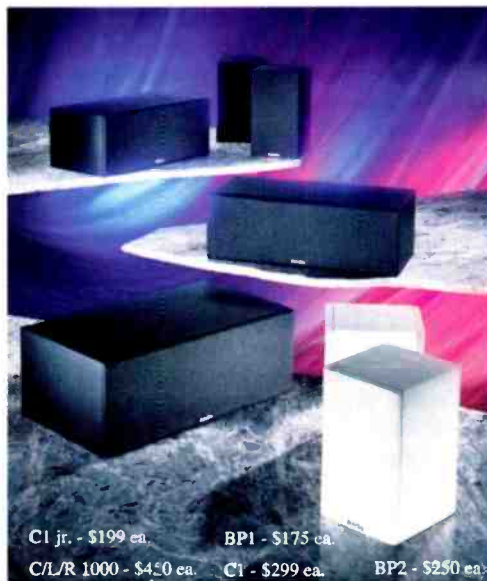
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C1 jr. - \$199 ea.      BP1 - \$175 ea.  
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# TEST REPORTS

new disc starts playing is punctuated only by the mechanical sounds of the changeover. When the Memory Reserve button on the SL-PD1000 is pressed, its digital audio data stream is passed through a 4-megabit digital memory, which can store several seconds of program, and playback is from the memory, not directly from the pickup. Therefore, when a change cycle begins, the last few seconds of music in the last selection on the current disc continue to play from memory, uninterrupted, while the discs are changed, effectively shortening the change time by about 3 seconds. Memory Reserve can also be used to shorten the intervals between selected tracks on the same disc.

A green LED next to the Memory Reserve switch indicates that it is active. During a change, the light blinks rapidly whenever you are hearing the delayed program. When Memory Reserve is used in conjunction with ID Scan, the result is called Parade Scan. The transition between scanned tracks takes place almost instantaneously, giving the effect of a nearly continuous flow of music (especially with a

disc having a large number of brief selections, such as a sampler).

Technics recommends that the Memory Reserve switch be left on at all times since it has no deleterious effects on other playing modes. The only reason not to use it is when the player's digital output is required, since that feature is disabled by Memory Reserve.

The SL-PD1000's random-play mode can select tracks randomly from one disc or from all five. An interesting variation of random play is Spiral Play, which plays the first track of Disc 1, followed by the second track of Disc 2, the third track of Disc 3, and so on until all the tracks of all the discs have been played. There is also a useful Delete feature that can select up to thirty-two selections *not* to be played and store them in the player's memory, where the information remains as long as the player is plugged into a power source.

Other features include a repeat function that is effective on all the other programming modes; Auto Cue, which puts the player into a standby condition at the beginning of each track, ready to start when the play button is pushed; and Edit Guide, which automatically programs the player for tape dubbing in accordance with the length of the tape so that no tracks will be interrupted before they are completed (a 4-second silent interval is left between tracks).

The SL-PD1000 comes with a remote control that duplicates virtually every front-panel function, including power switching and programming, and adds some of its own, like the time-display control. The rear panel has analog phono-jack outputs and an optical digital output.

The performance specifications for the SL-PD1000 are typical of today's better CD players. Like other Technics CD players, it uses MASH 1-bit digital-to-analog (D/A) conversion to preserve signal linearity down to the lowest levels. Technics says that the changer's automatic digital servo system for the playback laser improves disc-tracking performance with eccentric, warped, or scratched CD's.

The SL-PD1000 proved to be better than average in tracking through gaps



**M**emory Reserve shortens the disc-change cycle by about 3 seconds and can make track changes almost instantaneous.

## MEASUREMENTS

Maximum output level.....	2.34 volts
Frequency response.....	20 Hz to 20 kHz +0.05, -0.01 dB
De-emphasis error (at 5 kHz).....	+0.32 dB
Channel separation	
100 Hz.....	93.5 dB
1 kHz.....	96 dB
20 kHz.....	75 dB
Signal-to-noise ratio (A-wtd.).....	94.7 dB
Quantization noise.....	-89.9 dB
Dynamic range.....	98.2 dB
Distortion (THD+N)	
1 kHz at 0 dB.....	0.004%
1 kHz at -20 dB.....	0.003%
20 Hz to 20 kHz at 0 dB.....	0.006 to 0.035%
Linearity error (-90 dB).....	+1.5 dB
Max. interchannel phase shift.....	0.14°
Defect tracking (Pierre Verany #2 test disc).....	2,400 µm
Impact resistance	
top and sides.....	A+
Disc-change time (Memory Reserve off)	
worst case.....	8 to 9

in a disc's information layer. Playing the Pierre Verany #2 test CD, it showed only a slight tendency to mis-track through 2,400-micrometer interruptions in the recorded pattern (or even through two of them in rapid succession). The player is exceptionally resistant to physical impact in spite of its relatively light construction; we were unable to make it skip with the hardest palm or fist blows we dared to apply to its top or sides.

The SL-PD1000 was very quiet, even during change cycles, when many changers make surprisingly audible mechanical sounds. Track changes over most of a disc's surface were rapid, often under 3 seconds even without Memory Reserve, and nearly instantaneous in many cases when Memory Reserve was used. Disc changes typically took 8 or 9 seconds in the worst case (between disc positions 2 and 5 with Memory Reserve off).

In short, the Technics SL-PD1000 is an ideal changer to produce background or party music as well as nearly continuous playback of multiple-disc sets. □



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the GSP-560  
to rival any  
surround sound  
system on the  
planet.



# Perhaps w carried



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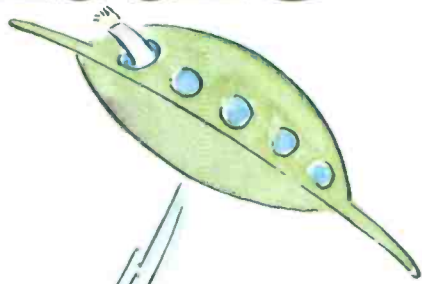
The GSP-560 features a high-current 80 watt center channel amplifier and a pair of high-current 40 watt amplifiers for the rear channels. It will accurately drive the most demanding loudspeakers, even those with impedance ratings less than 2 ohms.

The GSP-560 gives you a choice of Dolby Pro Logic, Concert Hall, Nightclub, and Five-Channel Matrix





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the listening  
environment that best suits  
your source and your mood.

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# TEST REPORTS



## Cambridge SoundWorks Ensemble III Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The Ensemble III is a smaller version of Cambridge SoundWorks' earlier subwoofer/satellite speaker systems (still in the company's line), offering their basic qualities at a significantly lower price. The system consists of two satellite speakers, each small and light enough to hold in the palm of one hand, and a separate bass module that can be located almost anywhere (but preferably somewhere in the vicinity of the satellites).

The 11-pound bass module, constructed of medium-density fiberboard and finished in black vinyl, is considerably smaller and lighter than those in most three-piece systems. It contains a single 6½-inch long-excursion driver with a dual voice coil (each driven from one stereo channel), with the low frequencies being summed in the speaker itself. The driver is mounted in an inner chamber, which opens into a second chamber vented to the out-

side through a flared port. The bass module handles the frequency range below 140 Hz.

Each satellite contains a nominally 3½-inch cone midrange driver (the actual effective diameter appears to be closer to 2½ inches) and a ¾-inch

dome tweeter protected by a perforated metal grille. The enclosure is made of ABS plastic laminated to a stiff, acoustically damped inner shell. As in the other Ensemble systems, each speaker module contains its own crossover components so that the modules can be connected in parallel in any order. The bass unit has two pairs of insulated spring connectors, and each satellite has a pair of recessed knurled-nut binding posts. Like other Cambridge SoundWorks speakers, the Ensemble III comes with 100 feet of 18-gauge speaker wire and a wire cutter/stripper plus complete directions.

We installed the Ensemble III satellites on 26-inch stands about 7 feet apart at the front of the room and 3 to 4 feet from the walls. The bass module was placed on the floor between them, close to the left speaker, with its port facing forward. The room response of the satellites alone, averaging their outputs measured at a position about 12 feet in front of the left speaker, was exceptionally free of irregularities due to boundary reflections and room resonances, with an overall variation of less than 3 dB from 150 Hz to 20 kHz. The output fell steeply below 150 Hz, to about -20 dB at 100 Hz.

A close-miked measurement of the satellite's cone driver indicated an extremely flat response,  $\pm 2$  dB from 150 Hz to 1.4 kHz (and less than  $\pm 1$  dB over most of that range). At higher frequencies this measurement is not valid, although the response irregularities were still quite moderate.

We made a separate response measurement at the port of the bass module. The curve was predictably double-humped because of the two coupled resonant cavities, with a  $\pm 3$ -dB variation from 43 to 180 Hz and falling off rapidly at lower frequencies.

A composite of the room response with the two close-miked measurements (all of which overlapped the adjacent curves for an octave or more) produced an impressively flat graph, within  $\pm 1.5$  dB from about 50 Hz to 11 kHz and rising about 8 dB from 11 to 20 kHz. The rise was apparently due to a tweeter resonance at about 17 kHz. That was confirmed by our quasi-anechoic MLS response measurements at 1- and 2-meter distances,

### DIMENSIONS

SATELLITES: 4½ INCHES WIDE, 3 INCHES DEEP,  
6½ INCHES HIGH

BASS MODULE: 8 INCHES WIDE, 8 INCHES DEEP,  
15 INCHES HIGH

### FINISH

SATELLITES: GRAY NEXTEL  
BASS MODULE: BLACK VINYL

### PRICE

\$329 (PLUS SHIPPING)

### MANUFACTURER

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# TEST REPORTS

which clearly showed a peak of about 12 dB at 17 kHz.

The satellites' horizontal dispersion at 45 degrees off-axis was good (fairly typical of a 3/4-inch tweeter), with an output drop of 4 dB at 10 kHz, about 6 dB at 15 kHz, and 12 dB at 20 kHz. The MLS frequency response was within 5 dB overall from 500 Hz to 11 kHz except for a sharp dip of 10 to 12 dB at 4.8 kHz, which affected only the frequencies between 3 and 5 kHz. That may have been related to the crossover between the satellite drivers and was not detectable in the room response or in listening.

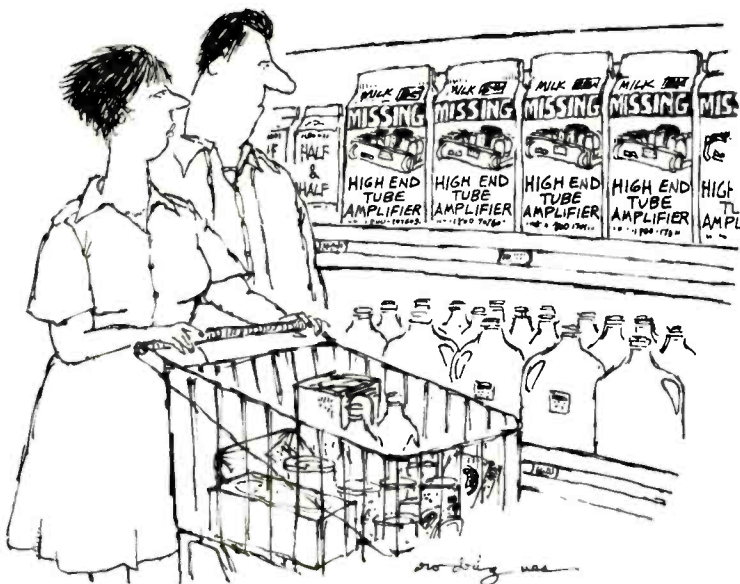
The complete system's impedance remained below 8.5 ohms from 20 Hz to 1 kHz, with a minimum of 2.8 ohms at 190 Hz. It rose to a broad maximum of about 18 ohms in the 4- to 5-kHz region before dropping to 10 ohms at 20 kHz. Sensitivity, measured 1 meter from a satellite and on its axis, was 87 dB sound-pressure level (SPL) with a 2.83-volt random-noise input. The bass module's distortion at a 4-volt level (equivalent to 90 dB SPL) was about 10 percent from 20 to 50 Hz, falling to 3.5 percent at 100 Hz.

The bass module's driver bottomed with a single-pulse 100-Hz input of 980 watts. Although its output became visibly distorted on an oscilloscope at considerably lower inputs, the cone did not suffer damage from this rather extreme treatment. The satellite driv-

ers also survived high-power pulse tests at 1 and 10 kHz.

The Ensemble III sounded as good in our listening tests as it measured, which is to say that it sounded very good indeed. There was no audible indication that the bass frequencies originated several feet from the satellites, and the system's sound was first-rate in every respect. Certainly there was no clue to the size of the drivers or the low cost of the complete system. Compared with some other speakers at or above its price level, the Ensemble III held its own very well. Probably its most distinctive audible characteristics were a slight crispness (probably due to its emphasis in the uppermost octave) and a total absence of artificial upper-bass tubbiness or boom. But there was no obvious lack of clean bass down to 50 Hz or so, below which it disappeared rapidly. And the system can play loud enough to impede conversation if that's what you want.

We have consistently found Cambridge SoundWorks speakers to be excellent values in every respect. Their designs do not claim to bypass natural laws, and they are offered with a refreshing lack of hype. The Ensemble III, like many of the company's other products, also manages to sound like a lot more speaker than its unassuming appearance and very attractive price would suggest. □



# MB QUART

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Sound Stage, Graton



**THERE ARE AS MANY  
HOME THEATER SPEAKER BRANDS  
AS THERE ARE MEMBERS OF CONGRESS.**



**AND MOST OF *THEM*  
AREN'T WORTH LISTENING TO EITHER.**

Want to know about some Home Theater speakers that are worth listening to? Then put down this magazine and visit an MB QUART dealer at your earliest convenience.

You'll see and hear why QUART Home Theater speakers are a breed apart. Our CTR CENTER CHANNEL, for example, achieves a higher level of dialog definition and localization by not conforming to popular dual driver designs. Our SUB TEN marries a 10" woofer with a 100W amplifier—yet is priced lower than other subwoofers that offer far less in terms of both sound and power. To stand up

to the dynamic demands of surround sound, we created the rear channel POINT FIVE, with a special titanium dome tweeter and long excursion 6.5" woofer, and the QUART 250, with angled cabinets that mirror each other for proper mounting on opposite side walls. In-wall models are also in the MB QUART Home Theater lineup.

What it all comes down to is this—MB QUART Home Theater speakers are every bit as long on performance as they are on promise. Which is more than can be said for most congressmen.

**MB QUART** ■

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CIRCLE NO. 41 ON READER SERVICE CARD

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( A. )

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( B. )

WE FORGOT TO PUT THE OTHER  
DOORS ON.

( C. )

ONE DOOR DIDN'T SEEM LIKE ENOUGH,  
BUT THREE SEEMED LIKE TOO MANY.

( D. )

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THAN FOUR DOORS.



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## NEON SEDAN & COUPE



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Always wear your seat belt.

# HOME THEATER: GOING FOR SEPARATES

Feasting atop a set of Marantz MA500 THX-approved single-channel power amplifiers (\$299 each) is a Fosgate Model Four surround-sound processor (\$1,900), which uses proprietary steering techniques for both Pro Logic decoding and multichannel music enhancement.





**Variety and flexibility are just two reasons to consider separate electronic components for an A/V system.**

**BY DANIEL KUMIN**

Are separates dead? It's no secret that most of today's home theater systems are built around A/V receivers, those integrated marvels that squeeze a surround processor/decoder, a preamp, an AM/FM tuner, and several power amplifiers into one relatively small box. Yet the greatest variety, flexibility, and in some cases quality in surround-sound gear are still found among the ranks of separate components. And despite the immense popularity of A/V receivers, there are plenty of surround separates to choose from—far more than you might expect.

Surround-sound separates fall into three basic categories—the stand-alone processor, the A/V preamp (or preamp-processor), and the processor-amp. A stand-alone processor houses only the electronic wizardry needed to transform two-channel listening into a three-



PHOTO BY JOCK P. IELING

## THE FINER POINTS

Once you've decided which *type* of surround separate best suits your needs, there are still a number of options to consider. Pay attention to the variety and sophistication of any "extra" surround modes the component offers. Today, virtually all surround components (A/V receivers included) provide Dolby Pro Logic decoding for a five-speaker surround system. Most also include several additional surround modes fine-tuned for film/video or music programs.

Many processors have a "Matrix" mode, which adds surround-channel ambience to conventional two-channel reproduction, and a "Hall" setting, which adds delay and a touch of reverberation to the surround signal to simulate the acoustics of a concert hall. A useful setting for old movies and late-night TV shows is Mono, which simply mixes everything to the center-channel speaker and the subwoofer. (Pro Logic does this automatically with mono sources, but may be subject to more noise and occasional leakage into the unused main and surround speakers.)

A number of processors go further, providing DSP surround modes for both movies and music. Because the term "DSP" is a source of considerable confusion (with no relief from consumer advertising), it's important to distinguish between the three ways digital signal processing can be used in the surround-sound context. Most Dolby Surround decoders (the increasingly hard-to-find decoders for simple surround-channel extraction) employ the most basic sort of DSP: digital delay circuits to provide the 15 to 30

milliseconds of surround-channel delay required by Dolby. While that certainly qualifies as digital processing, it's probably not what most of us think of when we see DSP in an ad.

Next come those processors that perform some or all of their Pro Logic (and other) decoding and processing in the digital domain, including channel steering and dematrixing. This is essentially a pure engineering choice: In terms of real-world performance, a digital processor chip has no overwhelming advantage over a good analog one, and it typically costs more.

Finally, there are those processors that use DSP to open the door to "extra" surround modes, which can be quite elaborate. All-digital devices like Lexicon's CP-3 Plus and Yamaha's DSP-A780, to name but two, offer custom surround modes with elaborate ambience enhancement (achieved by manipulating early reflections, reverberation, and other ambience components). Such devices typically offer a bevy of user-adjustable parameters (like echo density and reverberation time) as well as a number of surround presets for music listening and for non-Dolby film and video sources; Lexicon even includes an innovative two-channel DSP mode to recreate a binaural listening experience over speakers instead of headphones.

The bottom line: Selecting a DSP-based surround-sound processor just because it is "digital" is not really a good idea. Evaluate the features and performance first, then worry about the technology. —D.K.

dimensional experience, and is mainly intended to enhance a classic stereo system built around a preamp and discrete power amplifiers. It can be connected to the preamp's main outputs or in a tape-monitor or processor loop. The hallmark of today's surround processors is a Dolby Pro Logic decoder, which extracts four channels from Dolby Surround-encoded movies, TV shows, and music recordings and routes them to five line-level outputs—left, center, right, and two surrounds (the same mono surround signal goes to two speakers). Most processors also have additional surround settings for music listening, adjustable "sound-field" parameters that let you tweak up your own acoustic environment, and one or two "enhanced" modes for movies and video sources.

An A/V preamp combines audio/video switching and control functions with a surround processor/decoder. (A few components billed as "A/V preamps" have video switching but no surround-sound capabilities.) In addition to reducing the box count by one, an A/V preamp also greatly simplifies wiring chores and source switching, since all of your audio and video sources are routed through a central component. An A/V preamp/tuner—effectively an A/V receiver minus the power-amplifier sections—further integrates functions while allowing flexibility in choosing outboard amplifiers. An A/V preamp makes a lot of sense if you're assembling a surround system from scratch or if you want to add A/V switching and surround capabilities to a component audio system, in which case you simply replace the two-channel stereo preamp with a multichannel A/V model.

When it comes to the third category, the processor-amplifier, the line between "separate" and "integrated" components begins to blur. Designed primarily to add A/V switching and surround capabilities to an audio system based on an integrated amp or receiver, most processor-amps contain a Dolby Pro Logic decoder and two or three supplemental power amplifiers. The receiver or integrated amp continues to drive the main left and right speakers, while the processor-amp (which you patch into a tape or processor loop) powers the center and surround speakers.

### Why Separates?

Given the utility and convenience of A/V receivers, why would anyone





**Adding surround separates to a stereo system is the easiest path to home theater.**

Kenwood's KC-X1 Home THX tuner/preamp (top left, \$1,199) offers full THX Pro Logic processing and a digital AM/FM tuner with forty station presets. Its companion, the 600-watt Kenwood KM-X1 six-channel power amplifier (\$1,099), is also THX-certified.

want to go the separates route? The most common reason is to preserve a perfectly good two-channel system. There's no rule that says you have to mothball your current speakers and components to embark on the home theater quest. In fact, the easiest and most economical way to bring surround sound to a conventional receiver-based stereo system is to add a processor-amp and three more speakers, one to handle center-channel information (which includes most dialogue in movie soundtracks) and two for the surround-channel information (mostly sound effects and ambience).

A basic processor-amp such as Onkyo's ES-600PRO (\$410) will provide several surround options, including Dolby Pro Logic, and adequate power to drive three extra speakers (the ES-600PRO delivers 50 watts to the center and 20 watts to each surround). A more powerful add-on processor-amp like Adcom's GSP-560 (\$600), which delivers 80 watts to the center speaker and 40 watts to each surround, may be worth considering if you think you might upgrade to higher-power separates in the future. Processor-amps are also available from AudioSource, Carver, JVC, Kenwood, Yamaha, and others. Prices range from \$200 to \$700.

If you already own a collection of high-performance separate audio components, there are a few more surround-upgrade options to explore. While an add-on processor-amp will



The Yamaha DSP-A780 five-channel A/V integrated amplifier (\$899) incorporates sixteen digital sound-field-processing functions. Including twelve for video-oriented listening and four for music enhancement, as well as handy on-screen menu operation.



Dealers can retrofit Lexicon's classic CP-3, a stand-alone THX/Pro Logic decoder and ambience processor, to CP-3 Plus (\$3,200) status with a new program chip for \$250. Enhancements include some left-right steering of the normally "monophonic" surround outputs.

## POWERING UP

If you find yourself traveling the stand-alone processor or A/V preamp route to home theater, one thing's for sure: You're going to need some extra power. Even if you plan the most basic Dolby Pro Logic setup (and assuming you already own a good two-channel amplifier to power the front left and right speakers), you'll need to drive a center speaker and two surround speakers. The simplest solution is to drive the surrounds in parallel from one amp channel, which is perfectly fine since the surround channel of Dolby Surround-encoded soundtracks is mono anyway.

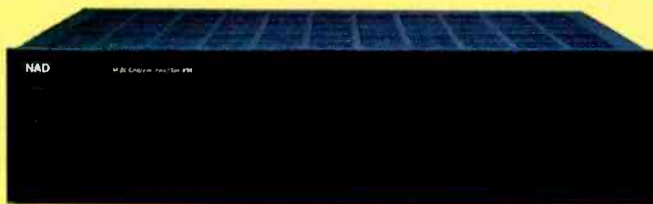
But if your new surround processor has some of those "extra" surround modes, including Home THX and most DSP music settings, and you want to put them to work, you'll need extra discrete channels of amplification to produce the intended effect: center and "decorrelated" surround channels for Home THX, center and two separate surround channels in the case of some DSP-enhanced music modes. And chances are that you're going to want a subwoofer to squeeze every last bit of excitement out of those blockbuster movie soundtracks like *The Abyss*, which means at least *six* dedicated amp channels.

While there's no magic formula for determining how much power to use for the extra channels you're adding to your

system, it's safe to say that the center speaker should receive about the same wattage as your main left and right speakers. For the surround speakers, you may be able to get away with about 25 percent as much power—unless the room is particularly big or the speakers particularly inefficient, in which case you'll need to bump it up substantially. And for a subwoofer you'll want at least as much power as for the front channels.

Before you run out and buy two or three two-channel amplifiers to satisfy the power requirements of your new surround system, be sure to check out the new breed of four-, five-, and six-channel power amplifiers designed for flexibility. NAD's Model 906, for example, is rated to deliver 30 watts into each of six channels, but any pair of its channels can be bridged to deliver 90 watts in a three-, four-, or five-channel configuration. Multichannel A/V amps from Acurus, B&K, Carver, Rotel, ADS, Forté, Parasound, and others provide similar flexibility.

If you're starting from scratch, of course, a five- or six-channel amp can provide all the power you need for an entire home theater system. Carver's AV-405, for instance, provides a one-box solution for a five-channel system with 100 watts each for three channels and 50 watts each for another two. —D.K.



NAD's Model 906 reconfigurable multichannel power amplifier (\$699)

likely do a fine job, separates-oriented audio enthusiasts tend to prefer stand-alone processors such as Carver's slim DPL-20 (\$380), which provides basic surround options, and the Fosgate Audio Model Four (\$1,000), a sophisticated device with unusually flexible music-surround modes.

If you go with a stand-alone processor, you'll also need an outboard power amplifier or two to drive those new home theater speakers (see "Powering Up" at left). But that can be an advantage because it enables you to apportion power to meet specific system requirements (you have an oversize room and need a beefy surround-channel amplifier, for example) rather than being locked into the power supplied by a processor-amp. It also gives you an excuse to upgrade an aging power amplifier: You can relegate the old amp to surround-channel duty and use the shiny new one to drive the main front channels. Other companies offering stand-alone processors include Rotel, Harman Kardon, and Pioneer. Prices range from \$400 to \$1,000.

### The THX Connection

THX-style home theater is yet another reason to consider the full-separates route. Although integrated components bearing the Home THX logo are beginning to appear on store shelves, including A/V receivers from Onkyo and Technics, nearly all Home THX-certified surround "controllers" (decoder/processors) are stand-alone components. In addition to a THX mode (which implements specific technical refinements devised by Lucasfilm to squeeze as much realism as possible out of a Dolby Surround-encoded soundtrack), THX-equipped processors typically provide very high performance and flexibility in both Dolby Pro Logic mode and non-Dolby video and music modes. They also tend to carry steep prices, typically in the \$1,500 to \$4,000 range.

One of the most sophisticated stand-alone Home THX processors is Lexicon's \$3,200 CP-3 Plus, featuring a number of highly configurable digital surround modes for both movies and music. The \$4,200 PAV in Madrigal's Proceed line also provides considerable surround processing power—it even has a connector for an outboard discrete-channel digital decoder when one becomes available.

Many high-end stand-alone surround processors, including those mentioned above, actually straddle the



# "Highest Performance...lowest profile."

## POLK AUDIO'S HIGH PERFORMANCE CENTER CHANNEL SPEAKERS

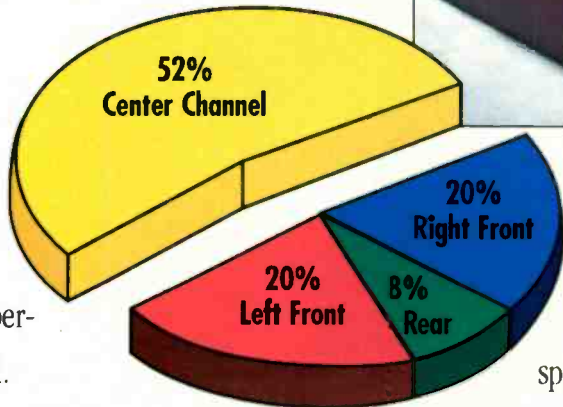
"Some say that the center channel and the front stereo speakers must be identical. And they're right—to a point. You need high performance but not a monolith perched on your TV. Four years ago, our CS100, America's first dedicated center channel speaker, proved that technology could give you what you wanted—high performance in a versatile, unobtrusive package. Thanks to our newest technology, Dynamic Balance®, the second generation of the CS Series now gives you the highest performance...lowest profile."

*Matthew Polk*

Since all on-screen action, not just dialog, is reproduced by the center speaker, its performance is critical.

Dynamic Balance® enables us to create small driver components that deliver the sound quality usually associated with much larger drivers. And because there's no sonic coloration, our center speakers will blend seamlessly with your other speakers so voices and sound effects will pass from speaker to speaker without changing timbre or pitch.

The uniquely angled, low profile cabinets and superior magnetic-shielding give our center channel



*Since the center channel must reproduce all the sounds of the on-screen action, from an explosion to a whisper, it is responsible for over 50% of what you hear (often as much as 90%). That's why Polk's center channel speakers have full dynamic range and are designed to handle extreme levels of power.*

speakers the versatility to fit anywhere you want them without fear of picture distortion. Select from the CS350, CS250 or CS200 for the right speaker to fit your system and your budget.

For more information on the Polk center channel speakers or any Polk home theater speaker, call 1-800-377-POLK or dial our toll-free dealer locator to find your nearest authorized Polk dealer. An audition will show you that Polk delivers on "highest performance...lowest profile."

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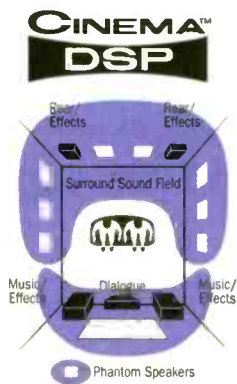
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# With Cinema DSP, you'll be amazed

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



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

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

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

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

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





# at what comes out of the woodwork.

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

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

Stop by your local Yamaha dealer for what could be a very eerie demonstration. Maybe we can't talk you into a system, but that doesn't mean we can't scare you into one.

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

**YAMAHA®**



**Many high-end processors can function as full A/V preamps, handling audio and video switching.**



**AudioSource's SS Five add-on surround-sound processor (\$350) uses a highly regarded Dolby Pro Logic decoding chip from Analog Devices. It has a subwoofer line output and three 24-watt amplifiers for driving the center and surround speakers.**



**The HC-808 surround-sound processor from Counterpoint (\$1,295) also uses an Analog Devices Dolby Pro Logic decoding chip along with other high-quality passive circuit components. It features a pair of stereo subwoofer outputs.**



**Carver's CT-27V A/V preamp (\$850), shown atop a Carver AV-405 live-channel power amplifier (\$750), handles seven audio inputs and four video inputs.**

line between preamp-processor and outboard component. They can function as full-system A/V preamplifiers, handling both audio and video source selection and signal routing, or they can be patched into an existing system between preamp and power amps or in a tape or processor loop. While the last approach can create a somewhat complex arrangement, it lets you return the system to its "pure" stereo condition simply by disengaging the tape-monitor or processor switch.

Speaking of A/V preamplifiers, they represent an attractive option whether you're adding surround capability to a separates-oriented audio system or assembling an A/V separates system from scratch. In addition to providing A/V switching and surround processing for both movies and music, a state-of-the-art A/V preamp is likely to deliver substantial gains in convenience, flexibility, and overall performance compared with a conventional stereo preamp. True A/V preamps (those with onboard surround processing) are available from Sony, Denon, Carver, Soundstream, NAD, McIntosh, and others. Prices usually range between \$700 and \$1,200, although a few models cost upwards of \$2,500.

If you want to bring AM/FM radio into the fold, A/V tuner/preamps are available from Adcom, McIntosh, Carver, Kenwood, Marantz, and others at prices ranging from \$600 to more than \$3,000. The Kenwood KC-X1 (\$1,000), McIntosh MX130 (\$4,025), and Marantz AV-600THX (\$1,200) take things to the next level by incorporating Home THX circuitry. *(Continued, page 78)*





*“For Movie  
Sound we know of  
NO Comparably  
Priced System  
that beats it.”*

- VIDEO MAGAZINE, January, 1994

*“Deep bass without the aid of big, expensive amplifiers.  
Sounds panned from side to side as smoothly  
as their corresponding images flew across the screen.”*

- SOUND & IMAGE, Summer, 1993

*“We quickly discovered what a difference the right  
sound system can make! The subwoofers added tremendous  
excitement to the movie watching experience.”*

- POPULARELECTRONICS, January, 1993\*

*“Cerwin-Vega produces a powerful and taut sound.  
The impact can be especially felt in the midrange, which will  
pound you with rotor blade sweeps from Apocalypse Now.”*

- SATELLITE ORBIT, June, 1993



CERWIN-VEGA **SENSURROUND!** HOME THEATER

*Turn it up.*

CIRCLE NO. 46 ON READER SERVICE CARD

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The Adcom GSP-560 surround-sound processor/amplifier (\$600) combines Dolby Pro Logic decoding with the three additional amplifier channels (center and surround) that you need to change a traditional stereo system into a home theater.



Madrigal's handsome Proceed PAV A/V preamplifier (\$4,200), with Home THX processing as well as Dolby Pro Logic decoding, provides switching for as many as ten different sources and multizone outputs. On-screen menus simplify operation.



Marantz's AV-600THX A/V tuner/preamp (\$1,200) features full Home THX processing circuitry, Dolby Pro Logic decoding using a digital delay line, and a thirty-station memory in its AM/FM section.

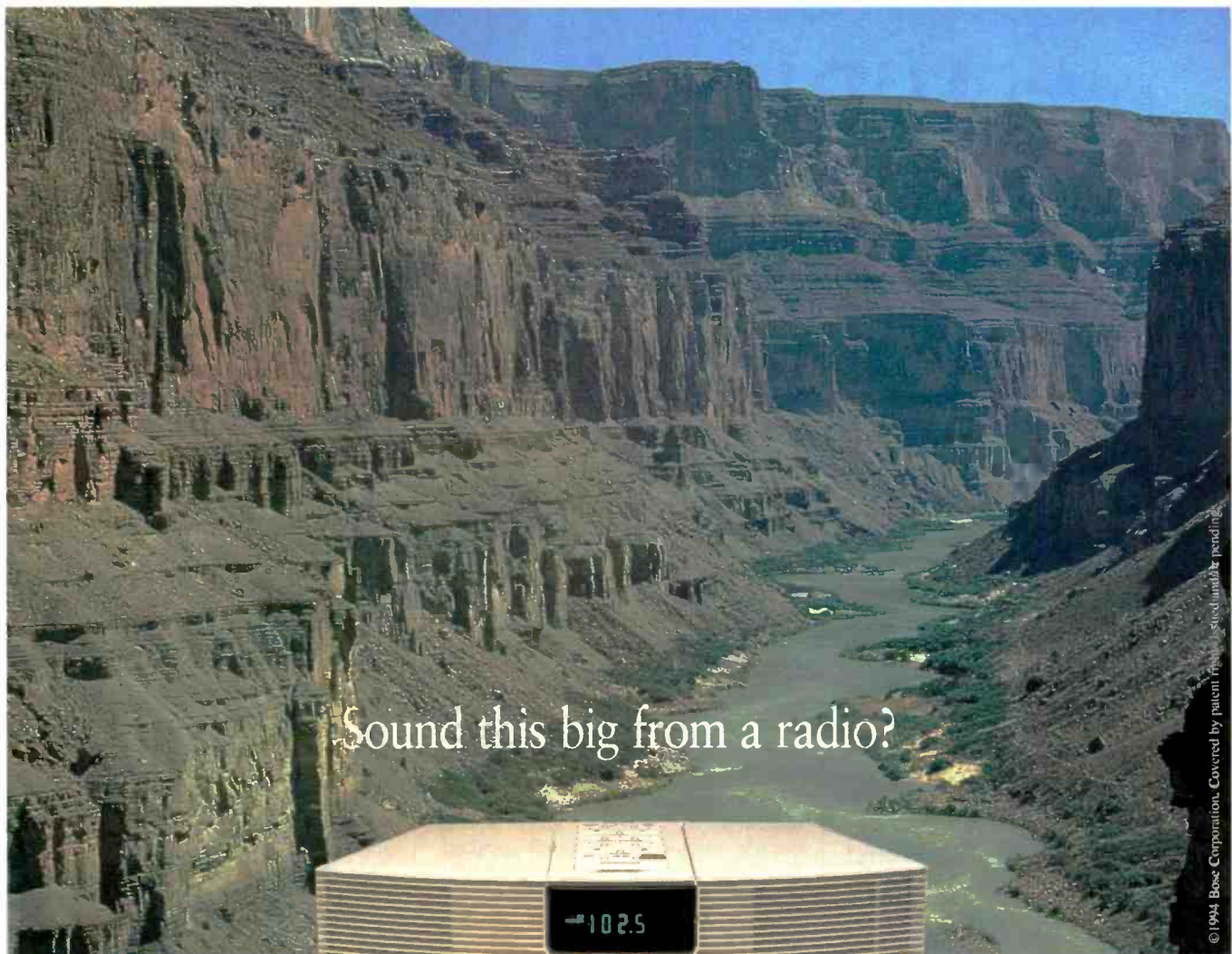
**A separates system could be upgraded for discrete-channel surround by simply replacing or modifying the processor.**

### Looking Ahead

Finally, another argument in favor of the separates approach to surround sound is adaptability to future formats—like the all-digital “5.1-channel” Dolby Surround Digital (DSD) system now used in a number of motion-picture soundtracks. The DSD system provides six discrete audio channels, including a bass-only one for a subwoofer (hence the “.1”). Dolby Surround Digital has already been chosen for the U.S. HDTV system and will probably be incorporated into laserdiscs next year. A/V receivers and amplifiers that do not provide a separate line-level preamp-out/main-in loop for the left, center, right, and each surround speaker—currently the majority—will not work with a discrete-channel surround system. A separates system, on the other hand, could be upgraded by simply replacing the surround processor (or modifying it, as in the case of Madrigal’s Proceed PAV), thereby protecting your investment in power amplifiers as well as basic preamp and tuner components.

That’s not to say A/V receivers are a bad investment. On the contrary, they remain perhaps the best value in the history of audio. And at least one A/V receiver (Onkyo’s THX-equipped TX-SV919THX) already has a special connector for an outboard discrete-channel digital decoder, which some believe could be available as early as next year. So, you see, even in this age of home theater, separate components are alive and well. □





Sound this big from a radio?

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Not just big, but full, rich, and incredibly lifelike. You literally have to hear the Bose® Wave® radio to believe it. The secret of its extraordinary sound is the patented acoustic waveguide speaker. It amplifies and enriches, producing natural, lifelike sound from a radio small enough to fit anywhere.

The Wave® radio is designed for convenience as well as great sound. There's a handy remote control, pre-set buttons for your favorite stations, and many other features. You can even connect it to a portable CD or cassette player to enjoy your favorite music.

Don't look for the Wave® radio in stores; it's available directly from Bose. Simply call the toll-free number or send the coupon below to receive a complete information kit or to try out the Wave® radio in your home for fourteen days, satisfaction guaranteed. Otherwise, just return it for a full refund of the purchase price.

Only Bose offers all this advanced technology for just \$349. Call 1-800-845-BOSE, ext. RP165, or send the coupon today. And learn all about a small wonder.

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# DEALER'S CHOICE AUDIOPHILE A/V

If you walked into the Sounding Board in Ridgewood, New Jersey, looking to spend about \$5,000 on a no-frills audiophile-quality music system with home theater potential, manager Scott Burghart would recommend this simple yet elegant setup: an Arcam Alpha 5 CD player and Delta 110S preamplifier, a Bryston Model 3B NRB high-current power amplifier, and a pair of Magneplanar's new Magneplanar MG 2.7/QR dipole speakers. Besides being able to reproduce all kinds of music faithfully, Burghart says, the lineup sets the stage for an excellent home theater system.

"It's the sound, not the video, that creates emotional impact," he explains, adding that the trademark open sound of the Magneplanars gives realism to both music and movies. Each speaker combines planar-magnetic bass and midrange elements with a quasi-ribbon tweeter in a 6-foot-tall panel that's 22 inches wide and only 1 1/4 inches deep. The Maggies can present difficult impedance loads, but the Bryston amp is rated to deliver 200 watts per channel into 4 ohms, Burghart notes, and it's covered by an extraordinary twenty-year warranty.

For control, he likes the versatility of Arcam's Delta 110S preamp, which has four line-level inputs, a switchable moving-magnet/moving-coil phono input, two tape outputs, and a full-function remote control. For an extra \$500, the 110S can be converted into a digital preamp (the Delta 100, shown in photo) by installing an 18-bit digital-to-analog (D/A) converter board.

Completing the system is Arcam's Alpha 5 CD player, which Burghart says appeals even to "audiophile snobs who still prefer LP's." The player has an uncluttered front panel with a defeatable display, three search speeds, twenty-track programming, and a remote control. The final price for the music ensemble: \$5,394 plus tax.

Burghart's proposed home theater expansion can be implemented in two steps and assumes that the proud owner of the new audio system already has

a decent TV and a hi-fi VCR. The first step of the expansion requires an investment of \$2,398 and calls for adding surround and center-channel speakers, a second amplifier to power them, and a surround-sound processor.

To match the brawn of the Bryston amplifier, Burghart recommends Adcom's "cost-effective" GFA-2535 four-channel amplifier, which is rated to deliver 60 watts per channel into 8 ohms. The plan is to bridge two of its channels, sending 200 watts to the center speaker, and use the remaining two channels to power the surrounds.

For surround speakers, Burghart chooses a pair of British-made two-way Ruark Swordsman Plus II's for their musical accuracy and attractive appearance. "There's more sound coming out of the surround speakers than people realize," he says, "and the Ruarks are able to handle surround-channel information without distorting." What's more, the 14 3/4-inch-tall speakers are available in walnut, mahogany, or black-ash veneer to match the room decor.

Center-channel chores would be handled by Mirage's two-way MC-si. Designed for placement above or below a TV, the 19-inch-wide speaker is magnetically shielded and rated down to 45 Hz. More important, Burghart says, it has a "tone" switch on its back panel to help bring its tonal quality in line with that of the Magneplanars.

The final addition in this step is Fosgate Audionics' Model Five surround-sound processor, featuring five surround modes including Dolby Pro Logic. "There's accurate spatial placement with the Fosgate," Burghart says. "It gives you a good sense of what the engineers were trying to do when they recorded the soundtrack."

A home theater with this much clout just wouldn't be complete without good low bass, which is why Step 3 adds Energy's "highly reliable" AS-180 powered subwoofer. Rated down to 25 Hz, this workhorse boasts a 12-inch driver, an adjustable, two-way crossover, and a built-in amplifier rated to deliver 180 watts continuous or 720 watts peak! The subwoofer also sports a video setting that engages a 45-Hz boost, which adds "more woomph" to movie soundtracks, Burghart says.

Finally, to achieve the best audio and video quality possible, Burghart recommends Denon's LA-3500 combi-player for laserdiscs and CD's. In addition to an "excellent audio section," the \$2,000 player uses digital processing for luminance/chrominance separation, time-base correction, and field-noise reduction, all translating into crisp, sharp video images.

In the end, Burghart's total package is far from cheap at \$10,492, but in return he promises a no-compromise home theater. "My customers spend a lot of time and money putting together superb-sounding stereo systems," Burghart says, "so when they add home theater we're looking for a balanced system that delivers great spatial imaging and dynamic sound effects. This system is awesome."

—Rebecca Day

## THREE STEPS TO HOME THEATER

The Sounding Board, Ridgewood, New Jersey

### 1. Music System (\$5,400)

Arcam Alpha 5 CD player (\$899)  
 Arcam Delta 110S preamp (\$1,100)  
 Bryston Model 3B NRB power amp (\$1,395)  
 Magneplanar MG-2.7/QR speakers  
 (\$2,000 a pair)

### 2. Surround Sound (\$2,400)

Fosgate Model Five processor (\$599)  
 Adcom GFA-2535 power amplifier (\$600)  
 Mirage MC-si center speaker (\$500)  
 Ruark Swordsman  
 Plus II speakers (\$699 a pair)

### 3. Home Theater (\$2,750)

Denon LA-3500 combi-player (\$2,000)  
 Energy AS-180 powered subwoofer (\$750)





# Big Speaker Sound...

# without the Big Speaker.



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



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

## INTRODUCING POLK'S NEW RM7000 HIGH PERFORMANCE HOME THEATER SYSTEM

"As thrilling as home theater is, it's impossible to get excited about the pile of home theater speakers that engulf your TV. I didn't think you should have to sacrifice the look of your home to home theater. So I created a high performance system that gives you what you *really* want . . . big speaker sound without the big speaker." *Matthew Polk*

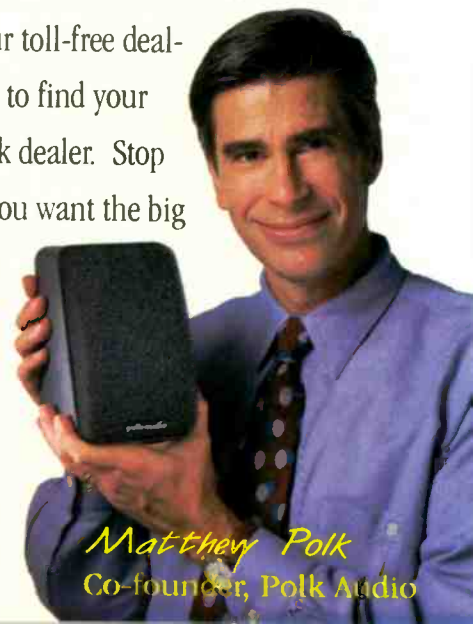
Wait till you hear the RM7000 system. You'll be astonished. Its true-to-life sound results from the same groundbreaking technology, Dynamic Balance<sup>®</sup>, used to create our acclaimed flagship speaker, the LS90. Yet the RM satellites are so small, they fit into your palm. Most importantly, so small they disappear into your room.



The powered subwoofer fits easily into your furniture and, thanks to its revolutionary technology, guarantees more bass in less space.

The powered subwoofer, with our newest technology, high velocity compression drive,<sup>™</sup> guarantees you powerful bass in a size that will fit into your furniture. In fact, with the RM7000 we've miniaturized everything but that big, room-filling Polk sound.

For more information on the RM7000 and other Polk home theater speakers, call 1-800-377-POLK or dial our toll-free dealer locator to find your nearest authorized Polk dealer. Stop in and tell them that you want the big speaker sound without the big speaker.



*Matthew Polk*  
Co-founder, Polk Audio

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# SIGNALS FROM THE SKY



## **DBS—Direct Broadcast Satellite— could change the way you watch TV (and listen to music).**

Until very recently, satellite TV in this country meant a big dish—7 to 10 feet or more wide—and a fairly big budget. But that situation began to change, dramatically, last December with the launch of the first high-power communications satellite designed specifically for small-dish reception in the continental United States. By the end of this year, it and a recently launched companion satellite will be providing coast-to-coast DBS (Direct Broadcast Satellite) coverage with as many as 170 channels of high-quality digital television, including most major cable channels, spe-

cial-interest programming, and pay-per-view sports and movies. There will even be an audio-only digital music service.

The satellites were built by GM Hughes Electronics, which will supply the bulk of the programming through its DirecTV division. The other programmer is USSB, a subsidiary of Hubbard Broadcasting. Thomson Consumer Electronics developed the digital compression technology used in the system, dubbed DSS (for Digital Satellite System), and is the initial producer of the reception equipment—dishes and receivers—which it is selling under its RCA brand.

**BY RICHARD R. PETERSON  
AND MICHAEL RIGGS**

## The Technology

The heart of DSS is a digital data compression system based on the MPEG (Motion Picture Experts Group) standard. Signals not already in digital form when they reach an uplink facility, which feeds programming to the satellites for relay back to earth, are first converted from analog to digital. Although these digital signals could be transmitted as is, efficiency would be poor and the number of channels the satellites could support would be much smaller. MPEG intelligently reduces the amount of data in each signal according to psycho-visual and psychoacoustic principles. For audio signals, the principle is masking: A low-level component can be discarded without altering the sound if it is near enough in frequency to a higher-level sound. Such masking, or drowning out, of one sound by another is the same phenomenon that is used to reduce data-storage requirements in MiniDisc and DCC (DCC, in fact, uses a version of MPEG coding called PASC).

For video signals, the principle is redundancy: If portions of the picture don't change from one frame to the next, there's no need to send new data for those areas until they *do* change. That may sound like an obvious and easy strategy, but it is not a simple thing to pull off without visible artifacts, particularly in scenes containing relatively small, fast-moving objects. Consequently, the amount of video compression that can be applied depends on the characteristics of the program. Sports, such as basketball, tend to be the most difficult and thus require the highest data rates for good performance. Movies, which have a lower frame rate than video, and relatively static programs, such as soap operas, can usually get by with lower data rates. Juggling data rates and programming to achieve maximum channel capacity without sacrificing picture quality may be one of the hardest jobs facing DirecTV and USSB.

At present, both audio and video are being subjected to MPEG-1 compression, but it is expected that by the end



Pictures from France! Well, from outer space, actually, courtesy of the DSS satellite dish (background) and set-top receiver.

of the year video processing will be moved over to MPEG-2, enabling full channel utilization. Apart from the increase in available programming, the change will not be obvious to users, since the receiving equipment is already compatible with MPEG-2. The signals delivered by DSS are capable of rivaling laserdiscs in video quality and CD's in sound, though it remains to be seen how consistently such performance will be maintained in the face of the temptation to increase programming capacity at the expense of data rate. Fortunately, the encoding can be improved over time without requiring changes to the receivers in users' homes, enabling some increase in quality, channel capacity, or both.

Signals originate from two entirely new, state-of-the-art, all-digital facilities. The USSB uplink site is close to Hubbard Broadcasting's headquarters in St. Paul, Minnesota. DirecTV claims that its Castle Rock, Colorado, broadcast center is the most sophisticated ever built, capable of transmitting 216 channels simultaneously.

The satellites themselves are two-ton behemoths, each with sixteen 120-watt transponders that operate in what

is known as the Ku-band (around 12 GHz). Each transponder is capable of transmitting 23 megabits per second of usable information. That works out to four to eight channels per transponder after compression. The satellites are in geosynchronous orbit at 101°W longitude, which is considered the most desirable of the positions available for DBS use in this country.

## The Programming

So what is all this fancy hardware being used for? The combined DirecTV/USSB programming breakdown goes something like this: thirty channels devoted to major cable services (HBO, USA, CNN, and the like), thirty channels of sports, thirty channels of special-interest programming, and fifty channels of pay-per-view (PPV) movies. In addition, DirecTV is providing Music Choice, a thirty-channel all-music service from Digital Cable Radio (DCR). The DirecTV and USSB lineups are complementary rather than competitive, and it seems likely that most users will subscribe to both. USSB is

even planning some completely advertiser-supported channels that will be free to anyone who has the DSS receiving equipment.

Programming is sold primarily in packages of services at monthly rates competitive with those for cable TV. But some services will be available individually, and there will be quite a bit of pay-per-view programming, of sports and other special events as well as movies. These can be ordered using an on-screen program guide and the system's remote control. DirecTV says it will start showings of some hit movies at 30-minute intervals, making it easy for you to fit viewing to your schedule rather than the other way around. DirecTV is pricing pay-per-view movies at \$2.99 each. DSS's large channel capacity also offers great opportunity for programming targeted at specific groups of people. Already DirecTV is offering TV Asia, which carries Asian programming from the Indian subcontinent, and the Physicians Television Network (PTN), which carries medical information and educational programming.

To navigate that sea of programming, DSS provides a menu-driven



guide that enables the user to scan through program listings or to select listings based on categories, such as movies or sports. Once into such a category, you can select from submenus, such as football, golf, or whatever, until you've homed in on exactly the kind of programs you're looking for. Then you can select the one you want by pointing and clicking with the remote. The system also enables you to set password-protected spending and rating limits and to lock out specific channels.

One category *not* normally available on the system is major broadcast-network programming (CBS, NBC, and so forth). DirecTV does offer a package of network stations, but only to users who are outside the reception areas of network affiliates. Otherwise, you're going to need an antenna or cable to pick up your local network stations, as well as any local independents you want to watch. The DSS receiver enables easy switching between local and satellite channels from the remote control.

### The Equipment

Picking up DSS programming requires an 18-inch dish installed with an unobstructed line of sight to the satellites and a set-top receiver that selects and decodes signals from the antenna and sends them to your television. For the first eighteen months or one million units, whichever comes first, Thomson (RCA) has the exclusive right to sell DSS reception equipment. For six months after that, Thomson will share exclusivity with Sony, the second licensee, and after that other manufacturers will be allowed to enter the market.

Thomson is selling three packages: the RCA DS1120RW basic DSS system (\$699), the DS2430RW deluxe system (\$899), and the DRD102RW receiver (\$649), which can be used in conjunction with the deluxe system to connect a second TV set to the dish. The basic system includes a dish, a receiver, and a remote control. On the receiver are S-video, composite-video, stereo audio, and RF output connectors, satellite and regular antenna inputs, and a wideband data port for pass-through of HDTV signals. The deluxe system increases the number of outputs on the dish to two, in order to facilitate multiple TV hookups, adds to the receiver a second composite-video output, a second set of audio

## SATELLITE ALTERNATIVES

DSS was not the first source of satellite TV, and it probably will not be the last. Several other orbital positions are open for high-power DBS, and the FCC has licensed a number of companies to use them. Whether the new services that result will be compatible with the DSS receiving equipment is yet to be seen, although DSS's strong start seems likely to encourage development in that direction.

In addition, there is one competing DBS system already in operation: PrimeStar. It offers only sixty-five channels, however, and because it operates from a medium-power satellite, it requires a dish roughly twice the size of DSS's.

How PrimeStar will fare against DSS is open to question, but traditional big-dish C-band satellite receiving systems will probably continue to sell, though perhaps in reduced numbers. For enthusiasts prepared to devote the real estate and foot the bill, C-band provides outstanding quality and great

programming diversity. In fact, the DBS services, like cable operators and network affiliates, take much of their programming from C-band satellite transmissions, which exist to provide such distribution.

—Michael Riggs



outputs, and a low-speed data port (for nonvideo information), and includes a universal remote control. The DRD102RW receiver is the same one included in the basic system. The prices for the DSS receiving equipment may seem steep at first glance, but there's quite a bit of cutting-edge technology packed into those boxes. And some dealers are offering financing plans that result in total monthly payments for both hardware and programming that are not out of line with what one might expect to pay for cable-TV service, for example—as low as \$20 or \$30 a month.

Although Thomson recommends professional installation for most people, the equipment is designed to be simple to install, and kits and accessories are available to ease the process. Correct angle of elevation for the dish can be determined automatically from your zip code, and the dish emits an audible signal-strength tone to help you get it aimed perfectly.

### The Future

As sales increase and more manufacturers enter the DSS market, prices for the reception equipment are likely to fall. One might also expect to see receivers built into TV sets once the market gets large enough. Thomson has said it will introduce such products when it thinks the time is right.

One of the most exciting aspects of DSS is its flexibility. It is not limited to standard NTSC television. Right now, it would be possible to send widescreen programs compatible with existing 16:9 aspect-ratio sets, and that seems very likely to happen. When HDTV is ready, it will probably come first via satellite. Indeed, given the apparent reluctance of broadcasters to embrace HDTV, DSS and services like it could be the primary source of HDTV programming for quite some time after it's introduced. □

Richard R. Peterson is president of The DBS Connection, Maplewood, MN.

# CARVER RESEARCH LIGHTSTAR REFERENCE POWER AMPLIFIER

**S**ome fourteen years ago, Carver developed something called a "Magnetic Field" amplifier, a revolutionary change from conventional power-amplifier design. It was small (a cube less than 7 inches on a side), weighed only a few pounds, delivered 200 watts per channel into 8-ohm loads, and sold for \$349. Over the years, other Carver amplifiers have employed the same principles, some of which were adopted in various forms by other manufacturers.

Basically, the Carver Magnetic Field amplifier had a signal-sensing power supply that rapidly increased the supply voltage to the amplifier circuits to accommodate signal peaks exceeding normal listening requirements. The design enabled a relatively low-power amplifier (and power supply) to handle high-level program peaks without distortion. Only a couple of steps of voltage increase were practical at the time of the original Carver M-400 amp, but they were sufficient for it and its successors to provide the essential performance of a heavy, expensive power amplifier in a much more economical fashion.

Over the years technology has advanced, especially in digital circuits and devices, and Carver Research (a division of Carver Corporation) has been working for some time on a vastly improved amplifier carrying the basic concept of the original Magnetic Field amps to its ultimate potential. The Carver Research Lightstar Reference amplifier, as the first commercial product using the new technology is called, invites (actually, *demands*) superlatives. It is very large and heavy, and correspondingly expensive, with a list price of \$3,500. It is also probably the first *true* voltage-source amplifier to reach the hi-fi market, certainly the first one I have seen or heard of. I suspect it will not be the last.

The Lightstar develops most of the required output *voltage* in its power supply,

**BY JULIAN HIRSCH**

PHOTOS BY JOCK P. LEUNG





**HAS CARVER  
CREATED THE  
FIRST TRUE  
"AMP FOR ALL  
SPEAKERS"?**





which is built around what the company calls a Digital Transformer, and the role of the output devices is merely to funnel the necessary *current* to the load. Although the power-supply (signal) voltage can be as high as  $\pm 170$  volts, the output stage uses only two devices, operating in Class A, and the amplifier has no global negative feedback or conventional gain stages in its signal path.

**T**here are many other distinct differences between the Lightstar and ordinary amplifiers, some of which are explained more fully in "The Lightstar Advantage" (box). And for those seeking an in-depth exposition, Carver Research has a white paper on the design of this remarkable amplifier.

Basically, the most unusual operating feature of the Lightstar is that it is a virtually ideal voltage source with enormous power capabilities. The manufacturer's specifications tell the story: The Lightstar is rated to deliver 300 watts into 8 ohms, 600 watts into 4 ohms, and 1,200 watts into 2 ohms, from 10 Hz to 20 kHz, with less than 0.2 percent total harmonic distortion (THD). It can also safely drive even lower load impedances (down to 1 ohm or less), although its performance is not rated or specified below 2 ohms.

The Lightstar's physical appearance is as novel as its electrical characteristics. All black, it is made of thick ( $\frac{3}{8}$ -inch) aluminum and measures 19 inches wide, 7 inches high, and  $17\frac{3}{4}$  inches deep. It weighs 72 pounds. The sculptured front panel has two illuminated level meters and an oval touch-plate standby on/off switch. The amplifier remains on in standby mode, but with reduced power consumption.

The Lightstar is actually a dual-mono amplifier. Not only are the two

channels entirely separate from each other, both physically and electrically, but they even have separate heavy-duty line cords and circuit-breaker/power switches on the rear panel. Equipped with sturdy handles, the rear panel also has conventional single-ended signal inputs, via gold-plated phono jacks, and balanced inputs with gold-plated Cannon-type connectors. A small toggle switch near each input section switches it from standard-gain mode to high gain for use when the amplifier is being driven directly from a CD player or "passive preamplifier."

The speaker connectors are gold-plated binding posts usable with single or dual banana plugs, lugs, or stripped

wire. There are two pairs of outputs for each channel, providing added versatility when driving a multiple-speaker array or when biwiring speakers.

The Lightstar is protected against shorted outputs by a muting circuit, which operates when it is driven hard into an impedance of 0.5 ohm or less. The magnetic circuit breakers in the power-cord inputs are each designed to trip if the power consumption in that channel substantially exceeds its rated maximum value of 1,440 watts. The two channels together can draw between 2,000 and 3,000 watts in full-power operation, so the power cords should be plugged into outlets with a suitable rating—and never through an extension cord! Since the Lightstar's Digital Transformer has the potential to generate radio-frequency interference (RFI), the amplifier is tightly shielded by its cabinet and has RFI filters in its line and speaker circuits.

Because the Lightstar can consume so much line current, we drove only one channel at a time for high-power tests (both channels were driven for certain low-level measurements). The amplifier easily met its specifications, impressive as they are. Frequency response was better than  $\pm 0.1$  dB from 20 Hz to 10 kHz, rising to  $+0.4$  dB at 20 kHz. A wide-range measurement from 10 Hz to 200 kHz (the limits of our Audio Precision System One test equipment) showed a response of  $+0.4$ ,  $-0.2$  dB from 10 Hz to 20 kHz; the response dipped to  $-1.1$  dB at 60 kHz, rising again to  $+1.5$  dB at 130 kHz before falling to below  $-2$  dB at 200 kHz. These small (and insignificant) variations may have been due to the RFI filtering or to special aspects of the power supply.

Power output was, to put it mildly, prodigious (see "Measurements"). As would be expected from an ideal voltage source, the Lightstar's dynamic power output was virtually identical to its steady-state clipping-level power. I suspect that they were actually the same, but the dynamic measurement (reading the display from an oscilloscope and calculating the power) is inherently less accurate than a metered steady-state measurement.

The Lightstar's cabinet became extremely hot during the high-power tests. The top and side surfaces were too hot to touch for more than a second or two, although the front panel remained comfortable to the touch. After all, the top, bottom, and sides of the Lightstar are, in effect, the heat

## MEASUREMENTS

### Output at clipping (1 kHz)

8 ohms .....	331 watts
4 ohms .....	650 watts
2 ohms .....	1,300 watts

### Clipping headroom (re rated output)

8 ohms .....	0.43 dB
4 ohms .....	0.35 dB
2 ohms .....	0.35 dB

### Dynamic power

8 ohms .....	315 watts
4 ohms .....	612 watts
2 ohms .....	1,223 watts

### Dynamic headroom (re rated output)

8 ohms .....	0.21 dB
4 ohms .....	0.09 dB
2 ohms .....	0.08 dB

### Distortion at rated output

0.045%

### Sensitivity (1 watt into 8 ohms)

Standard .....	100 mV
High .....	26.5 mV

### Noise (A-weighted, re 1-watt output)

Standard .....	-82 dB
High .....	-74 dB

### Frequency response

..... 20 Hz to 20 kHz  $+0.4$ ,  $-0.1$  dB





KEF Uni-Q

## WHERE DOES THE TWEETER OF A HIGH FIDELITY LOUDSPEAKER BELONG?

### Q - S E R I E S

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

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

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



**H**igh-fidelity audio amplifiers are normally designed to approximate what is known as a constant-voltage amplifier. The idea is that for any given input voltage, the amplifier should deliver a certain output voltage determined by its gain, regardless of the load it is driving. Practical amplifiers have never achieved that ideal, however, and most fall well short of it because of the severe demands placed on conventional output stages and power supplies when driving low-impedance or highly reactive loudspeakers.

In a conventional amplifier, the power supply is "dumb." It sits there collecting current from the power line like a tank collecting water from a pipe. The output transistors are like nozzles at the end of a hose attached to the tank. There is a more or less constant pressure from the water backed up in the tank that forces water out of the nozzle when it is opened up. Similarly, as an output transistor switches on in response to the signal voltage, it allows current to flow out of the power supply in proportion to the power-supply voltage and the impedance presented by the speaker (the lower the impedance, the more current is delivered). At any level short of

maximum output, the output transistors are actually working to keep the power supply from delivering as much current to the speakers as it would like to. This relationship between voltage, current, and impedance holds up until the impedance becomes so low that the power supply can no longer maintain full voltage or the amount of current flowing through the transistors exceeds their safe-operating limit. So instead of the amplifier's maximum continuous power doubling every time the impedance of the load is halved, as would happen if it were a perfect voltage source, the power usually increases at only about half that rate until some limit is reached that sharply restricts the total output (in most amplifiers this condition arises when the load impedance gets down around 2 or 3 ohms).

The Lightstar solution is to use a "smart" tracking power supply. Instead of operating the output transistors at a fixed high voltage, the power supply in the Lightstar amplifier continuously scales its voltage to that of the input signal. Consequently, at any given time essentially all of the voltage developed by the supply is actually pushing current through the single pair of output transistors into the loudspeakers. Because

the output transistors themselves then operate at a relatively low voltage, they can handle much more current than would be possible for transistors operating at a high voltage. As a result, Carver Research says, the Lightstar amplifier can drive an impedance of even a fraction of an ohm up to the limits imposed by the power available from the wall socket.

The other really neat thing about the Lightstar design is how it handles the problem of "back EMF"—the energy kicked back from the loudspeaker to the amplifier by the reactive component of its impedance. Conventional output stages have to dissipate that energy somehow, eating up some of their output transistors' current capacity and thereby further restricting their ability to deliver power to the speakers. That is why you may sometimes hear of a particular speaker being difficult to drive because it has a highly reactive impedance. Instead of trying to fend off the return current, the Lightstar amplifier actually recycles it into the power supply. The end result, Carver says, is a unique achievement: an amplifier that simply doesn't care what sort of load it is attached to. Our tests tend to support that remarkable claim. —Michael Riggs

sinks for the most powerful amplifier most of us will ever see and touch, and a miniaturized watt has yet to appear on the scene.

Harmonic distortion at 300 watts into 8 ohms was about 0.05 percent from 100 Hz to 5 kHz, reaching 0.1 percent at 20 Hz and about 1 percent at 20 kHz. At 1 kHz the distortion was less than 0.1 percent from 5 watts to about 320 watts into 8 ohms. All of these readings were of total harmonic distortion plus noise (THD+N). A spectrum analysis (excluding noise) of the harmonics in the audio range showed a few components reaching as high as 0.01 percent and others typically around 0.001 percent or so.

Given the Lightstar's measured performance, one would not expect it to contribute any sound of its own in normal listening, and that was certainly our experience. Sonically, it was utter-

ly neutral and transparent. On the other hand, we were not willing to place the speakers in jeopardy by using more than a tiny fraction of this amplifier's power reserve. Carver Research recommends (and we heartily concur) that the speakers be protected by external fuses of the value suggested by the speaker manufacturer.

**D**uring our listening tests, we left the Lightstar energized, in its standby condition, so that it could be activated at a finger touch (and because it was not practical to reach behind it to turn the two mono amplifiers on and off). Although the standby mode of operation is undeniably convenient, we suspect that it could run up a sizable electric bill in time. The amplifier's top, after 24 hours in standby, was fairly warm to the touch and became slightly warmer

during use at normal listening levels (averaging less than 1 watt).

Based on our experience with the Lightstar, we recommend it highly for driving difficult speaker loads, particularly ones in which the impedance dips to 2 ohms or less. On the other hand, even if you use only a minute fraction of its capability, the Lightstar Reference is probably the most advanced power amplifier you can buy, and I doubt that any speaker has yet been made that it cannot drive with ease.

If its drawbacks (weight, power consumption, size, and so forth) are discouraging to consider, be patient. We understand that Carver Research is planning other, more affordable Lightstar components for the near future. □

*Carver Research, Dept. SR, P.O. Box 1237, Lynnwood, WA 98046.*



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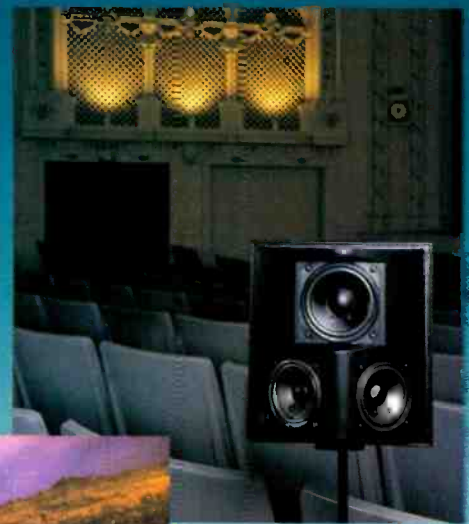
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*Peter D. Tribeman*

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# THE MATCHING GAME

**Getting your components to  
work properly with each other is both  
important and, usually, easy.**



Although few people would dispute that component hi-fi is the way to go for really top-notch sound, some still shy away from it out of fear that they will wind up with a bunch of equipment that doesn't work well together—a not altogether unreasonable concern. On the other hand, serious incompatibilities between modern components are very uncommon, and with a little care even minor glitches can be avoided.

Compatibility issues can be lumped roughly into two categories: operational and sonic. Incompatibilities that affect sound quality would include things like the inability of a

particular amplifier to drive a certain loudspeaker to adequate levels without distortion or an additive accumulation of similar frequency-response errors through the various components in a system. Most audio components exhibit small response errors that, by themselves, are unimportant. But if two or three components in a system err in the same direction, their errors may add up to a significant total. This problem is much less common today than it was in the days when phonograph records were the primary music source, but it can still happen. Particularly bad, and good, combinations must be discovered by experiment, perhaps aided by a

**BY PETER W. MITCHELL**

good dealer. A dealer's expertise in identifying good component partnerships can be an important reason to pay retail prices rather than searching for the lowest mail-order prices.

In most cases, however, sonic differences arising from component interactions are rather small. If you care intensely about musical sound, you may decide that any difference you can hear is worth paying for. But the decision is yours alone. Sales clerks and published reviews may imply that a particular amplifier or connecting cable will make a dramatic, night-and-day improvement in sound. But the audibility, or even the existence, of such differences often depends on the remainder of the system. Listen for yourself, and pay only for improvements that you hear.



operational incompatibilities, affecting the ability of the various compo-

nents in a system to work together properly, are also possible, but thanks to the high level of standardization in the audio industry, they normally do not have severe consequences (product failure, loss of sound, or compromised safety). Generally speaking, you are likely to obtain reliable performance from any assortment of reputable components, although there may be some minor obstacles to circumvent in the process of hooking everything up.

### Line-Level Connections

Except for those from phono cartridges or to loudspeakers, almost all connections between components in an audio system carry "line-level" signals and are relatively simple. They nearly always involve modest voltages (2 volts or less) and a very small amount of current (a ten-thousandth of an ampere). As a general rule, any audio output from one component can be connected to any audio input on another component. Since line-level audio connections usually employ RCA phono sockets and plugs, we can restate the rule as follows: Anything with RCA phono output jacks can be connected to anything else with RCA phono input jacks.

Most line-level connections are interchangeable. You can connect the audio outputs from a CD player to the CD, tuner, auxiliary, or tape-in jacks on an amplifier; the sound will be the same in each case. If you have no CD player, you can use your amplifier's CD input for the playback signal from



a spare tape deck or for the line-out audio signals from a VCR or laserdisc player. And with the aid of an adaptor cable you can feed the volume-controlled output signal from any headphone jack to the line input of a separate tape recorder or amplifier.

There are a few exceptions—certain connections that you should *not* make. Don't panic; plugging a cable into the wrong socket won't hurt anything. But the following connections would yield either poor sound or no sound:

**Line to Phono.** The small cylindrical socket that is used for most audio connections is known generically as an RCA phono jack, but input sockets that are specifically labeled Phono should be used only to connect a turntable for playing LP records. If you connect anything else (such as a CD player or a tape recorder) to an amplifier's phono input, you will get bad sound: bass-heavy, dull, and very distorted.

**Line Out to Tape Out.** The connection labeled Tape Out on an amplifier is emphatically *not* designed to receive a tape deck's output. (Tape Out and Tape In should really be labeled something like "Out to Tape" and "In from Tape," respectively, for clarity.) The universal rule is that the output from one component should be connected only to another component's input. If you accidentally connect a cable from a tape deck's output jacks to an amplifier's Tape Out, you may get music, but the amplifier's input selector probably won't function properly and the

resulting impedance mismatch will impair the quality of the sound.

**Digital to nondigital.** Many CD players have line-level audio outputs and also a digital output that uses the same type of RCA phono jack. The digital signal should be connected only to a digital input, as might be found on a digital processor or digital recorder. If you connect the undecoded digital signal to any audio input jack on an amplifier, you'll hear the digital code itself—a faint trace of the music overlaid with a hiss-like noise. *Caution:* This signal contains ultrasonic energy, which may burn out a tweeter if you play it loud.

**Video to audio.** On VCR's and laserdisc players the line-out jacks include a video socket as well as the left and right audio signals. When you make connections to an A/V receiver or amplifier, be sure to connect the video signal to a video input. (Video sockets are usually color-coded yellow or orange to distinguish them from audio sockets, which may have red, white, or black inserts.) A few audio-only amplifiers have an input labeled Video that is intended only for video-related sound, such as the audio signal from a TV or VCR. If you connect a video signal to any audio input jack on your amplifier, you will hear a loud buzz when that input is selected, and the video signal's high-frequency energy may blow out your tweeters. (Contrariwise, if you connect an audio signal to a video input jack, no harm is done, but you'll get no picture.)

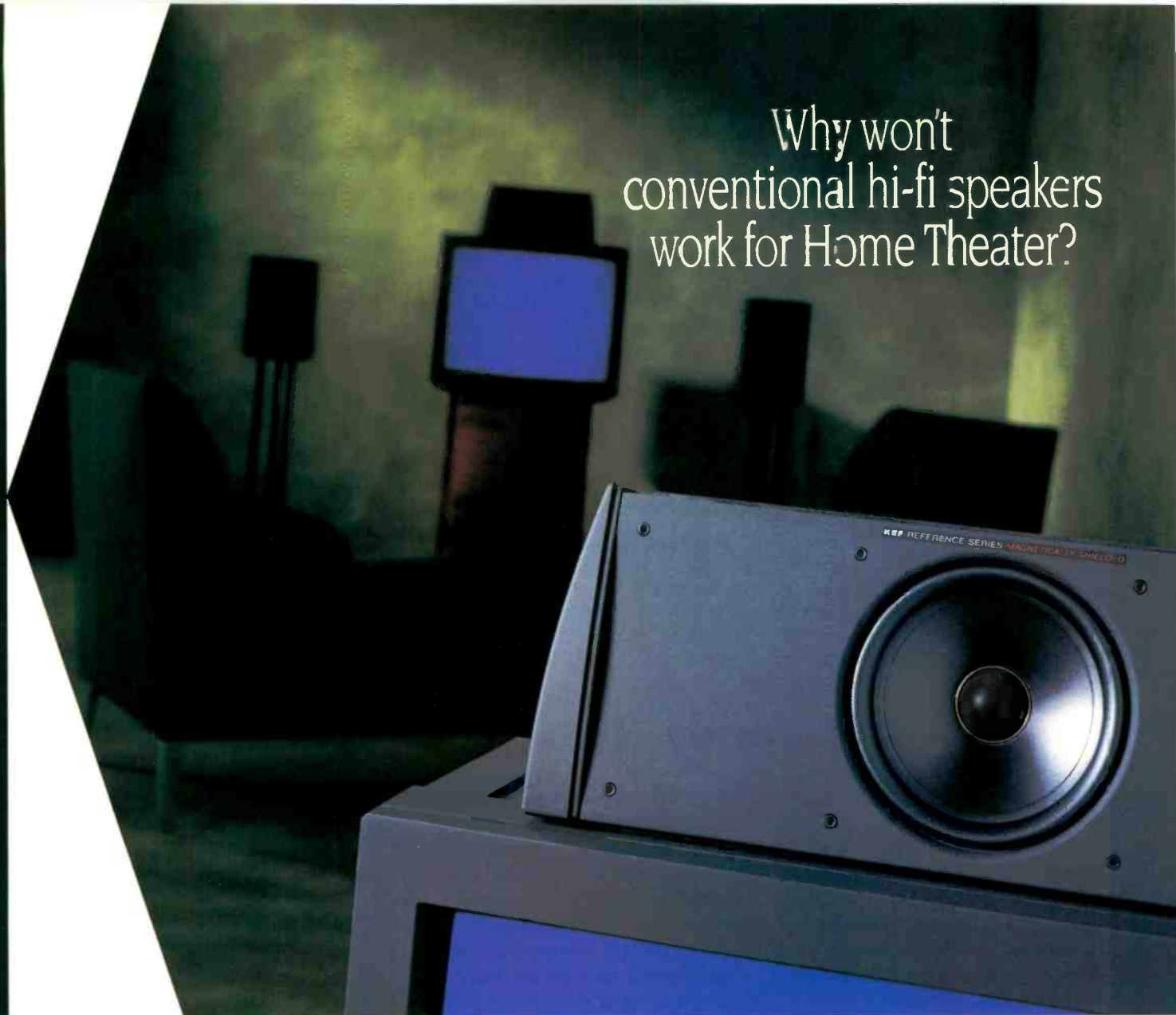


With normal line-level connections, the principal compatibility issue concerns the output impedance of the signal source. This question arises because product-design engineers face conflicting goals. On the one hand, safety and reliability considerations impel designers to include a resistor at any output in order to limit the current if the output is short-circuited. (To prevent unwanted crosstalk, in many amplifiers the input selector automatically short-circuits each unselected input to ground. That insures that when you are enjoying a CD, you'll hear only the CD; the sound won't be contaminated by bleed-through from the tuner or other input signals.)

On the other hand, a current-limiting output resistor usually adds to a circuit's output impedance. That impedance interacts with the capacitance of the connecting cable, creating a



Why won't  
conventional hi-fi speakers  
work for Home Theater?



UNI-Q DRIVER TECHNOLOGY  
LETS EVERYONE BE IN  
THE "SWEET SPOT."

You need three front speakers - left, right and center - to achieve realistic home theater. A stereo pair would place the dialog in the center (where it belongs) from only one listening position. You can't use conventional hi-fi speakers for the center channel, even shielded models, because their dispersion patterns prohibit raising them too high or laying them on their sides.

KEF's proprietary Uni-Q<sup>®</sup> driver, which places its tweeter at the center of the woofer, allowed KEF's engineers to create the ideal center channel speakers, the Models 100 and 90. Their uniform dispersion patterns let them be placed beautifully above or below the screen, creating the impression that the sound is coming *directly* from the screen. Moreover, the Models 100 and 90 are both Reference Series, which not only ensures their quality and consistency; it permits their use as satellites and their seamless integration with other KEF Reference and Q-Series loudspeakers.

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high-frequency rolloff. To keep the rolloff above the audio band, or, at worst, to minimize the loss at audible frequencies, any output impedance (from a CD player, tape deck, or an amplifier's tape-out or preamp-out jacks) ideally should be less than 1,000 ohms. If your CD player has a relatively high output impedance (greater than 2,000 ohms), you'll need to use a short connecting cable (or a special low-capacitance cable) to avoid rolling off the high audio frequencies. (For more about cables, see "Cables and Contamination" at the end of this article.)

### The Cartridge/Preamp Interface

Record-playing systems vary much more in sound than do CD players. Moving-magnet phono cartridges have a high output impedance at high frequencies, so their treble response depends on the capacitance of the cable. And the pickup's high-frequency reso-

nance is damped by the phono preamp's input impedance. Therefore, the sound of a phono cartridge can be fine-tuned by experimenting with the values of resistance and capacitance that "load" the cartridge.



"high-output" moving-coil phono cartridge has an output signal nearly as strong as that of a moving-magnet design, but its low impedance makes it less sensitive to loading. Typically, however, moving-coil pickups have an output voltage so low that it is inadequate for a normal phono input. Such cartridges require a special high-gain preamplifier designed for very low circuit noise.

### Digital Connections

Most connections between audio components involve analog signals, but digital connections are becoming more commonplace, particularly to convey the digital signal from a CD

player to an external digital-to-analog (D/A) converter or to a digital recorder. Three types of connection are available, but usually only one or two types are found on any given product. Your choice will necessarily depend on the connectors that you find on your equipment.

A *coaxial digital interface* employs RCA phono jacks and the same technology as the line-level video output from a VCR or laserdisc player. Outputs and inputs both have a 75-ohm impedance, which matches the characteristic impedance of the coaxial cable used to link them. When correctly implemented, a coaxial digital connection can provide superb performance, but there are ways in which difficulties can arise.

Because three-wire balanced cables are not used for digital connections in consumer equipment, the cable can pick up hum from the power line. A digital output is supposed to employ an isolation transformer that would keep power-line leakage out of the signal, but many CD players omit the transformer to reduce cost. And many players don't maintain a true 75-ohm impedance across the wide frequency range of the digital signal. As a result, differences in cable impedance can impair data transmission to an extent that, in extreme cases, might affect the sound. (In principle, any cable that does a good job with video signals should also handle digital signals successfully.) Coaxial cables can also convey power-line hum and RFI (radio-frequency interference, picked up from the digital equipment itself) to the analog audio circuits in connected equipment, though usually at inconsequential levels.

The *Toslink connection* is a compact, low-cost interface for use with plastic-fiber optical cables. Its principal advantage is that the connection involves a pulsed light beam rather than electrical wiring and therefore can't pick up (or carry) hum or RFI. Electrical impedance matching is also irrelevant to this type of connection, since no electrical signals are involved. Vibration of the plastic cable can increase the timing jitter in the digital signal, which could slightly increase distortion during D/A conversion. Distortion would have to go up quite a bit to become audible, however.

The least common, most costly, but perhaps best digital interface is the *AT&T ST connection* for glass-fiber optical cable. Very few components

## WHAT, ME WORRY?

Compatibility is about components working well together, not about safety. The UL and CSA symbols on most electronic components show that they have passed independent tests proving that they are electrically safe—even when abused or misused. If you plug a cable into the wrong socket you may get no sound, but you are very unlikely to hurt anything in the process.

In most cases, you simply cannot damage a modern electronic component by connecting it wrong. The sole exception is speaker wiring: If positive and negative speaker wires (from an amplifier's plus, or red, and minus, or black, output terminals, respectively) touch each other while music is playing, the resulting short circuit could blow a fuse in the amplifier. With many designs even that won't happen; the amplifier's protection circuits will simply shut off the sound until the short-circuit is removed. To be on the safe side, turn off the power until you have finished connecting the speaker wires and have inspected the installation to make sure that no loose or frayed strands of wire are touching an adjacent terminal or the metal chassis.

Incidentally, if each channel of an ampli-

fier produces 40 watts, do not connect the two channels together hoping to get 80 watts. The two channels of a stereo amplifier are electrically separate and must always remain so! Short-circuiting their outputs together is an efficient way to create repair bills. A few amplifiers contain special circuits that enable two channels to be "bridged" for higher power, but don't try it if the owner's manual doesn't describe that option.

In any case, you should always observe a few basic precautions:

1. Don't remove the top cover or bottom panel of any AC-powered product. There may be dangerous voltages inside.
2. Don't allow ventilation slots to be covered or obstructed. Don't put papers or clothing on the top, and don't allow a heavy amplifier or receiver to sink into a carpet.
3. To avoid unpleasant surprises, turn the volume control all the way down when connecting or disconnecting anything. Better yet, switch off the power, or unplug your amplifier's AC power cord.
4. When in doubt, don't be impatient; take a break and read the owner's manual.

—P.W.M.



have ST connectors, however, and coaxial or Toslink hook-ups should normally be adequate for consumer audio systems.

### Physical Interfaces

Some compatibility problems are quite basic in nature. For example, if you discover that you must exert substantial force to insert a phono plug into its socket, the center pin of the plug may actually be slightly oversize. It will make a fine connection, but the insertion may stretch the interior of the socket. The same plug will continue to fit well in the future, but if you ever insert an ordinary plug in the stretched socket, it may fit loosely and make the connection unreliable. So if a plug doesn't seem to want to go into a socket, your best bet is not to force it.

### Amplifiers and Speakers

There is much more to be said about the complex interaction between amplifiers and loudspeakers than can be fit here. The essential consideration, however, is impedance. Reducing the impedance of the speakers connected to an amplifier will increase the amount of current, and thus power, they can draw from the amp—up to a point. As a practical matter, there is always some limit to the amount of current an amplifier can deliver, and in any conventional amplifier that limitation will determine the minimum impedance it can drive without misbehaving—overheating, distorting, shutting down, or, in extreme and unusual cases, burning out its output transistors. Any of those symptoms is an indication that you may have an amp/speaker compatibility problem.

**U**nfortunately, loudspeaker impedance ratings are, at best, only approximate, since the actual impedance usually varies substantially with frequency. Moreover, amplifiers and receivers now often carry excessively conservative warning labels (mostly to satisfy UL requirements) about the minimum impedance that should be connected to them. There are some speakers that present an unusually difficult load and that can be driven only by amplifiers designed for high-current output. They are the exceptions, however: Most loudspeakers will work with most of the amplifiers and receivers on the market. If you're in doubt, a good dealer should be able to steer you clear of problematic couplings. □

## CABLES AND CONTAMINATION

In the old days, the cables used to connect audio components were called "patch cords," and a free cable was packaged with every product. Nowadays audio dealers sell cables separately as well, as a premium accessory. Although many esoteric claims are made about cable design, the main benefit you can get by paying extra is superior construction—oxygen-free wire, connections that are soldered instead of molded-on, Teflon insulation ("dielectric") instead of cheaper plastic, strain reliefs to prevent the wire from breaking where it enters the plug, phono plugs that provide a snug fit in the socket, and so forth.

Most conventional interconnects are coaxial in form, to minimize the cable's tendency to act as an antenna, picking up hum and radio-frequency interference from the environment. Twisted-pair cables can work equally well in most environments and may provide lower capacitance. (Ideally, all cables would be labeled to indicate their capacitance, but many are not.)

Impedance-related electrical interactions may result in audible differences when cables are changed, but these are usually very minor and are often system-dependent, apparent in one system but not in another. That is particularly true for cables that have an arrow indicating a preferred direction of use. Electrons don't care whether they are traveling east or west in a wire. But an interconnect actually contains two conductive paths. The "hot" wire, connected to the center pin of the plug, carries the signal voltage from one component to another (CD player to amplifier, for example, or preamp to power amp). The "ground" wire, connected to the plug's skirt,

completes the circuit, provides the ground reference for the signal, and serves as the cable's shield against interference.

But in most audio components the chassis is not a true electrical ground. Electrical noise, entering from the AC power cord, can leak from the power transformer onto the chassis, and different products may have differing ground potentials. When a cable connects two products together, leakage current can flow along the ground wire, adding noise and possibly distortion to the audio. To avoid this effect, some audio cables leave the ground wire unconnected at one end. You'll have to experiment with such cables to discover whether reversing the direction makes any difference in your musical pleasure.

Directional cables are just one way to deal with power-line leakage. A second tactic is to use a voltmeter to measure the leakage voltage on each chassis, experiment with the orientation of each AC plug in its socket, and then mark the plug orientation that produces the lowest chassis voltage. A third method is to buy a power-line filter to clean up your AC.

The ultimate cure for power-line noise and radio-frequency interference is to select audio components designed to work with "balanced" cables. Balanced connections eliminate interference by keeping the signal ground separate from the chassis ground. Each channel uses a three-wire connection: signal hot, signal ground, and a separate shield that may be connected to the chassis ground. Balanced inputs and outputs are used in professional audio setups (recording and broadcast studios) and in some audiophile components. —P.W.M.



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BY MICHAEL W. SHERMAN



# THE DISC RECORDING A CENTENNIAL APPRECIATION

**NOVEMBER 1994** marks the centennial of the American disc record. One hundred years ago, the first commercial disc recordings made in America were placed on sale by the United States Gramophone Company. It was a modest beginning. Only about fifty records (or "plates," as they were called) were offered, primarily in the Washington-Baltimore area, and there was not even a practical machine to play the discs, but from this tiny seed would grow an industry that would dominate recorded entertainment for generations.

Before 1900, most recorded sound was captured on a wax cylinder. About the size of an aluminum soda can, the fragile cylinder was sold beginning in 1889 by the North American Phonograph Company, a concern that pooled the patents of Thomas Edison with a rival group arising from the research of Chichester Bell and Charles Tainter. Most cylinders sold during the 1889-1894 period were employed in coin-operated phonographs in commercial "parlors," as the machines were still considered too expensive for home use. In addition, no method



PHOTO OF AN EARLY BERLINER GRAMOPHONE MACHINE, BETTMANN ARCHIVE

for mass duplication of cylinders had been developed, and they had to be transcribed individually from originals made at the recording session. The procedure yielded both inconsistent results and an inadequate supply of records.

**D**uring this period, the flat disc was under development by its inventor, Emile Berliner. Berliner had first demonstrated his disc at Philadelphia's Franklin Institute in 1888, but it was still experimental. Mass duplication was not yet possible because no satisfactory material for pressing records had been found. In addition, the grooves in the original master discs were etched using acid, which produced a loud but somewhat scratchy recording.

It was in Europe that Berliner's disc recordings were first sold to the public. In 1889, Kämmer and Reinhardt, a toy manufacturer in Germany, began producing and selling little 5-inch discs and a small hand-propelled device to play them called a "gramophone." It was sold throughout Germany and England, mainly as novelty entertainment for children. Today, few of those tiny discs remain. Since they were considered toys, most of them were roughly played and then discarded.

Berliner returned to the United States in late 1890 and set out to develop a disc record for serious commercial use. In April 1891, together with a small group of New York investors, he formed the American Gramophone Company. Berliner's laboratory and studio were located in Washington, D.C., and it was there that he began his recording efforts. There is little doubt that experimental recordings were made during 1890 and 1891, but it is unlikely that any of them were pressed and sold. A few cornet, piano, and clarinet recordings that date from 1892 were eventually released, and these are probably the earliest surviving American-made disc records.

## List of Plates in Stock

NOVEMBER 1st, 1894.

### BAND MUSIC.

- 118 Dude's March
- 130 Black and Tan
- 111 Marching Through Georgia. (with cheers)
- 111 The same - Patrol
- 2 La Serenata
- 115 Star Spangled Banner
- 8 Coxey's Army
- 11 Salvation Army
- 9 Semper Fidelis (with drums.)
- 139 After the Ball
- 126 Bocaccio March
- 144 Liberty Bell March
- 140 Washington Post March
- 142 Admirals Favorite March
- 4 Friedensklänge

### INSTRUMENTAL QUARTETTE.

- 807 Die Kapelle

### BARYTONE.

- 163 When Summer Comes Again
- 182 Sweetheart Nell, and I
- 175 Old Kentucky Home
- 191 Black Knight Templars
- 185 Throw Him Down McCloskey
- 183 Oh, Promise Me
- 176 Love Me Little, Love Me Long
- 150 Oh, Fair Art Thou
- 155 Anchored
- 170 Mamie Come Kiss your Honey Boy
- 166 Then You'll Remember Me
- 160 The Maiden and the Lamb
- 165 Red, White and Blue
- 169 The Coon That Got the Shake
- 157 Tramp, Tramp, Tramp

### CLARINET.

- 300 Allegro (Verdi)

### CORNET.

- 200 Polka, Elegant
- 205 Call Me Thy Own
- 206 Emily Polka
- 202 U.S. Military Signals
- 203 Welcome, Pretty Primrose

### DRUM AND FIFE.

- 700 Biddy Oates

### TROMBONE.

- 75 In The Deep Cellar

### PIANO.

- 256 Geisterfunken

### CHILDRENS' SONGS.

- 752 Duett: Every Day will be Sunday Bye and Bye
- 753 Duett: I Know a Bank, Etc.

### INDIAN SONGS.

- 51 Three Melodies from the Gost Dance
- 52 Three Melodies from the Gost Dance

### SOPRANO.

- 359 Oh, Promise Me
- 352 Oh, How Delightful
- 355 Star Spangled Banner

### RECITATION.

- 602 Marc Anthony's Curse  
A Lesson in Elocution.

### VOCAL QUARTETTE.

- 851 Blind Tom (negro shout)

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Between 25 and 50 New Pieces will be added every month.

The first catalog of the United States Gramophone Co. The discs ("plates") sold for 60¢ each, about half of what a cylinder recording cost at the time.

Dissatisfied with the slow progress on the financial front, Berliner dissolved American Gramophone in 1893 and set up the United States Gramophone Company, which gave him greater personal control. It wasn't until the end of 1894 that the company offered the first fifty discs to the American public. They were thin, flexible discs made of celluloid, with an engraved label and handwritten titles. The artists were rarely mentioned; at this early stage, no performers of note were recording. The 7-inch-diameter discs sold for 60¢ each (about half of what a cylinder recording cost at the time) and were accompanied by a paper sleeve containing the lyrics of the selection.

Quite a variety of music was repre-

sented, including band pieces, vocal selections, instrumental solos, and even a recitation. Among the most interesting items on this first list are two series of melodies from the "Gost [*sic*] Dance" of the Indians. If any examples of these recordings survive, they are certainly historical artifacts of the greatest importance.

The discs themselves enjoyed many advantages over their cylindrical counterparts. They were virtually unbreakable, as opposed to the extremely fragile wax cylinder, which could easily be broken just in placing it on or removing it from the phonograph. They needed far less storage space; nearly fifty discs could be stacked in the space required by only five cylinders. They could be duplicated easily, and between 500 and 1,000 pressings could be produced from a single master recording. The early discs were also more consistent in quality than the cylinders, which had to be either an original recording or a copy recorded from an original, with the resultant loss in volume and fidelity. Finally, the discs were louder, even though they also produced a considerable amount of surface noise.

Despite those advantages, the disc did not immediately replace the cylinder as the format of choice for the early enthusiasts of recorded music. For one thing, the cylinder business had a five-year head start. Sales agents were in place, a supply of phonographs and cylinders was in the field, and thousands of people had listened to their favorite band music or popular songs on cylinders in the phonograph parlors. While hardly yet an institution, the cylinder was America's image of recorded music.

The cylinders' most important advantage over the discs, however, was the tremendous superiority of the machines available to play them. The cylinders were played on a device called the *phonograph*, while the discs were reproduced on a *gramophone*. The gramophone was a primitive de-



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CIRCLE NO. 7 ON READER SERVICE CARD

vice that relied on a hand-powered crank to propel the turntable. Not only was a listener required to sit next to the machine and turn the crank while the record played, but the near impossibility of maintaining a constant rate of revolution caused annoying pitch fluctuations. In contrast, the phonograph of the early 1890's was electrically powered and featured a mechanical governor to maintain a constant rate of speed. By 1896, spring-powered motors would be employed in both machines, but until then the disc gramophone would appear to be a mere novelty compared with the refined cylinder phonograph.

Because of a shortage of capital, a lack of promotion, and the crude nature of the gramophone, disc sales for the first two years were negligible. In early 1895, Berliner substituted a hard rubber material for the soft celluloid. The resulting pressings were thicker and more durable, but prone to excessive noise and surface bubbles that often caused the needle to jump out of the groove.

In late October of that year, after receiving much-needed financing from a Philadelphia-based syndicate, William Jones formed the Berliner Gramophone Company. He opened a sales office in Philadelphia, but without a spring motor and a major promotional effort, the disc was going nowhere fast. Fortunately for Berliner and his investors, both came the following year.

**T**he task of designing and manufacturing an inexpensive and reliable spring motor fell to Eldridge R. Johnson, a machinist from Camden, New Jersey. Johnson quickly became intrigued with the gramophone, and after making improvements to the reproducer (stylus), he began assembling entire machines in his shop. Johnson's spring-powered "Improved Gramophone" finally provided Berliner with a viable product that could compete with the cylinder

**BY 1900, DISC RECORDS  
WERE STRONG  
RIVALS OF THE FAMILIAR  
CYLINDERS.**



**Listen**  
A young girl beckons the public to listen to the gramophone in this 1901 advertisement. The spring-powered machine in the ad had already come a long way from Berliner's original.

machines sold by Edison and Columbia. It is, incidentally, this machine that is shown in Francis Barraud's famous painting of the fox terrier "Nipper" listening to "His Master's Voice."

Marketing and promotion were assumed by Frank Seaman, a territorial sales agent for Berliner in New York State. By mid-1896, Seaman was aiming for national distribution with his formation of the National Gramophone Company. In the fall of 1896, he negotiated an agreement with the Berliner Gramophone Company whereby he would become the exclusive sales agent of machines and recordings for the entire United States outside the Washington, D.C., area.

Seaman began advertising extensively in leading national publications

for the Christmas season, and the sales of spring-powered gramophones and disc records soared. The recorded repertory had expanded tremendously as well, and hundreds of different titles had become available for purchase.

**D**uring the next three years, Berliner's difficulties would shift from those of developing a product to those of a legal nature. The rapidly expanding disc business was attracting competitors, and by 1898 both Berliner and the American Graphophone Company, makers of the Columbia cylinders and machines, were in litigation over the control of key patents. Further, Frank Seaman had grown dissatisfied with his supply arrangement with Berliner and Johnson. He believed that he could manufacture an equivalent gramophone for far less than he was being charged, so he set up the Universal Talking Machine Company to build and sell the Zonophone. A torrent of lawsuits followed, and by mid-1900 Seaman had defeated Berliner in the courts, winning an injunction barring the inventor from selling gramophones in the United States.

The story then turns to Eldridge R. Johnson and his almost immediate formation of the Victor Talking Machine Company. Johnson aggressively took on both Seaman and American Graphophone in the courts, and won. In the ensuing quarter century, he would build the Victor organization into the largest vendor of recorded music in the world, and make the disc record a format that would last nearly one hundred years. □

**Michael W. Sherman's book, The Collector's Guide to Victor Records, covers the history of Berliner and Victor records from 1894 to 1958 (available from Monarch Record Enterprises, 100 Highland Park Village, Dallas, TX 75205-2788 for \$24.95 plus \$2 for shipping and handling).**



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# SO UN D

# SENSATIONS

BY DAVID RANADA



A year and a half ago, I was asked by Ted Anspacher, then director of exhibits for the New York Hall of Science, an interactive science museum on the grounds of the 1964 World's Fair in Queens, to help with the museum's new permanent exhibition, "SoundSensations—The Inside Story of Audio." Museum personnel designed and built the exhibit with major funding from the National Science Foundation and AT&T. My contribution was the harder-than-it-looks writing of the explanatory signage. I also donated various artifacts for an audio-history display (1), including an early open-reel analog tape, a promotional mockup of the first CD, a MiniDisc, and a Digital Compact Cassette.

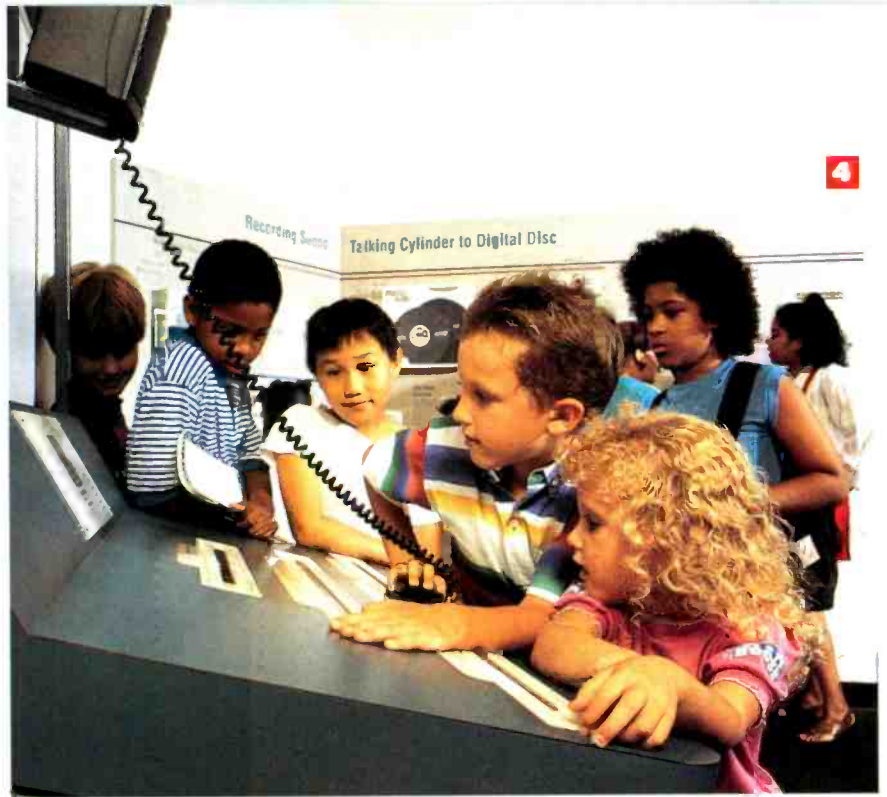
The exhibit includes twenty ingenious displays highlighting various aspects of sound-reproduction technology. It starts with the most basic sound transmission chain, a speaking tube (8), and goes right through to advanced digital signal processing for reverb and sound transformation (5, 9). Along the way, kids of all ages can experiment with—to use grown-up terminology—real-time spectrum analysis of their voices (2) and nonlinear editing and composing techniques using a desktop computer (3), and they can learn about digital audio through an animated computer display (6).

One popular display gives hands-on experience with moving a tape head across magnetic tapes recorded at various speeds (4). It takes a steady hand—free of wow or flutter—to get anything intelligible out of the recordings. Another informative display allows visitors to independently switch on the three drivers in a three-way speaker to illustrate how the audio band is split for better reproduction (7).

The exhibit contains much more than can be covered here, but you can get a taste of it by calling 718-MY-WORDS (699-6737) for an over-the-phone experiment with digital transformation of your voice (the call is not toll-free, though, so don't get carried away). For more information about SoundSensations or the other fascinating exhibits at the New York Hall of Science, call 718-699-0005.







### Inside Story of Audio

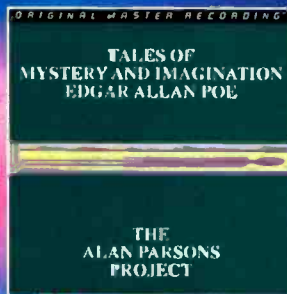
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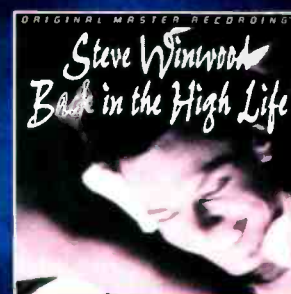
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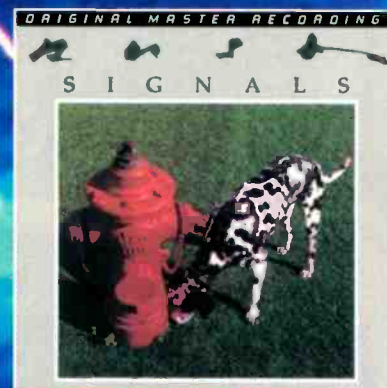
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# BEST OF THE MONTH REVIEWS

STEREO REVIEW'S  
CRITICS CHOOSE  
THE OUTSTANDING  
CURRENT RELEASES

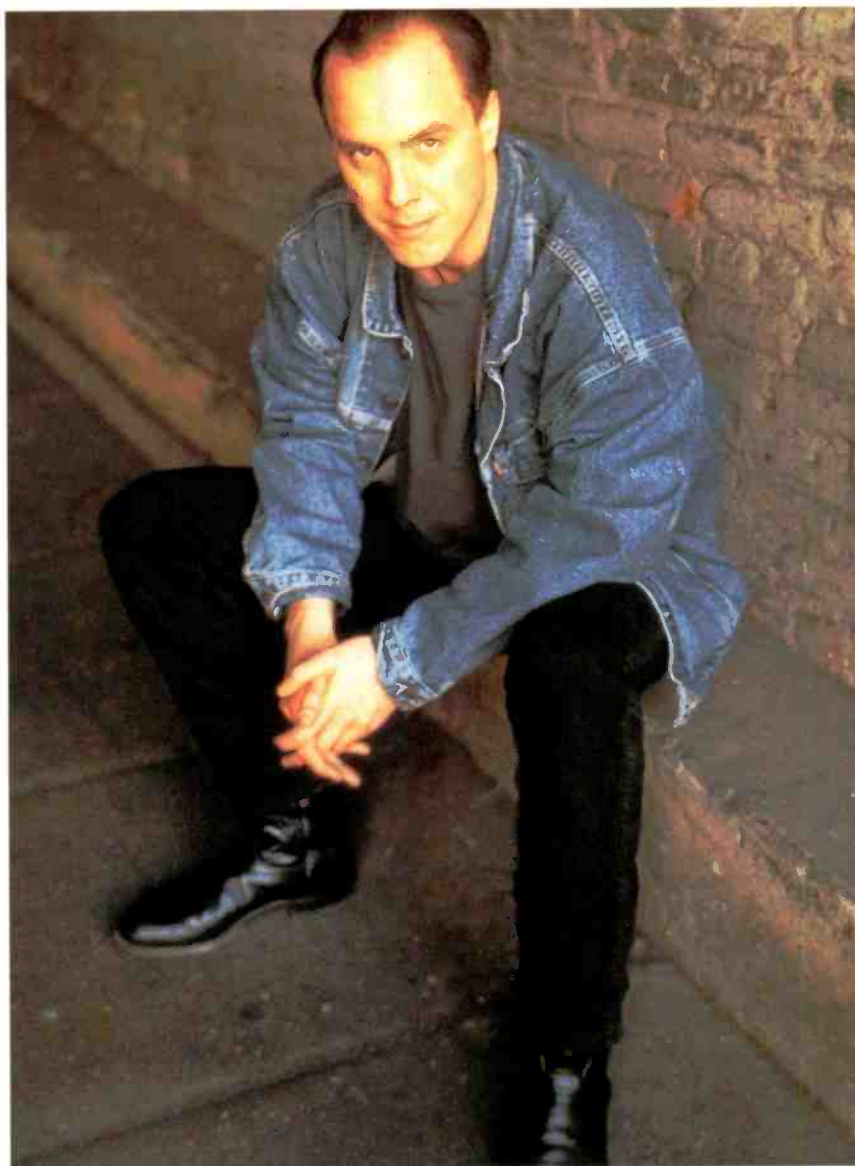
## Freedy Johnston: Perfect World, Perfect Album?

It was Elton John who sang *Sad Songs Say So Much*, but these days it's Freedy Johnston—a cult singer/songwriter making his mainstream move—who brings that alliterative title to life most vividly. On his new album, "This Perfect World," Johnston's gallery of characters includes frustrated dreamers, haunted victims, and ordinary folks taking a rueful inventory of their lives. His milieu is New York, and more than a few songs trace the disappointments encountered by a man who's at long last made a great escape to the big city only to find himself feeling more like an alienated outsider than ever.

Johnston's lyrics possess a writerly quality rare in popular music in this post-literate age. He is, moreover, a nimble melodist, composing in a minor-keyed pop vein and striking, in the artful conjunction of words and music, a mother lode of pure emotion. Now, for his major-label debut, Johnston's presentation has achieved a new level of accessibility courtesy of a surprisingly nongrunge production by Butch Vig (Nirvana, Smashing Pumpkins). The surface of the music is tamer than on Johnston's earlier records, the rough edges smoothed and polished so as not to call attention away from his voice, which itself has been reworked into a far less quirky, though no less expressive, vehicle.

In truth, Johnston's never plumbed emotional duress as deeply as he does here in songs like *Evie's Tears* and *Evie's Garden*, whose protagonist is haunted by the memory of some past violation, and the title tune, in which a dying parent goes to see an abandoned daughter, petitioning her for clemency as a lonely cello groans with the heartbreaking line, "I still deserve to say goodbye no matter what I've done." *Evie's Tears* is a masterly example of Johnston's ability to match touching, troubling lyrics with beguiling melodies. The song's bridge, childlike in its simplicity (like a lullabye), is as tuneful and tender a moment as I've ever heard.

Music this organic and rich recalls such forebears of folk-rock songcraft as the Beau Brummels (the countryish lilt of *Gone Like the Water* evokes the autumnal



aura of the Brummels' unsung classic *Turn Around*) and Buffalo Springfield (*Disappointed Man* could pass for one of Neil Young's more ambitious compositions with that group). That's pretty impressive company to be keeping, but Freedy Johnston belongs there. He's that good. *Parke Puterbaugh*

### FREEDY JOHNSTON

#### *This Perfect World*

*Bad Reputation; Evie's Tears; Can't Sink This Town; This Perfect World; Cold Again; Two Lovers Stop; Across the Avenue; Gone Like the Water; Delores; Evie's Garden; Disappointed Man; I Can Hear the Laugh*  
ELEKTRA 61655 (40 min)

# BEST OF THE MONTH REVIEWS

## Glowing Dvorak and Lalo from Christian Tetzlaff and the Czech Philharmonic



**T**he young German violinist Christian Tetzlaff has aroused quite a wave of enthusiasm among his fellow musicians in the last few years, and no wonder. In addition to the technical security we expect nowadays from young virtuosos, Tetzlaff, now twenty-eight, brings to his musicmaking an all too rare combination of imaginativeness in his repertory choices, great seriousness in his respect for the material he embraces, and a no less striking sense of joy in bringing it to life. His new disc of the Dvorak Violin Concerto and Lalo's *Symphonie Espagnole*, with the Czech Philharmonic Orchestra under Libor Pesek, goes right to the top of the list.

The combination of the Dvorak and the Lalo is itself a fairly imaginative one, or at least one I have not encountered before. The two works, however, are not only contemporaneous but were really conceived on the same basic principles of musical pleasure: ingratiating tunes, rhythms derived from folk music, a range of colors effectively exploiting the resources of the orchestra as well as the solo instrument. More to the point, Tet-

zloff's glowing performances refresh both works, not by imposing new or revised attitudes on them but wholly within their own well-defined character.

In point of fact, the Dvorak has not always been among the most beloved of violin concertos. It seems to require a very special level of sympathy, such as that shown by Johanna Martzy in the unforgettable recording she made with Ferenc Fricsay some forty years ago. Martzy and Fricsay responded to the concerto on an inspired level of unrestrained conviction expressed with the most genuine spontaneity, yet guided at every step of the way by an unfailing sense of taste and proportion; Tetzlaff and Pesek strike me as the first team to have matched their achievement. If any recording could help the Dvorak Violin Concerto become as popular as, say, the Tchaikovsky, this is surely the one.

The Lalo, of course, has been a universal favorite for years, but it can still expand its field of admirers with the kind of elegant yet uncontrived performance it receives here. All five movements are relished to the full, and the sound itself, as in the Dvorak, is downright gorgeous.

*Richard Freed*

**DVORAK:** Violin Concerto

**LALO:** *Symphonie Espagnole*

Tetzlaff: Czech Philharmonic, Pesek cond.

VIRGIN 45022 (63 min)

## The Uncompromising Patty Loveless

**I**n a recent Journal of Country Music poll of country-music executives and producers, Patty Loveless showed up on the list of "most underrated country stars." After eight years of making records—all of them good—Loveless is just now beginning to reap the recognition she deserves. The reasons for the long delay are myriad, among them her habit of letting her music speak for her rather than playing the all-important record-biz political games. But never has she given less than her all to her records.

A case in point: "When Fallen Angels Fly." Titled after the Billy Joe Shaver song about recognizing and forgiving human weaknesses and foibles, her new album is yet another in a series of Loveless records that focus more on making deep, emotional connections with an audience than on topping the radio playlists. To be sure, there are concessions to commer-



ciality on all of her records; here, it's the rockabilly rave-up, *I Try to Think About Elvis*, a novelty tune in which a love-stricken woman tries desperately to take her mind off a new man. But on the whole, Loveless and her husband/producer, Emory Gordy, Jr. (he's also produced records by Bill Monroe, Jimmie Dale Gilmore, and George Jones), have stocked the album with exceptionally well-crafted songs that offer hope, healing, and dignity to the spiritually and romantically disenfranchised.

Steeped in the traditional country and bluegrass of her rural Kentucky upbringing (and holding close to her hard mountain accent), Loveless is the only commercially viable woman in today's country music with one foot staunchly in the old-time sounds and the other in contemporary thought. Here, she brings a decidedly bluegrass flavor to Tony Arata's A



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# BEST OF THE MONTH REVIEWS

*Handful of Dust*, using bold mandolin, fluid fiddle, and goosebumpy-good high-vocal harmony to underscore the song's neo-gospel message—that human beings are only a collection of elements until imbued with the spirit of love. Just as easily, she switches gears for a convincing delivery of the Rolling Stones-like rocker, *Old Weakness (Coming On Strong)*, a song about resisting the temptation to renew a troubled relationship.

But aside from nearly faultless taste in material and a dedication to finding uplifting songs, Loveless distinguishes herself from the current crop of Nashville females in her ability to seem caught up in the exact moment of truth and troubled decision. Where, say, a Reba McEntire often appears to be acting such scenes with nearly laughable melodrama, Loveless conveys a fist-to-the-gut realism and power, at times delivering almost palpable pain (check out *Here I Am*, in which a man finds only tortured memory at the bottom of his glass).

From inhabiting both characters in *You Don't Even Know Who I Am*, Gretchen Peters's remarkable song about married strangers and the slow dissolution of their union, to administering emotional salve in the hushed ballad *Over My Shoulder*, a near-hymn to self-reliance and faith, Loveless proves she's not only underrated

in an industry that values celebrity over artistry. She's in a league of her own.

*Alanna Nash*

## PATTY LOVELESS

### When Fallen Angels Fly

*A Handful of Dust; Halfway Down: When the Fallen Angels Fly; You Don't Even Know Who I Am; Feelin' Good About Feelin' Bad; Here I Am; I Try to Think About Elvis; Ships; Old Weakness (Coming On Strong); Over My Shoulder*  
EPIC 64188 (41 min)

## Kyung-Wha Chung's Brilliant Bartok

In her new EMI recording of Bartok's masterly Second Violin Concerto, Kyung-Wha Chung digs deeply into the essence of this music from the composer's peak creative period. Like the Brahms and Beethoven concertos, the Bartok Second demands collaboration on the very highest level from the orchestra and conductor, and Chung certainly has that from Simon Rattle and the City of Birmingham Symphony. Soloist and orchestra are equal partners in the performance as well as in the engineering balances.

Chung's playing is aggressive and fiery throughout the elaborate opening movement and in the frequent dialogue episodes, and Rattle gives as good as he gets. The central movement with its six variations has both delicacy and passion, reaching a peak in the skittery solo work and marvelously delicate percussion textures of the two final variations. The finale, a large-scale variation of the first movement, gets a no-holds-barred treatment, with Chung at her most brilliant.

Besides the concerto the CD includes Bartok's virtuosic and far from negligible Violin Rhapsodies Nos. 1 and 2. Again the orchestral role is formidable, calling in No. 1 for the added coloration of the cimbalom, the Hungarian counterpart of the hammered dulcimer. The performances are as full-out as in the concerto, and the sonics throughout are stunningly clear.

*David Hall*

### BARTOK: Violin Concerto No. 2; Violin Rhapsodies Nos. 1 and 2

Kyung-Wha Chung; City of Birmingham Symphony, Rattle cond.  
EMI 54211 (59 min)



**Chung: delicacy and passion**



## POPULAR

• **THE CRAMPS: A Date with Elvis.** RESTLESS/VENGEANCE 72765. Psychotic rockabilly stylings from 1986 (previously on Enigma), with bonus studio tracks.

• **THE BOBBY FULLER FOUR: Live at PJ's Plus!** DEL-FI 13142. A 1965 concert set by the artist Marshall Crenshaw once called "my favorite rock star killed by gangsters," previously available only in the UK.

• **THE MONKEES: Changes.** RHINO 71798. From 1970, the Pre-Fab Four's swansong album, fleshed out with three bonus tracks including their last (1971) single, *Oh My My*.

• **THE MOVE: Great Move—The Best of the Move.** EMI 96060. Great singles tracks (*Tonight, Do Ya*) plus the whole 1971 "Message from the Country" album by the underrated progressive British pop band that gave the world Roy Wood and Jeff Lynne.

## CLASSICAL

• **COME AND TRIP IT.** The Federal Music Society: Dick Hyman and His Dance Orchestra; Gerard Schwarz and His Dance Orchestra. NEW WORLD 80293. Old American dance music (1780's to 1920's) in lively performances first released in 1978.

• **GERSHWIN PLAYS GERSHWIN.** PEARL 9483 (two CD's). From the 1920's and 1930's, all of George Gershwin's commercial piano recordings, both solo and with help from Paul Whiteman and His Orchestra, Fred and Adèle Astaire, or Lawrence Tibbett and Helen Jepson (in selections from *Porgy and Bess*).

• **PAUL PARAY CONDUCTS DANCES OF DEATH.** MERCURY 434 336. A program verging on the macabre, from Liszt's *Mephisto Waltz* to the "Dance of the Seven Veils" from Strauss's *Salome*, with the Detroit Symphony in late-1950's "Living Presence" sound.





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# POPULAR MUSIC

**NEW RECORDINGS REVIEWED**  
**BY CHRIS ALBERTSON,**  
**FRANCIS DAVIS, PHYLL GARLAND,**  
**RON GIVENS, ROY HEMMING,**  
**ALANNA NASH,**  
**PARKE PUTERBAUGH, AND**  
**STEVE SIMELS**

## ARRESTED DEVELOPMENT

**Zingalamaduni**

CHRYSALIS 29224 (54 min)

**Performance: Preachy keen**

**Recording: Get the fat-grooved vinyl**

“Zingalamaduni” is Swahili for “beehive of culture,” and that’s just what you get on this preachment-cum-party. The album is loosely organized around the concept that this is a radio broadcast coming at you over WMFW (“We Must Fight & Win”). For those who find gangsta rap too sexist and violent, wallowing in self-defeating stereotypes, Arrested Development offers a no-less-funky alternative—one propounded upon notions of freedom, dignity, and self-actualization. And while the concerns of leader Speech and company are directed at African-Americans, the message is inclusive (*United Minds, United Front*) and the music can be enjoyed by all.

Speech speechifies throughout, tending toward pedantic sloganeering on occasion (“Power to the people, y’all”) but more often cutting to the heart of the matter with common sense and uncommon righteousness. Activism is urged (*Shell, Pride*), good feelings are shared (*In the Sunshine, Warm Sentiments*), and prayers are offered (*Ease My Mind, Praisin’ U*). *Ache’n for Acres* makes a serious point about land ownership in under three fast-talking minutes; the issue recurs in the renter-as-chattel broadside *Mister Landlord*. The whole album has a laid-back, jazzy aura in that the songs are as conversational as they are constructed; it really does have the feel of a radio broad-

**Eddie Brickell: Baby’s got soul?**



MICHAEL HALLSAND/DGC

## BUCKWHEAT SINGS!



Hunks Play the Original Little Rascals Music” (Koch 8702). It seems Dutch musician Piet Schreuders reconstructed the soundtrack tunes from the Rascals’ Thirties Hal Roach comedy shorts—the work of heretofore unsung composer Leroy Shields—and then recorded them with a small jazz band and a pair of overhead mikes. The results? Absolutely charming stuff that transcends nostalgia. Shields was a major American melodist, and I doubt a more enjoyably evocative CD will be released any time soon. S.S.

Well, no, he doesn’t, actually, but here’s something almost as good—“The Beau

cast whose dual purpose is entertainment and education. Hope is such a rare commodity in these troubled times that “Zingalamaduni” is a welcome arrival on grounds of positivity alone; the fact that AD’s outlook is bolstered by both an awareness of history and a vision of the future only adds to their appeal. P.P.

## EDIE BRICKELL

**Picture Perfect Morning**

GEFFEN 24715 (41 min)

**Performance: Glossy**

**Recording: Very good**

Unleashed from the New Bohemians, baby-voiced Edie Brickell comes out more soulful and seductive on this first solo album. Balancing the waif-like persona she cultivated in Dallas with husband Paul Simon and Roy Hallee’s R&B-jazz-pop backing, Brickell will doubtless inspire “I’ll follow you anywhere” fantasies with her breathy portraits of would-be lovers riding around in trashed cars. On *Good Times*, she evokes Smokey Robinson (and sometimes, Al Green) in her paean to light-headed falling in love. But guest Barry White’s recitation here amounts to little more than oral diddling, and in the end, Brickell’s

songs—mostly about not getting what you want or need—aren’t so much songs as atmospheric canvases for the players to color in. Think of her as a less exotic, Texas-styled Sade. And on vacation, at that. A.N.

## JEFF BUCKLEY

**Grace**

COLUMBIA 57528 (52 min)

**Performance: Otherworldly**

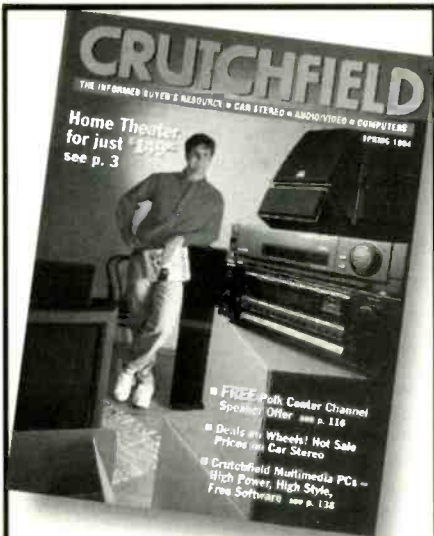
**Recording: Good**

“Sometimes a man gets carried away,” Jeff Buckley sings in *Lover, You Should’ve Come Over*, and though taken out of context, that line could apply to Buckley himself on his full-length debut. Singing like a man suspended between heaven and earth, yearning for transcendence while shackled to the physical world, he displays a remarkable gift for expressing the inexpressible. In this sense he is recognizably the son of his father, the late Tim Buckley. But Jeff is entirely a self-made artist, without any guidance from Buckley père, whom he barely knew. Indeed, he carries his restless creativity into areas as ex-



treme as any that Tim Buckley explored—and far earlier in his career, to boot. His songs are occasionally unwieldy (*Corpus Christie Carol, Lilac Wine*) but more often brilliant in their evocation of mystery, ecstasy, and the Sisyphus-like frustration of a soul determined to push over the hill to the next horizon.

*Mojo Pin*, reprised from last year’s live four-song EP teaser, remains Buckley’s crowning achievement, and it’s rendered even more dynamic here with the addition of a rhythm section. Close on its heels is the title track, another thorny, twisted vine of a performance that finds the artist trying to rise above earthbound agonies to catch a glimpse of the light. Playing broken chords and singing distempered melodies that resolve into recognizable handholds of songcraft, Buckley avails himself of an almost



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operatic chiaroscuro of light and shadow. The adventure reaches a feverish peak in the adrenaline outpouring of *Eternal Life*, in which he shouts and slashes with a reckless energy and grungy dissonance worthy of Seattle's finest. Yet his goal is beyond that scene, and "Grace" must be heard to be believed. Watching Buckley develop from this audacious starting point will be a pleasure, as the sky's the limit for a talent of this magnitude. *P.P.*

## DAVE EDMUNDS

### Plugged In

PYRAMID/RHINO 71770 (43 min)

Performance: Exhilarating  
Recording: Fine

The title of Dave Edmunds's new solo effort (apart from the obvious MTV jibe) refers to the fact that for the first time in nearly twenty-five years, Edmunds has made an album the way he did in the beginning—as a one-man show, playing and singing every note by himself. The irony, of course, is that despite incredible strides in recording technology (a copious list of hi-tech equipment documented in the CD

## The Joy of Judy-ism

For a great singer, Judy Garland made more unworthy recordings than anybody short of Elvis, and here's a revelation—some of them were right at the beginning of her career. Doubt it? Check out "Judy Garland: The Complete Decca Masters (Plus)," a new four-CD set (MCA 11059) of everything Garland recorded for Decca between 1936 and 1947. Along with some familiar gems



are standard takes on classics from *The Wizard of Oz*, *Meet Me in St. Louis*, and *The Harvey Girls*, plus scads of justly forgotten tunes that never made it to the charts.

This well-remastered ninety-song collection also

proves that Garland could sound great even when saddled with pedestrian arrangements and material. From the bubbly *Swing Mister Charlie* (recorded at age fourteen) to her wryly delicious duets with Bing Crosby (*Connecticut*) eleven years later, there are enough moments here when she can still knock more than your socks off. *R.H.*



credits), Edmunds's music still sounds exactly as it always has since the late Sixties—masses of trebly, nasal guitars and vocals set to perfect (albeit retro) beats in the service of basic but witty formalist songwriting. In any case, "Plugged In" is vintage Edmunds—a little rockabilly, a little blues, a little Chuck Berry-ish rock, an occasional genre parody (here it's the Brian Wilson pastiche *Beach Boy Blood (In My Veins)*)—and as usual it runs the gamut from entertaining to brilliant. And for a change the best is saved for last: a hilariously over-the-top remake of Edmunds's first hit (*Sabre Dance 94*) that the guys who used to spin plates on *The Ed Sullivan Show* really should have lived to hear. Let us not mince words—this guy's so good he ought to be nationalized. *S.S.*

## JULIA FORDHAM

### Falling Forward

VIRGIN 39559 (50 min)

Performance: Whispers to histrionics  
Recording: Very good

On her fourth album, English chanteuse Julia Fordham continues in the vein of her earlier work, crafting feathery, jazzy pop out of seemingly thin air. This time out, she's produced by Larry Klein, who lends his expertise with the kind of layered female vocal washes that characterize the work of his wife, Joni Mitchell. As a writer, Fordham is concerned with nothing but romance, but from an almost intellectual vantage point. Melodically, she can be tedious, her lyrics sometimes border on cliché ("I know why the caged bird sings / And it's not what you're thinking"), and as a singer, she is like a muse riding an air wave—there seems to be nowhere she can't go, which is not always a good thing. At times, her expressive contralto turns too strident in an attempt to convey intense emotion, single notes and phrases blending in a sort of vomituous rush. Most of the time, however, Fordham creates an ebullient atmosphere of hope, exaltation, and beauty. If she walks a thin line between control and excess, well, don't we all? *A.N.*

## NANCI GRIFFITH

### Flyer

ELEKTRA 61681 (56 min)

Performance: Stretching  
Recording: Good

Last year Nanci Griffith, who once described herself as a "folkabilly," won a Grammy for "Other Voices, Other Rooms," an album that ripped off Truman Capote for



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## Country Music with a Red Ribbon

**A**s the entertainment of small-town America, country is by far the most conservative of all popular-music forms. But because it also reflects the lives of the eternally troubled Everyman, country is one of the most realistic pop genres, rarely shying away from any difficult topic, from cheating to drinking to unwed mothers. Yet two still-powerful taboos—mainline drug use and homosexuality—have kept country music from dealing with AIDS until recently. The change is signaled, in part, by Reba McEntire's recording of *She Thinks His Name Was John*, which addresses heterosexual transmission of the disease, and now the release of "Red Hot + Country," the long-awaited compilation album featuring many of Nashville's biggest stars. Sales will benefit organizations involved in AIDS treatment and research.

A terrifically diverse collection of music, "Red Hot + Country" sometimes finds unlikely performers joining together to revamp classic songs: Brooks and Dunn rock up Johnny Cash's *Folsom Prison Blues*, for example, with Cash dropping by to lend an unearthly recitation; Suzy Boggus, Alison Krauss, and project coordinator Kathy Mattea support Crosby, Stills & Nash on *Teach Your Children*; and Mattea and Jackson Browne duet on *Rock Me on the Water*.

But most of the time the performers simply pay solo tribute to the writers, artists, and music that most influenced them and helped them shape their styles, which brings some surprises: Dolly Parton does a hopped-up rendition of George Jones's *You've Gotta Be My Baby*, and Sammy Kershaw reaches beyond his country roots into the James Taylor troubadour tradition for a sobering and affecting *Fire and Rain*.

Several songs, such as Bob Dylan's *Forever Young*, interpreted here by Johnny Cash, *The T.B. Is Whipping Me*, the old Ernest Tubb tribute to Jimmie



Rodgers as performed by Wilco with Syd Straw, and Patty Loveless's *When I Reach the Place I'm Going*, take on almost entirely new poignancy in the light of AIDS. Only Mary-Chapin Carpenter chose to deal directly with the disease, recording her longtime friend John Jennings's extraordi-

nary *Willie Short*, a song told from the point of view of a man with AIDS. Stark and haunting—its melody has a nearly Elizabethan quality—the song never goes overboard lyrically, drawing its power instead from understatement: "It's hard, mister, dying by inches / Of something I cannot control."

In fact, the biggest problem with what is otherwise a splendid album is that many of the performers seemed to forget why they're here, performing material that simply does not fit the subject. Not every song needed to address the issue head-on—Nanci Griffith and Jimmy Webb demonstrate that beautifully on Webb's *If These Old Walls Could Speak*, which captures a mood of reflection and summing up a life lived. But *Close Up the Honky Tonks* (Radney Foster) and *Crazy* (Jimmie Dale Gilmore and Willie Nelson) just seem goofily out of place.

That said, there's a wonderful spirit of union and camaraderie here, a selfless coming together for a cause higher than ego and career advancement. It often makes for memorable musical moments, and a true contribution to country-music history. Better still, it underscores the best in a format that usually promotes reckless, unchecked behavior over the betterment of humanity. If this project stimulates any awareness of spiritual connectedness—as well as awareness of AIDS in general—then here's to an album of near miracles.

Alanna Nash

**RED HOT + COUNTRY**  
MERCURY 314 522 639 (67 min)

its title and borrowed from every successful songwriter of the genre since the Beginning of Time. Well, that's no surprise. The Grammy voters, who on the whole don't know spit about folk and country, are easy marks for collections like that. And if you loved Griffith's earlier, simpler, Texas-inspired work (as I did) then you see her recent work as either more mature and passionate or increasingly arty, humorless, pompous, precious, and preachy (guess which side I come down on).

On this collection of new original songs (only one, Julie Gold's archly grand *Southbound Train*, comes from an outside source), Griffith drops some of her endlessly annoying mannerisms and gives some of her posturing a rest. To be sure, she is still A Very Important Artist, documenting the songs of her travels, which couldn't possibly be as interesting as yours or mine. But aside from *Nobody's Angel*, Griffith holds back the narcissism to make room for guests Adam Clayton (U2), Peter Buck (REM), Adam Duritz (Counting Crows), the Indigo Girls, the Chieftains, NRBQ's Al Anderson, the Bodeans, and Mark Knopfler.

In the end, though, too many of these songs, presented in often busy arrangements, plod along at midtempo, and Griffith's knack for memorable, poignant images doesn't surface very often. "Flyer" is more an exercise in record-making than in making music, a melancholy voyage into the Hallmark Greeting Card school of songwriting. A.N.

### TISH HINOJOSA Destiny's Gate

WARNER BROS. 45566 (43 min)

**Performance:** Falls between cracks  
**Recording:** Very good

**I**n 1992, Mex-Tex singer-songwriter Tish Hinojosa recorded an arresting album for Rounder ("Culture Swing") that blended American folk and country and Spanish traditional music in a meaningful way. Both her sweet, soaring melodies and sparse instrumentation bucked the trends of commercial radio, while her themes (migrant workers, pesticides, the way the Rio Grande defines the lives of Mexicans, etc.), went deeper than most contemporary country fare.

On the strength of that album, Warner Bros. signed Hinojosa, and now comes her major-label debut, which largely waters down her subject matter and dilutes her folk-country approach with not-so-subtle pop accents. While she continues to record both in English and in Spanish and to hit upon at least one social theme (*Love of Mine*, in which a woman works as a domestic so her child won't have to), "Destiny's Gate" presents Hinojosa with one hand tied behind her back: the album is neither folk nor country, neither emotionally involving nor intellectually satisfying. And when she does her rockabilly rave-up, *I'm Not Through Loving You Yet*, you can't help but wish she'd really cut loose. Enjoy "Destiny's Gate" for the sheer pleasure of Hinojosa's modest, tremulous soprano—but find the Rounder record, pronto. A.N.



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\* Quoted excerpted from a review of the SRS (●) technology from the April 1992 issue of *Audio Magazine*. The Vivid 3D sound enhancement system won the Retail Vision "Best Product" award in May 1994, and the Innovations award from the International Consumer Electronics Show in June 1994. Vivid 3D systems incorporate SRS (●) technology which won the "Ultimate" award from *Game Players* magazine in July 1993.  
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## Chants Don't Suck



### INXS

**Full Moon, Dirty Hearts**  
ATLANTIC 82541 (40 min)

**Performance: Taut**  
**Recording: Good**

**A**fter ten albums there's still not an ounce of fat on INXS. Not a wasted note, not one superfluous flourish. "Full Moon, Dirty Hearts" is all bone and sinew, a lean rock album of almost classic dimensions (twelve songs, 40 minutes) that doesn't labor over its points but aims squarely for the bull's-eye. Combining the firepower of the Stones at their most taut and brutal with the edgy, dark-side polemics of the Doors, and setting this boldly outlined alchemy to an elemental dance-club beat, INXS makes music that mirrors the mood of the age—agile, troubled, determined, angry, uncertain of a final destination but speeding there on a steady course just the same.

Given the music's spartan density, it's hard to imagine someone else cutting in from outside. Guest Chrissie Hynde merely shadows Michael Hutchence's vocal on the brooding title track. It takes a genius like



INXS: a black-and-white newsreel

**S**o, dude, you say you got that best-selling "Chant" album on Angel and then noticed it didn't exactly, uh, rock? Well then, run out and buy "Chantmania" (Rhino 76025) by the Benzadrine Monks of Santo Domonica (formerly faux-Fifties rock satirists Big Daddy), featuring plainsong versions of pop classics like R.E.M.'s *Losing My Religion* and the theme from *The Monkees*. And watch for the Brothers' cable special—a Monkumentary, natch—in which, we've heard, the group gets career advice from no less a sage than Mel Brooks's 2,000 Year Old Man. **S.S.**

Ray Charles to shoehorn his way into INXS's contracting universe. In *Please (You Got It . . .)*, he and Hutchence bring out their mutual best by virtue of containment; each syllable stands for something, as does what's implied in the pregnant pauses between words. But it's when left on their own, six men making a less-is-more racket that is ugly, beautiful, and all things in between, that INXS really shines. Delivered with compacted urgency, thorny riffs and rhythms bleeding the songs one into another, "Full Moon, Dirty Hearts" is a black-and-white newsreel for the ears that professes hope from within the midst of a firestorm. **P.P.**

### JELLY ROLL KINGS

**Rockin' the Juke Joint Down**

EARWIG 4901 (57 min)

**Performance: Genuine**  
**Recording: Good**

**Y**ou can find the blues in the most unlikely places these days, but there is an area of this country where the genuine article still thrives. A river (the Mississippi) runs through it, and decades of rich musical tradition has left the countryside steeped in the sounds that gave immortality to the likes of Bessie Smith, Ma Rainey, Leroy Carr, Robert Johnson, and Blind Lemon Jefferson. In 1975, when blues enthusiast Michael Frank left Chicago on a talent search that would take him to Tennessee and points beyond, he had specific performers in mind, the Jelly Roll Kings (also known as the Blues Kings) in particular. He found them rather quickly, but three years would pass before he could assemble them in a Memphis studio and, as he puts it, get into the record business.

Organist/harmonica player Frank Frost and drummer Sam Carr teamed up in 1956, and guitarist Jack Johnson joined them in 1962. Still, unless you are a dedicated, serious-as-life blues fan, you may not be familiar with the band. But the rapport shared by these three instrumentalists reflects their years together, and the vocals, by Frost and Johnson, are frosting on the cake. "Rockin' the Juke Joint Down" was

originally issued in 1979, and it may have you wondering why these artists are not more prominent. The answer is, of course, that blues in this grass-roots form gets very little exposure; when broadcasters dish up a serving of blues, they—and the major record companies—tend to go for such established names as B. B. King and Ray Charles. All the more reason to embrace this engagingly openhearted release. **C.A.**

### REBECCA PIDGEON

**The Raven**

CHESKY 115 (46 min)

**Performance: Nice, but . . .**  
**Recording: Terrific, but . . .**

**R**ebecca Pidgeon . . . "The Raven" . . . Why do I get the feeling that somebody is contemplating a remake of Hitchcock's *The Birds* starring Peter Finch, Jeanne Crain, and Sheryl Crow? But enough cheap jokes. Fact is, Ms. Pidgeon is a singer/songwriter of a pop/jazz/folk bent who's perhaps better known for being the actress-wife of playwright David Mamet (who contributes the occasional lyric here sans his trademark unprintable-in-this-magazine obscenities). Pidgeon's music sounds like what you might expect—as if she spent far too much time during her college years



moon over Joni Mitchell records—but it's all skillfully put together and the voice is attractive in an Enja sort of way. Actually, if there's a fly in the ointment it's the album's all-digital "audiophile" production. In the abstract, it's superb—clean, transparent, utterly live sounding—but in the end it's just too damn realistic, at least for my taste: if you're going to imitate Joni Mitchell, you might as well imitate her arty, big-budget production gloss while you're at it. All in all, then, a pleasant if not overwhelming piece of work from somebody who may do better next time out. **S.S.**

### THE POGUES

**Waiting for Herb**

CHAMLEON 61598 (46 min)

**Performance: Gets by**  
**Recording: Good**

**H**aving lost their main man, toothless wonder Shane MacGowan, the Pogues are a much less edgy, dangerous outfit. There's more Chieftains than Clash in the rousing jigs and stomps that make up "Waiting for Herb," as these kinder-gentler Pogues prefer to sparkle playfully rather than scuff the linoleum of the soul. At their best the group weaves a zestful tapestry of sound on numbers like *Smell of Petroleum*



and *Big City*, which take wing on flights of profoundly silly fancy ("The secret of the universe is hidden in this song / La-la-la . . ."). What really makes the Pogues tick like God's own metronome is the jaunty interplay of banjo, accordion, and mandolin. Spider Stacy's vocals are adequate; they're no match for MacGowan's scarifying rasp, and he double-tracks awkwardly, but he'll do. The biggest letdown here are the songs themselves, which fail to rise above the ordinary about half the time. Be it the spectacular tale told in *Haunting*, the recycled urban sentiments of *Modern World*, or the drummer's wretched vocalizing in *My Baby's Gone*, this album does have its soft spots. At the same time, the Pogues manage to make an endearingly cozy racket on "Waiting for Herb" just often enough to pass muster. *P.P.*

**KEVIN SALEM**

*Soma City*

ROADRUNNER 009 (52 min)

Performance: Spectacular

Recording: Punchy

This is a rave, so let's get right to it: Kevin Salem, formerly of the Boston cult band Dumptruck, has made the most impressive solo rock record in ages. It isn't grunge, it isn't metal, it isn't alternative (except in the sense that it's on a small label). It's just a collection of smart, tuneful, deeply felt songs about somebody's real life, passionately sung in a classic sweet-but-ravaged voice in front of what sounds (at least while you're listening) like the greatest rock band in the world, all ringing guitars and thunderous drums. The influences are obvious—Dylan, middle Stones, the Velvet Underground, the Replacements—but it never sounds derivative, merely right; think Matthew Sweet with more attitude, or a young John Hiatt breathing fire as the lead singer of Television, and you'll get the idea. Add a deceptively no-frills but in-your-face production by Niko Bolas (Neil Young, Warren Zevon) and "Soma City" shapes up as that rarest of artifacts—an all-but-perfect debut album. *S.S.*

**STONE TEMPLE PILOTS**

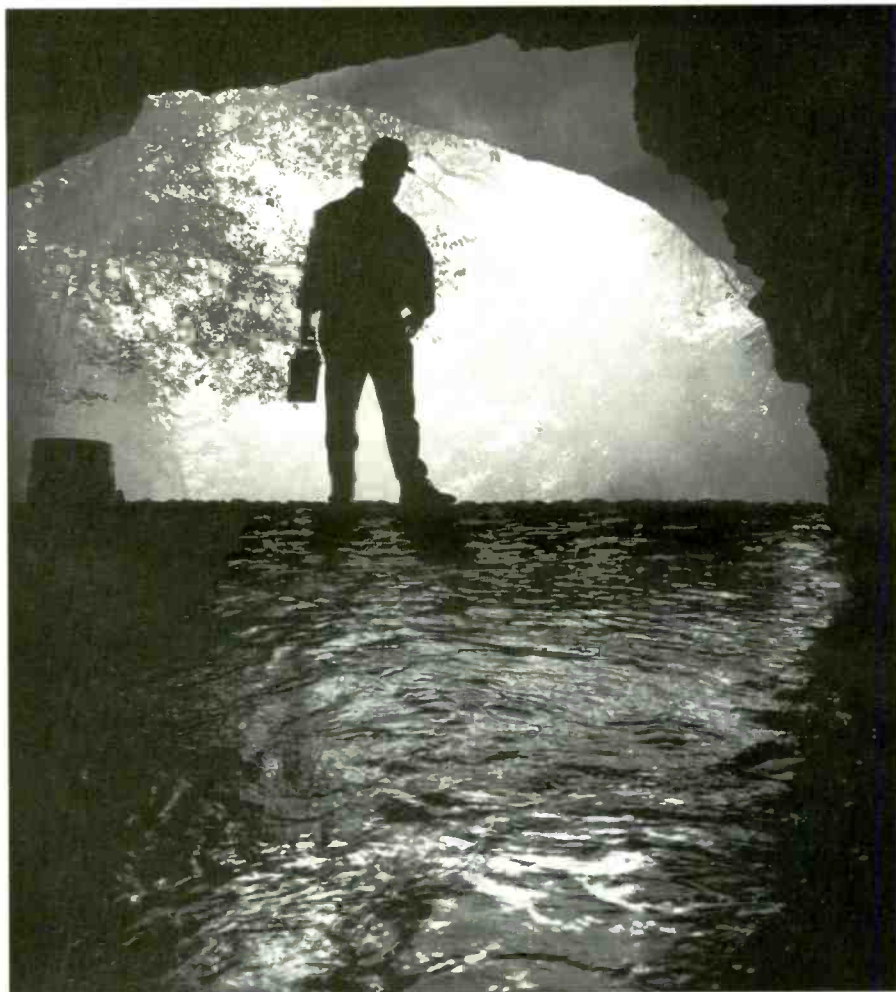
*Purple*

ATLANTIC 82607 (49 min)

Performance: Has its moments

Recording: Very good

Stone Temple Pilots are purveyors of grunge-by-numbers, having taken the anarchy loosed by many truly dangerous Seattle bands—dangerous especially to themselves—and put it back in the bottle. Formulaic grunge may seem like a contradiction in terms, particularly emotional terms, but it sells well to middle-American kids who've got angst in their pants but really don't want to die just yet. So an album like "Purple" is ideally coifed and perfectly timed to capitalize on the mosh-pit manqué sensibility. The upside of all this is that suicide, broken necks, and other forms of bodily abuse really aren't that cool, so perhaps a more well-tempered, commercially polished grunge with mass appeal isn't such a bad thing after all.



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To their credit, Stone Temple Pilots evince signs of growth on "Purple," particularly the more varied second side. (I've got the vinyl—purple vinyl at that. Cool!) There, the serviceable, humdrum grunge of the first half gives way to a series of pleasant surprises, especially the Cream-like hooks, mood and tempo shifts, and rococo arrangement (is that a dobro?) of *Big Empty*. Then there's the fearsome wallop of *Army Ants*, the haunting depth and eerie meter of *Kitchenware & Candybars*, and the self-effacing satire of the unlisted twelfth track, a tongue-in-cheek album

summation titled *12 Gracious Melodies*. Okay, maybe it's just grunge-lite, but it's not bad, either. *P.P.*

#### THEY MIGHT BE GIANTS

John Henry

ELEKTRA 61654 (57 min)

Performance: Big

Recording: Very good

**T**hey Might Be Giants, but they're not too swell-headed to know when the novelty's worn off and the concept is due for an overhaul. So John Flansburgh and John Linnell have added other musicians to their



They Might Be Giants, expanded

wacked-out world, trebling the size of the band with a bassist, drummer, and horn section. The sound is bigger and fuller, amplifying their ironic wit rather than trampling it. The expanded lineup has inspired the two principal Giants to the degree that song quality rarely flags throughout their latest album, "John Henry." Words and music are still arrestingly off-kilter, and the stamp of hornman Kurt Hoffman (formerly of the avant-garde rock orchestra the Ordinaires) is particularly evident in tunes like *Spy*, which instrumentally deconstructs with anarchic precision.

Flansburgh and Linnell continue to re-contextualize pop iconography and employ language in surprising and amusing ways. Linnell recites a litany of Alice Cooper song titles while posing the question *Why Must I Be Sad*, thereby getting inside the head of a kid who sincerely believes the ghoulish rock star understands his despair better than anyone (the surging, unironic music suggests that this one might have been written more from empathy than sarcasm). Later, in *I Should Be Allowed to Think*, he reworks a famous Allen Ginsberg line as, "I saw the worst bands of my generation applied by Magic Marker to drywall." Vignettes here have the tragicomic tang of real life, as in this succinct, Flansburgh-sung scenario: "I got a crush / Copy shop clerk / But she won't look at me." There are (praise the Lord) no love songs, no message songs, and no baring of the soul or political commentary. Rather, the small moments and random thoughts that stream into a receptive mind are organized into fastidious, inscrutable constructs that, like the lyrics of the late nursing-home savant Ernest Noyes Brookings, nonetheless have a fundamentally sound internal logic to them.

With "John Henry," They Might Be Giants once again prove that the surest means of survival in a world gone blooey is a well-cultivated sense of the absurd. This is pop, or what it ought to be in a perfect world. *P.P.*

MICHAEL HANBAND/ELEKTRA

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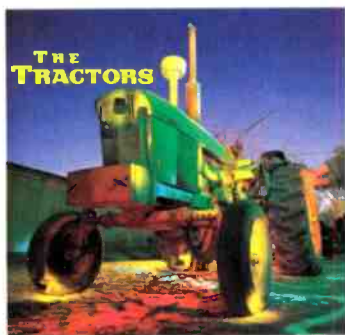
**THE TRACTORS**

ARISTA 18728 (47 min)

**Performance: The real deal**  
**Recording: Extra fine**

**H**ow the hell did the Tractors get on a major mainstream label? They're too deliciously left-of-center for most of the Nashville biggies, and yet here they are, backed by a company that's usually only interested in the latest radio clones.

Actually, these guys are a Tulsa outfit made up of a veritable who's who of seasoned session and road players; individually, they've backed everybody from Bob Dylan to Bonnie Raitt to Leonard Cohen. Their mission: To look at music the way people did before it was specifically categorized. In other words, to mix greasy guitars with popping percussion, boogie, rock-and-roll, western-swing, and Hank Williams whenever the spirit moves them, preferably loose and loud. With a dozen or so of their famous friends (Raitt, Russell, J.J. Cale, James Burton, Ry Cooder, Eldon Shamblin, Debbie Campbell) on hand, the Tractors make the most of a party. But underneath their dedication to good times runs a very serious undertow: "Tryin' to get peo-



ple interested in what it is we're allowing our elected people to do and get away with." As such, there are plenty of hang-loose but dead-on songs about "the little man," and "the city-slick bankers, the IRS boys, and the politicians" who muck up the American dream. But there's also lots of straw-chewin' fun, like *Fallin' Apart*, a paranoid's dream that weds a laid-back, lazy hillbilly beat with a raggedy tarpaper shack. *See Haw*-via-Alfred E. Newman ambience.

In short, anyone who remembers Billy Hill, or loved Leon Russell's Tulsa sound of the Sixties and Seventies (several of the same players appear here), should run, not walk, to climb aboard the Tractors. In this case, it's okay to operate heavy machinery while under the influence. **A.N.**

**DON WALSER**

**Rolling Stone from Texas**

WATERMELON 1028 (39 min)

**Performance: Refreshing**  
**Recording: Good**

**I**n an age when twentysomething Hair Acts barely know how to stand on stage but record sparkling radio hits patched together from countless studio takes, sixty-year-old Don Walser is the real thing. A Texas honky-tonk performer since the Fifties,

Walser is a master of the old Hank Williams-Bob Wills-Jimmie Rodgers styles, as adept at honky-tonk blues, country-swing, and cowboy yodels as any of the big names you already know.

Yodeling, in fact, is Walser's stock in trade. At times, as on the old Stan Jones song *Cowpoke*, Walser's clear, beautiful yodel takes on a flute-like quality. Elsewhere, his range extends so far that you'd swear—and I hope of' Don takes this kindly—he'd have to be a soprano to jump up that high. He hardly looks it, though (Don's a big, well-rounded fella), and he certainly has the

muscle to record most of this album of originals (the title song) and country classics (Willie Nelson's *Three Days*) in one take—a feat that should inspire awe in the Clay Walkers and Tracy Lawrences of this world.

With Asleep at the Wheel's Ray Benson co-producing, and pickers such as fiddler Johnny Gimble and steel-guitar legend Jimmy Day on hand, this is one authentic time-trip to Texas's back-alley honky-tonks and cantinas of yore (although with modern sound, of course). Mighty fine, fellas, mighty fine. **A.N.**

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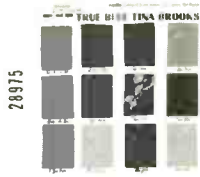
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## POPULAR MUSIC

### CHERYL WHEELER

Driving Home

PHILO 1152 (48 min)

Performance: **Wistful**  
Recording: **Very good**

Like fellow folkie Nanci Griffith, Cheryl Wheeler went to Nashville a couple of years ago and failed to watch her records scurry up the charts. But then Nashville is a tough town for any literate songwriter, especially one born and schooled in New England and for whom the whine of a steel guitar does not fall easily on the ear. If Mary-Chapin Carpenter, with whom Wheeler shares a personal writing style, is the only neo-folkie to successfully bridge the commercial country gap, it doesn't mean there aren't others out there who deserve to be heard. And Wheeler is definitely one of them.

This collection of extremely thoughtful songs is more subdued than Wheeler's earlier "Circles and Arrows," befitting snowy winter afternoons and hot tea breaks rather than upbeat summer folk-fests. Wheeler, who can write at poetic length about the simplest of topics, excels at chronicling the passage of time and the changing of relationships (75 *Septembers*, a kind of love song to a father), as well as fashioning dead-on word portraits about people who have filtered through her life (*Frequently Wrong*, about a sad blowhard of a family friend). But before you write her off as a bookish intellectual, give a listen to *Don't Forget the Guns*, a novelty song about the casualness with which guns are regarded in this country—hardly a Valentine to the NRA. A N.

## JAZZ REVIEWS

### RICHARD BOONE

The Singer

STORYVILLE 4186 (74 min)

Performance: **Excellent**  
Recording: **Generally fine**

When trombonist Richard Boone joined the Count Basie Orchestra in 1966, he was a major asset to the brass section, but it was when Basie brought him front and center as a vocalist that Boone really attracted the public's attention. During his three years with Basie, Boone supplied comic relief by stepping up front and delivering witty vocals in a unique style that combined straight singing with scat, whoops, hollers, and yodels—the audience loved it. In the early Seventies, Boone took up residence in Denmark, where Storyville Records has now assembled a wonderful collection of his work. It's fair to say that this generous 74-minute serving, with diverse accompaniments, explores every aspect of Boone's vocal style, and you won't need a sense of humor to appreciate it—although that will help.

The set begins with a couple of previously unissued Basie tracks taken from a 1968 Paris concert and continues with eight selections made around the same time for the

ill-fated, Los Angeles-based Nocturne label. These include highly original readings of such standards as Berlin's *There's No Business Like Show Business* and *Old Folks* and a couple of delightfully off-beat tunes, *Framed* and *Cocoa Joe*, sung with sophistication and a prepossessing wit. The rest of the album—with accompaniments by Danish bands—includes Jesper Thilo playing beautiful flute behind Boone's relatively straight vocal on the Roberta Flack hit, *Killing Me Softly*, a fine reading of *Doodlin'* (which Sarah Vaughan recorded with the Basie band), and Louis Jordan's *Sure Had a Wonderful Time*. You'll have a wonderful time, too. C.A.

### ROY CAMPBELL

La Tierra del Fuego

DELMARK 469 (63 min)

Performance: **Needs work**  
Recording: **Very good**

Although forty-two-year-old Roy Campbell has been on the music scene for many years, "La Tierra del Fuego" is only his second release as a leader. Like his previous "New Kingdom," the new album reflects Campbell's keen awareness of his own musical heritage and his deep interest in ethnic music in general, but he is a better performer than this album would indicate. A trumpeter whose intense, fiery style and eloquent bop expression were fine-tuned by an impressive trio of instructors (Lee Morgan, Kenny Dorham, and Joe Newman), Campbell here sets out to demonstrate his ability as a composer-arranger. Perhaps that is what's wrong with this album of Campbell originals—it gets bogged down in mundane Spanish-tinged arrangements that often stand in the way rather than frame and enhance individual expression. Granted, Campbell delivers some combustible solos, and there are fine tenor statements from Zane Massey. But repeated listening did not alter the fact that I often found myself wishing all concerned would get on with it and make something happen. C.A.

### TOMMY DORSEY AND FRANK SINATRA

The Song Is You

RCA 66353 (five CD's, 364 min)

Performance: **Topnotch**  
Recording: **First-class remasterings**

The revelation here is not just how good Frank Sinatra was at this early stage of his career, but how unmatched the whole Tommy Dorsey aggregation was in those peak Big Band days of 1940-1942. With Dorsey himself on trombone and Joe Bushkin, Ziggy Elman, Bunny Berigan, and Buddy Rich among the sidemen, plus Connie Haines, Jo Stafford, and the Pied Pipers sharing vocals with Sinatra, the band could swing out excitingly with a cohesion and consistency that no one else surpassed.

This beautifully packaged compilation brings together every recording Sinatra made with Dorsey, including six unreleased alternate takes and twenty airchecks previously unavailable commercially. On most of the 120 tracks, Sinatra sings in the mellow, long-lined style that he openly modeled after Dorsey's smooth, legato trom-



bone technique. Beyond his incredible breath control, there's also the instinctively warm, intimate, sexy handling of lyrics with which Sinatra shook up and refocused just about every crooner's approach to pop singing in the early Forties.

In addition to their enduring musical merits, these recordings have never sounded so good as in this digitally remastered collection. Now if only RCA would do the same for its remaining *non*-Sinatra Dorsey recordings of this period! R.H.

#### DUKE ELLINGTON

**Live at the Blue Note**

ROULETTE 28637 (two CD's, 135 min)

**Performance: A must**

**Recording: Excellent remote**

According to Stanley Dance, who should know, Duke Ellington was fond of playing at Chicago's Blue Note, which he called "The Metropolitan Opera House of Jazz." Between 1947 and 1960, when it closed, Duke was booked into the club seventeen times for a total of 45 weeks, and if you are not among the fortunate who caught the band back then, be glad that someone did—on tape.

"Duke Ellington: Live at the Blue Note" is a two-CD set containing twenty-seven selections (including fourteen previously unissued) recorded during three sets on August 9, 1959. The sound is exceptionally good, due to the use of overhead mikes, and

the band is in as fine a form as I have ever heard it. Even Billy Strayhorn is on hand, replacing Duke at the piano for the opening selection, a rousing version of *Take the A Train*, and joining him at the keyboard on *Tonk*, *C Jam Blues*, and *Drawing Room Blues*. The rest of the program is a mixture of old and new Ellington fare, harking back to the early days (or, as Duke put it, "the time before I joined the band"). Thus we hear *The Mooche* and *Black and Tan Fantasy* in modern dress, and four tunes written for the film *Anatomy of a Murder*, which had just premiered. (The latter tunes were certainly part of Duke's repertoire, but they may have been included on this occasion for the benefit of Michigan Supreme Court Justice John D. Voelker, who was present and on whose book the film was based.)

So, there you have the setting, a fertile



environment for a band that included, among others, Johnny Hodges, Russell Procope, Harry Carney, Jimmy Hamilton, Clark Terry, Shorty Baker, Ray Nance, Cat Anderson, Quentin Jackson, Britt Woodman, and Paul Gonsalves. Rather than go into details, let me assure you that these great players sound as inspired as their leader. Numerous live Duke Ellington recordings have been released, and many more are yet to come, but you will have to look hard to find a set that captures as much music and good spirit as this one. C.A.

#### LONNIE JOHNSON

**Stompin' at the Penny**

COLUMBIA/LEGACY 57829 (41 min)

**Performance: Remarkable**

**Recording: Very good**

One writer called him "the Jimi Hendrix of his time," but New Orleans-born singer/guitarist Lonnie Johnson deserves better. He was a pivotal performer whose single-string guitar style and extraordinary twelve-string solos recorded with Louis Armstrong and Duke Ellington in the Twenties virtually set the course for the guitar as a solo jazz instrument. Such giants as Charlie Christian and B.B. King acknowledged their debt to Johnson, and rock music continues to bear his influence. Johnson was also the original comeback kid, surviving a series of setbacks that began with the flu epidemic of 1918—which

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# QUICK FIXES



## BODY COUNT

### Born Dead

VIRGIN 14205 (47 min)

Ice-T is a cool guy and a great screen presence, but his heavy-metal band remains a so-so proposition. Here, the indictments of *The System* continue to sound less than convincing when marketed by a multinational corporation, and the cover of *Hey Joe* (previously heard on the recent Jimi Hendrix tribute) suffers from—of all things—a less than stellar lead vocal. S.S.

## FELIX CAVALIERE

MCA 11062 (45 min)

It sounds like a perfect match: Cavaliere, a major Sixties figure who was the writer and soaring voice behind soul/rock pioneers the Rascals, and Don Was, the seemingly infallible producer who resuscitated Bonnie Raitt's career. So it's with heavy heart that I report the results here are less than fab—slick, over-arranged, middle-of-the-road R&B that could have been done by some Vegas show band, with the nominal star sounding vocally generic and vaguely lost in the mix. Another of my heroes bites the dust. S.S.



## GODCHILDREN OF SOUL

### Anyone Can Join!

RHINO 71739 (46 min)

Given the all-star cast (the Uptown Horns, Sam Moore, Swamp Dogg, Rufus Thomas, the B52's Fred Schneider) and High Concept (everybody is a soul singer), this might have been either a world-class mess or the party album of the year. Fortunately, the latter is pretty much the case. Pick hit: punk classic *Rockaway Beach*, reworked here as a Sixties R&B duet featuring the eternally nasal Joey Ramone and General Johnson. S.S.

## PUBLIC ENEMY

### Muse Sick-N-Hour Mess Age

DEF JAM 523362 (74 min)

Yes, Chuck D. and company are historically important, and sure, some of the music here has an undeniably impressive metallic churn. But when all is said and done, too much of this stuff is just a self-righteous gasbag rhyming over old Sam and Dave samples. S.S.

## THE CLIFF RICHARD COLLECTION 1976-1994

RAZOR & TIE 2039 (76 min)

An agreeable, if esthetically slight, hits package from a guy who started as an Elvis clone and turned into the longest-running success story in British rock. I don't think, however, that if Elvis had lived he would have dueted (*Suddenly*) with Olivia Newton-John. S.S.

## JOE SCRUGGS

### Ants

SHADOW PLAY 350 (36 min)

Combining humor, memorable melodies, variety, easy vocal delivery, and an uncanny knowledge of what children enjoy, Joe Scruggs has come up with another A+ recording for children aged three to ten; *The Parade*, *Different Drum*, and *Rapunzel Got a Mohawk* will probably become Scruggs classics. Excellent production plus Joe's musicality make it possible for parents to keep listening as their kids play this tape or CD over and over again. [Available from Shadow Play Records, 1-800-274-8804.] William Livingstone

## THE SHADOWS OF KNIGHT

### Dark Sides—The Best

### of the Shadows of Knight

RHINO 71723 (53 min)

If you lived in Chicago in 1965, these local heroes were a bigger deal than the Beatles and the Stones combined. Fortunately for the rest of us, most of their music—from the hormonal hit version of Them's *Gloria* to killer originals like *Light Bulb Blues*—is sensational anytime, anywhere. Yes, kids, the legend is true: the Shads really were the all-time American garage/blues/punk band. S.S.

## PAUL WINTER

### Prayer for the Wild Things

LIVING MUSIC 0028 (68 min)

Although the notes accompanying this "Earth Music Celebration of the Northern Rockies" are as pretentious and self-congratulatory as *Dances with Wolves*, the music itself is attractive, evocative, and quite powerful; from the start there is a sense of reflections of prehistory and of connection with potent great spirits. The cries and songs of twenty-seven beasts and birds are very well integrated with the music of the Earth Band led by Winter on soprano saxophone, and the overall recorded sound is excellent. W.L.

wiped out most of his family—and continued until 1959, for what was to be his final comeback. Though his power was flagging, he appeared in clubs and concerts both here and in Europe and eventually moved to Canada, where he made a guest appearance with bassist Jim McHarg's Metro Stompers on some tracks of a 1965 album entitled "Stompin' at the Penny." The album, which had limited distribution up North, is now available here for the first time.

McHarg's youthful group adheres to the New Orleans tradition, maneuvering with ease and devotion through a repertoire that in the main consists of tunes from the early days of jazz. Johnson catches the spirit with a lively solo on the opening track—a rousing version of *China Boy*—giving it more of the old dazzle than I can remember him mustering up in the preceding six years. We also hear his distinct, engaging singing voice on several tracks that include his own accompaniments. Charles Gall, a Scottish cornetist with a clear, crisp tone and a wonderful vintage imagination, contributes mightily to the set, outdoing himself on *Dippermouth Blues*. I should also mention the band's splendid clarinetist, but neither he nor the rest of the band are given credit on the album, which is a serious omission by the usually thorough Columbia/Legacy production team. All in all, however, well worth hearing. C.A.

## FRANK WESS

### Opus in Swing

SAVOY 0144 (31 min)

Performance: Smooth as silk  
Recording: Very good

The history of African-American music on records could not be written without mention of the Newark, New Jersey-based Savoy label, which captured many memorable performances by great black performers of the post-WWII period. The sumptuous Savoy catalog—an embarrassment of riches—is currently being reissued on CD, bringing back important work by such giants as Dexter Gordon, Dizzy Gillespie, Lester Young, Erroll Garner, Charlie Parker, Charles Mingus, Milt Jackson, and Miles Davis.

One of my favorite Savoy albums was the 1956 "Opus in Swing," a straight-ahead, unpretentious session by a Frank Wess quintet featuring the leader on flute. The feathery, rhythmic foundation will remind you of Basie's All-American rhythm section, thanks in great measure to Freddie Green's lighter-than-air guitar, but also because bassist Eddie Jones (another Basie-ite) and drummer Kenny Clarke know precisely how to delicately propel a group. Completing the quintet is Kenny Burrell, the group's solo guitarist, who had only recently arrived on the scene. This gentle, swinging music was called "chamber jazz" in the Fifties, and while it has the quiet ambience of what you might hear on today's so-called "lite music" stations, this stuff actually has substance. I do have one complaint: 31 minutes was a skimpy serving on the original LP, and it is even more deplorable on a CD. C.A.



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113

**Rohn Lawrence**  
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114

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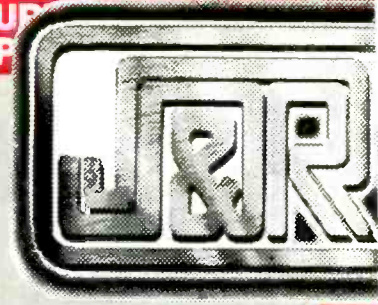
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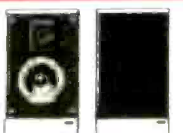


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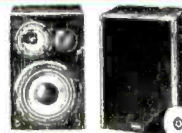


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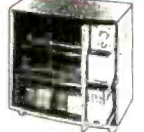


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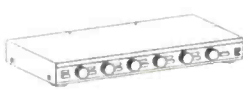


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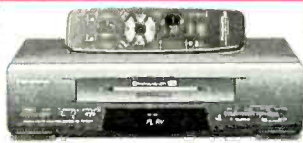


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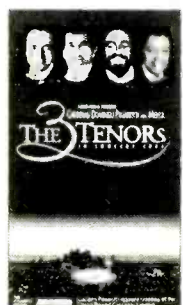


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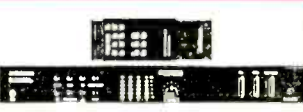


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# CLASSICAL MUSIC



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**ROBERT ACKART,**  
**RICHARD FREED, DAVID**  
**HALL, GEORGE JELLINEK,**  
**ERIC SALZMAN, AND**  
**DAVID PATRICK STEARNS**

**BEETHOVEN: Cello Sonatas, Opp. 69 and 102; Variations on "Judas Maccabaeus"**

Maisky; Argerich  
 DEUTSCHE GRAMMOPHON 437 514  
 (73 min)

**Performance: Sweaty**  
**Recording: Excellent**

**E**xpect electricity, individualism, passion, and even recklessness from these performances by cellist Mischa Maisky and pianist Martha Argerich, though you may often wonder how much the music benefits from it. I like the Romantic ebb and flow they give to the A Major Sonata, Op. 69, as well as the cragginess of the architecture that emerges. There are invigorating surprises at every turn—rubato where you don't quite expect it, accents that give phrases unusual twists, and exaggerated dynamics—surprises that are perhaps best appreciated by those who have heard the sonata more times than is healthy and need to be jostled around a bit to rediscover it.

The two sonatas of Op. 102, written late in Beethoven's career and quirky in form, require a more personal, less generalized response than performers can get away with in his middle-period works. Though moments here give the sense that Maisky and Argerich have thought deeply about the music, plenty of others seem to exploit dramatic tricks to conceal that they haven't. Their furrowed-brow reading of the modest variations on a theme from Handel's *Judas Maccabaeus*, in contrast, sounds labored—they may have worked harder over it than Beethoven did. *D.P.S.*

**BRAHMS: String Quartets Nos. 1 and 3**

Borodin Quartet  
 TELDEC 90889 (69 min)

**Performance: Dramatic**  
**Recording: Rich**

**W**hile a 1963 recording of at least one of these quartets by the "old" Borodin Quartet has circulated on CD, both of the original violinists were replaced some twenty years ago, and this Teldec issue is a new recording by the current foursome. The playing, in any event, is very much in the Borodin Quartet tradition: alert and expressive, impeccable in ensemble, charged with an intensity that never flags and never steps over the line toward excess.

These players do not settle for mellowness or "autumnal" qualities in this music but seek out a more active drama in it. They seem to relish its darker colors, especially in the C Minor Quartet (Op. 51, No. 1), as well as the opportunities Brahms provided,

both in that work and in the B-flat Major (Op. 67), to show how sumptuously beautiful the sound of string instruments can be. First-movement repeats are, of course, taken in both works. In all, this is an eminently persuasive presentation, enhanced by a rich, well-judged sonic frame. *R.F.*

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**I**f you ever doubted that the treasures in RCA Victor's vaults are practically innumerable, consider the label's release in October of a sixty-five-CD set of recordings by the legendary violinist Jascha Heifetz. Arranged in forty-six volumes, this is the largest collection of recordings ever assembled to honor an instrumental performer. The more than three hundred selections, including concertos, chamber music, sonatas, and miniatures, encompass all of his recordings for RCA, EMI, and U.S. Decca. A special collector's booklet includes essays about Heifetz's recording legacy, rare photographs, and indexes to the recordings by composer, volume, and date. Executive Producer John Pfeiffer, who produced several of Heifetz's later recordings, was in charge of mastering the entire set.



The prodigy: Jascha Heifetz c. 1913

**COPLAND: Grogh; Prelude for Chamber Orchestra; Hear Ye! Hear Ye!**

Cleveland Orchestra. London Sinfonietta, Knussen

ARGO 443 203 (68 min)

**Performance: Bracing**  
**Recording: Excellent**

**L**ike the vampiric character it depicts, *Grogh*, an early ballet by Aaron Copland, refuses to stay dead. Inspired by the 1921 German film *Nosferatu* (the first Dracula movie), it was Copland's first major work—finished in 1925 in Paris, revised in 1932, and then, aside from one excerpt, lost. The composer said he didn't mind, that it was an awful piece. But now that *Grogh* has been rediscovered and recorded here with revelatory confidence by the conductor/composer Oliver Knussen, Copland's appraisal seems dead wrong.

The only thing that keeps this tremendously vital, inventive ballet from being among the best works of Copland's early period is its last third, which winds down into a second-rate *Petrouchka*. Not that Copland pales in comparison with Stravinsky, but there's a jarring stylistic inconsistency when he abandons the more individual language of the earlier parts, a language full of eerie, modal melodies, bracing dissonances, chilling pianissimos, and—most significant—impressive thematic transformations. *Grogh* clearly points toward Copland's more serious later works, such as the Piano Variations, and there are orchestral effects that Leonard Bernstein seems to have picked up on for the gang-warfare sections of *West Side Story*. Were such ideas just in the air? Or was the score not so "lost" after all?

The Prelude for Chamber Orchestra is simply a rescored movement from Copland's First Symphony. *Hear Ye! Hear Ye!*, for a ballet about a murder trial, was quickly written in 1934 for Ruth Page. The composer's infrequently heard sense of humor emerges in Ivesian snatches of *The Star Spangled Banner* and the twittering flutes that depict the more vacuous characters. A fun but lightweight piece. *D.P.S.*

**DIAMOND: Symphony No. 8; Suite from the Ballet "TOM"; This Sacred Ground**

Seattle Symphony and Chorale, Schwarz  
 DELOS 3141 (69 min)

**Performance: Excellent**  
**Recording: Impressive**

**T**he find here is David Diamond's music for the unproduced ballet *TOM*, with a scenario by E. E. Cummings based on Har-



riet Beecher Stowe's classic anti-slavery novel, *Uncle Tom's Cabin*. It languished unheard until Gerard Schwarz conducted the première of a twelve-movement orchestral suite on July 4, 1981, at the Waterloo Festival in New Jersey. The story unfolds through a series of colorful dances and stylized chorale melodies in the vintage Americana manner. Diamond's music is tuneful almost to a fault, concisely dramatic where called for (as in the "Slaveraders and Human Bloodhounds" episode), and superbly orchestrated.

Listening to *This Sacred Ground*, a 1962 piece for chorus and orchestra whose text is Lincoln's Gettysburg Address, I admired the skill of the choral writing and Diamond's elegant command of canonic texture, but I also came to the rueful conclusion that Lincoln's words are so perfect in themselves that any attempt at musical rendering, however skillful, is doomed to failure. The choral performance is first-rate and beautifully balanced with the baritone solo (capably carried off by Erich Parce).

The two-movement Eighth Symphony, composed in Italy, is quite removed from the pleasing pandiatonics of *TOM* or the Rounds for String Orchestra. There is a closely argued first movement, complete with bipartite tone row and chromatic textures to match, but the work's overall rhythmic variety breathes none of the academic air that can sometimes cling to twelve-tone music. The contrapuntal textures are marvelously fluent without seeming merely facile, particularly in the forty-measure theme, seven variations, and fiery double fugue that make up the elaborate concluding movement.

Schwarz and his players give their all in both the ballet suite and the symphony, and the Delos sonics are magnificently rich and wide-ranging. *D.H.*



**HAYDN:** *Salve Regina; Ave Regina; Missa Brevis Sancti Joannis de Deo* ("Little Organ Mass"); other sacred works

Soloists: Tölzer Knabenchor; L'Archibudelli;

Tafelmusik; Weil

SONY 53368 (59 min)

Performance: Very good

Recording: Generous

**F**ranz Josef Haydn has taken a lot of heat over the centuries for writing sacred works that were too hearty and cheerful for liturgical use. But this CD proves that in his younger years he could be as sternly pious

## To Hell and Back



McNair  
(Euridice)  
and  
Ragin  
(Orfeo)

**G**luck's *Orfeo ed Euridice* is the work that led opera—and, indeed, all of music—out of the Baroque and into the glories of Classicism. It caused a revolution in Vienna in 1762 and a row in Paris in 1774. In the end it triumphed over its detractors, and, often more respected than admired, it has never been out of the repertoire since.

And yet it turns out that we hardly even know the original opera. Gluck himself started its long revisionist history by adapting it from the original Italian into French, rewriting it considerably in the process. Later revisionists were even more cavalier, and these days the work is generally performed in a chopped-up version of the French edition.

Against all that, John Eliot Gardiner's beautifully recorded *Orfeo ed Euridice* on Philips offers the original Viennese version, in Italian, in all its pristine simplicity and Classicism. It is a revelation: an antique temple with the encrustations of time removed. The biggest problem is that the role of Orfeo was written for a male alto—that is, a castrato, a species of singer no longer with us. In modern times Orfeo has been sung by a mezzo-soprano. Gardiner's solution is to tune his orchestra low enough to bring the music within range of a special variety of high tenor voice, here that of the remarkable Derek Lee Ragin.

There is no doubt that the exquisite proportions of the work emerge with

clarity in this restoration. Mark Twain once said that Wagner's music is really better than it sounds. Gluck's music, it might be added, sounds better than it actually is. It lacks the richness, the virtuosic technique, and the dazzling wit of a Mozart or a Haydn. But it plays . . . and plays and plays.

Gardiner is scrupulous in his use of period instruments and performance practices (rhythmic niceties, beautiful ornamentation, and the like), and his reading brings out the opera's Classical balance and proportions. Yet, at the same time, the work's inherent dramatic strength is conveyed in the form of vigorous tempos, shades of dark and light, lightning bolts of sound set against distant and gentle echoes. The restored "recitatives"—all accompanied by the orchestra—turn out to be powerful musico-dramatic scenes. "Classical" does not have to mean wimpy.

In the soprano roles, Sylvia McNair is appealing as Euridice, Cyndia Sieden somewhat arch-sounding as Amore. But the show belongs to Derek Lee Ragin, who invests Orfeo with the kind of passion that you can believe would move the Furies. Here is the best proof that enlightened Classicism and emotional expression go very well together.

*Eric Salzman*

**GLUCK:** *Orfeo ed Euridice*

Ragin, McNair, Sieden; Monteverdi Choir, English Baroque Soloists, Gardiner cond.  
PHILIPS 434 093 (two CD's, 89 min)

as anybody, starting with the fragmentary *Missa "Sunt Bona Mixta Malis"*, which only turned up in 1984 and is composed in a more intimate, less dramatic, and more austere style than his later sacred works. Following it are a number of other works showing Haydn's roots in the Baroque period, particularly the sacred cantatas *Ave Regina* and *Salve Regina*. His innate theatricality is evident in their ornate vocal lines, beautifully sung here by sopranos Marie-Claude Vallin and Ann Monoyios, respectively.

The disc culminates in the 1777 "Little

Organ Mass," whose nickname should not be taken to imply modest artistic significance. A marvelously compressed piece of choral writing, it's very different from his late Masses, contradicting the notion that his earlier works were mere dress rehearsals for the later ones. Some may find the Tölzer Boys Choir a bit unpolished, but the ingenuousness of their singing is welcome in this music, and Bruno Weil conducts the choir, the soloists, and the two period-instrument ensembles, l'Archibudelli and Tafelmusik, with a sure if conservative hand. *D.P.S.*

**MAHLER: Symphony No. 2**  
("Resurrection")

Studer; Meier; Arnold Schoenberg Choir;  
Vienna Philharmonic. Abbado  
DEUTSCHE GRAMMOPHON 439 953  
(two CD's, 87 min)

**Performance: Relatively detached**  
**Recording: Chorus recessed**

**M**ahler's Second Symphony has been a cornerstone of Claudio Abbado's repertory from the very beginning of his career: Deutsche Grammophon transferred his 1976 recording with the Chicago Symphony to CD some time ago. Although the performance here was recorded in concert in Vienna just two years ago, the Chicago version has clear advantages in respect to sonic balance as well as interpretation.

Abbado's 1976 reading had greater intensity and thrust: despite the live recording, his approach here is more detached, more understated, more focused on technical polish than on emotional values. And while the earlier movements move along well enough, momentum tends to break down in the vast finale—in which, also, the chorus is so recessed as to be not merely unintelligible but nearly inaudible in the soft passages.

The soloists—soprano Cheryl Studer and mezzo Waltraud Meier—fare better in that respect. Moreover, their singing, and particularly Meier's poignant and communicative realization of the *Urlicht* section preceding the finale, rather unfortunately show all too clearly, by contrast, what is missing in the rest of the performance, which exhibits many virtues but lacks the peculiarly Mahlerian strength that informed Abbado's Chicago recording. *R.F.*

**MOZART: Così Fan Tutte**

Soloists; Edinburgh Festival Chorus; Scottish Chamber Orchestra. Mackerras  
TELARC 80360 (three CD's, 189 min)

**Performance: Zesty and polished**  
**Recording: Excellent**

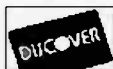
**I**t seems that for record producers at least, the Mozart bicentennial is still a going thing. But the initial impulse to grumble about ceaseless duplications is quickly mitigated by a performance with as much going for it as this *Così*, a byproduct of the Edinburgh Festival of 1993. Under the leadership of Charles Mackerras, the music flows naturally at brisk tempos inspired by an awareness of the period but free of self-conscious "authenticity."

While none of the six principals is a really exceptional vocalist, they all deserve praise for the triumphant ensemble they create. It is an unusually youthful-sounding cast: even Don Alfonso (Gilles Cachemaille) sounds like a youthful rake. And the amorous episodes, particularly the "*Il core vi dono*" of Dorabella (Marie McLaughlin) and Guglielmo (Alessandro Corbelli), are charged with sexuality.

Everyone makes a laudable attempt to deliver the recitatives with clarity and meaning. Not surprisingly, Corbelli and Nuccia Focile (as Despina), the native Italians, excel in that respect, but the half-Italian Jerry Hadley (as Ferrando) is their equal. Focile, incidentally, displays a richer tone than the chirpy Despinas in several

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other recordings. I would have liked more contrast in the soprano timbres of Dorabella and Fiordiligi (Felicity Lott), and there are a few instances when Lott and Hadley allow their tones to lose focus. Otherwise, this finely chiseled ensemble has given us one of the best-balanced versions of this much-recorded opera. *G.J.*



**PUCCHINI: Il Trittico**

Soloists: Orchestra and Chorus of the Maggio Musicale Fiorentino, Bartoletti  
LONDON 436 261 (three CD's, 162 min)  
Performance: Chilling, affecting, rousing  
Recording: Bright

One needs three adjectives to describe a performance of Puccini's triptych, as each of the one-act operas elicits its own emotional response. This welcome recording is given unity by the sensitive conducting of Bruno Bartoletti, by the estimable work of the Maggio Musicale chorus and orchestra, and, especially, by Mirella Freni, who assumes the three soprano roles.

The violent action of *Il Tabarro* takes place on a barge on the Seine in Paris. The unfulfilled longings of Giorgetta, the lonely and jealous frustrations of her husband Michele, and the tormenting despair of her lover Luigi drive the plot ineluctably to its savage end. The music conveys these emotions with intense lyric exactitude. As Giorgetta, Freni sings with glowing warmth and strong dramatic conviction. Baritone Juan Pons is darkly brooding as Michele, and his well-sung confession of love is very moving. Tenor Giuseppe Giacomini's Luigi, while roughly sung in spots, is persuasively ardent.

*Suor Angelica*, set in a strict Italian convent where a young noblewoman expiates the sin of bearing an illegitimate child, has some of Puccini's most beautiful and sophisticated writing. Freni poignantly captures Sister Angelica's spirituality and loneliness, and, in this performance at least, the miracle of her baby son's appearance after her suicide, accompanied by the singing of a heavenly choir, is wholly believable. As the Princess-aunt, the former soprano Elena Souliotis, here sonorously singing a near-contralto role, is fittingly implacable.

*Gianni Schicchi* is the only operatic farce I know of that works effectively throughout. The black comedy in the grasping relatives' attempts to thwart the last will and testament of their uncle-cousin, and the sly Gianni Schicchi's hoodwinking solution to the problem, is enhanced by some of Puccini's most infectious music. As Lauretta, Gianni's young daughter, Freni sings her one aria, "*O mio babbino caro*," with girlish warmth and ardor. As her lover, Rinuccio, tenor Roberto Alagna voices his praise of Schicchi and the "new people" of Renaissance Florence in a stirring paean. Baritone Leo Nucci's performance as Schicchi is the only disappointment. He often slurs his words, and his characterization is a bit dull. The cast of relatives is admirable, and Colin Cui, in a cameo appearance as the doctor, Maestro Spinelloccio—with his affected Bolognese lisp—is delightful. *R.A.*

**RACHMANINOFF:**  
**Symphony No. 2; Vocalise**  
St. Petersburg Philharmonic, Temirkanov  
RCA VICTOR 61281 (69 min)

**RACHMANINOFF:**  
**Symphony No. 2; The Rock**  
Russian National Orchestra, Pletnev  
DEUTSCHE GRAMMOPHON 439 888 (64 min)  
Performances: Study in contrasts  
Recordings: Good

As sharply contrasted readings of the Rachmaninoff Second Symphony as one could possibly imagine. Yuri Temirka-

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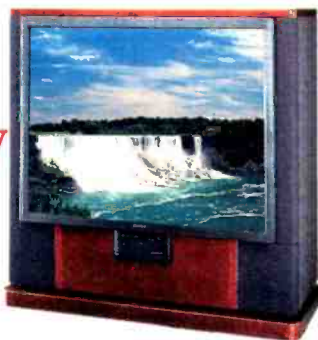
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nov's is luxuriantly expansive, even including the exposition repeat in the first movement (extending it to 22 minutes), while Mikhail Pletnev's is of Toscaninian tautness. If you want your Rachmaninoff with all stops out, Temirkanov is your man. Even the string-orchestra version of the *Vocalise* that he offers by way of filler is stretched out to almost 9 minutes instead of its normal 5 minutes. The sound, from London's Henry Wood Hall, has plenty of body and good inner detail.

Pletnev, whose Russian National Orchestra was recorded in the Great Hall of the Moscow Conservatory, gives us a brilliant and intense interpretation of the symphony, with a nervous rather than lyrically Romantic treatment of the opening movement. Unlike Temirkanov, he is a complete purist when it comes to the very end of the movement, declining to augment the double-basses with timpani. There is some very stylish portamento at suitably strategic points in the scherzo and a white-hot climax to the slow movement. The finale is taut and in its own way exhilarating, and Pletnev does not allow the big tune at the close to get out of hand. He also makes the best possible case for *The Rock*, an early study in Scriabin-esque Romanticism. The sonics are spacious and bright. *D.H.*

**SHOSTAKOVICH: Hypothetically Murdered, Suite; Pushkin Romances; Fragments for Small Orchestra; Suite No. 1 for Jazz Band**

Kharitonov; City of Birmingham Symphony Orchestra, Elder

UNITED/ALLEGRO IMPORTS 88001 (71 min)

Performance: *Evocative, lively*  
Recording: *Hits the highs and lows*

Shostakovich hit all the highs and all the lows in both his life and music, and the full manic range seems to be represented here. *Hypothetically Murdered* is a "light-music circus entertainment" written for Leonid Otiosov and his Tea-Jazz Ensemble, which had an all-star cast that included a performing dog (history does not say if Shostakovich wrote any arias for the dog). It was successfully performed at the Lenin-grad Music Hall in 1931 and then, like a lot of people in those days, unaccountably disappeared. Luckily, portions of the score were used elsewhere by the composer, and a folio of piano sketches survived in his papers. From those sources, Gerard McBurney reconstructed and orchestrated a rollicking suite from the score, which is here given its

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# QUICK FIXES

**BARTOK: The Miraculous Mandarin; Concerto for Orchestra**

Saint Louis Symphony, Slaikin  
RCA 61702 (70 min)

Bartok's big showstoppers—one weird and expressionist out of old Hungary, the other in a romantic Neoclassicism written in this country just before his death—are mid-European music in mid-American style: solid and virtuous rather than decadent and alluring. An oddity is the abrupt original ending of the concerto, which you can program as an alternative to the familiar finish. Koussevitzky, who commissioned the piece, requested the new ending, and he was right; the second thought is much superior to the first. *E.S.*

**BEETHOVEN: Symphonies Nos. 2 and 8**

Royal Concertgebouw Orchestra, Sawallisch  
EMI 54502 (60 min)

Wolfgang Sawallisch is at his most persuasive in this robust yet well-tailored live recording of the Second Symphony, one of the finest to come along in years, its appeal enhanced more than a little by the warm, rich sound of the Concertgebouw. The Eighth is solidly attractive, too, but does not enjoy the same sonic richness—and its witty spell is broken by the applause at the end. *R.F.*

**HAYDN: Symphonies Nos. 45 ("Farewell"), 46, and 47**

Tafelmusik, Weil  
SONY 53986 (68 min)

The "Farewell" Symphony is the one where the players pack up one by one, blow out their candles, and go home—during the performance! Tafelmusik, an excellent Canadian group directed by Bruno Weil, gives lively accounts on period instruments of all three of these intense, dramatic symphonies. The performances have just enough heft to get into the symphonic category and just enough early-music feeling to stay on the line between the late Rococo and the full-blown Classical style. *E.S.*



**MOZART: Violin Sonatas (K. 296, 454, and 526)**

Isaac Stern; Yefim Bronfman  
SONY 53972 (62 min)

There is a lifetime of affection and respect, expressed in the most enlivening

terms, in Isaac Stern's playing of these sonatas, and a remarkably full and sympathetic partnership between him and pianist Yefim Bronfman. Their convincing style refutes any notion that "authentic" Mozart can be delivered only by period specialists. The sonic focus is a little closer than ideal, but these are by any measure outstanding accounts of Mozart's finest works for these instruments. *R.F.*

**BALANESCU QUARTET**

**Luminitza**

MUTE STUMM 124 (51 min)

All the music on "Luminitza" is by Alexander Balanescu, a round-faced Romanian violinist in a Blues Brothers hat and leader of the Balanescu Quartet, and the second violinist, Clare Connors. The nine aggressive and even violent string pieces (which include some percussion sounds and spoken interjections) suggest a scary/funny commentary on the state of affairs in Eastern Europe today. The sound, close and often ugly, is carefully worked throughout; an air of foreboding and pounding intensity is there from the start, but the musical payoff in the two last pieces is a long time in coming. *E.S.*



**MANUEL BARRUECO**

**Sometime Ago**

ANGEL 55039 (55 min)

Beginning and ending with arrangements of songs by Paul Simon, centering on music of Chick Corea and Keith Jarrett, and including five folksy items by Lou Harrison, everything here has been rethought for classical guitar and the talented fingers of Manuel Barrueco. In the notes he describes his conversion to American popular music and jazz, but it is amazing how classical it all sounds. Something is lost in translation, but there are also gains from these idiomatic transcriptions and first-rate performances. *E.S.*

**DAWN UPSHAW AND THOMAS HAMPSON**

**Long Time Ago: American Songs by Aaron Copland**

Saint Paul Chamber Orchestra, Wolff  
TELDEC 77310 (61 min)

Few big-time opera stars can bring to the art song as much subtlety, finesse, and interpretive skill as the baritone Thomas Hampson and the soprano Dawn Upshaw. In this ravishing program they raise Copland's *Old American Songs* and *Eight Poems of Emily Dickinson* to the artistic level of nineteenth-century German lieder.

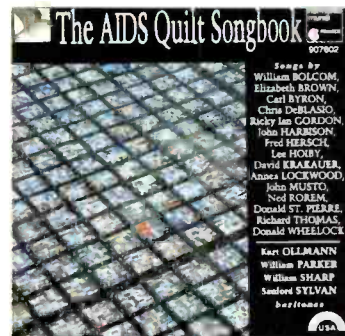
*William Livingstone*

recording première by Mark Elder and the Birmingham Symphony. The suite is a lot of fun, but it only whets my appetite for the complete work.

The Jazz Suite No. 1, the best-known piece here, was written a few years later, also for a so-called Russian jazz band (which had nothing to do with jazz). The five Fragments for Small Orchestra, serious and experimental but starkly beautiful, were also written in the mid-1930's, before the Stalinist attacks changed the composer's life. Only the four Pushkin Romances date from after his terrifying brush with the cultural commissars: the texts obviously refer to his trials and tribulations, and the music suggests determination amidst the gloom. Three of the orchestrations of these songs are by the composer, the fourth by McBurney.

The performances are all evocative and lively, with a strong Kurt Weillian punch in the Jazz Suite that gives it some bite (usually the Shostakovich "jazz" pieces sound like Palm Court music with wrong notes). Dimitri Kharitonov sings the Pushkin Romances with a kind of restrained urgency. *E.S.*

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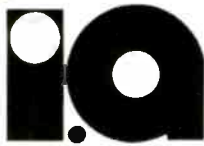
Ollman; Parker; Sharp; Sylvan  
HARMONIA MUNDI 907602 (69 min)

**Performance: Moving  
Recording: Revealing**

Instead of the Three Tenors, here are the Four Baritones—Kurt Ollman, William Parker, William Sharp, and Sanford Sylvan—in an elegiac cycle of songs by no less than fifteen composers, all written for the 1992 AIDS Quilt concert at New York's Alice Tully Hall. Although sorrow and pain cast deep shadows here, there are moments of passion, reflection, even humor and joy. My favorites are William Bolcom's setting of the drag performer Ethyl Eichelberger's *Dasvedanya, Mama*, Richard Thomas's *AIDS Anxiety* trio (a rare moment of real humor), and some of the lyric moments of Ricky Ian Gordon's *I Never Knew* and John Harbison's *The Flute of Interior Time*.

The performances are superb, with four strong, impressive, and deeply musical baritones joined by an excellent clarinetist/composer, David Krakauer, and close to a dozen pianists and composer/pianists. The AIDS Quilt Songbook project—the com-





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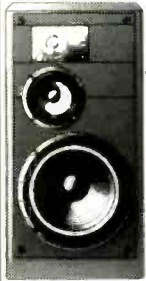


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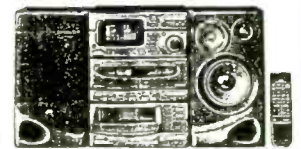
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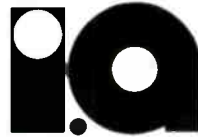


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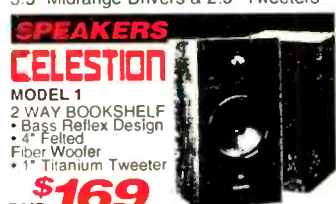
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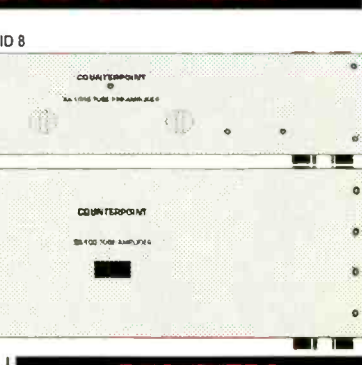


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missions, the concert, and the recording—was the inspiration of Parker, whose own performances here are extraordinarily moving and who died not long afterward. *E.S.*

**ALICIA DE LARROCHA**

**Spanish Serenade—Music of Falla and Montsalvatge**

RCA VICTOR 61389 (70 min)

**Performance: Supremely persuasive  
Recording: State of the art**

**R**CA Victor has rather misleadingly titled this new disc by Alicia de Larrocha, today's preeminent champion of the Span-

ish keyboard repertory, "Spanish Serenade." Although one of the pieces is Manuel de Falla's early *Serenata Andaluza*, among the others are his keyboard masterpiece *Fantasia Bética* and his very substantial Four Spanish Pieces. His stage works are represented by the Spanish Dance No. 1 from the opera *La Vida Breve* and his piano version of the *sinfonía* (overture) to the ballet *El Retablo de Maesa Pedro* (*Master Peter's Puppet Show*), which is recorded here for the first time.

Neither of Falla's memorial pieces for fellow composers (Debussy and Dukas) is



included, but there are two such gestures by Xavier Montsalvatge, rather remarkable little elegies for his compatriots Federico Mompou (who died as recently as 1987) and Oscar Esplá (1886-1976). The other components of the Montsalvatge half of the disc are his brief but intriguing *Divagación*, dedicated to Larrocha on the occasion of her marriage in 1950, the *Sonatine pour Yvette*, written two years later for his daughter's tenth birthday, and the concise and pungent Three *Divertimentos* "on themes by forgotten composers." The charming, witty *Sonatine* is fairly well known; the other pieces are very worthwhile discoveries, and none is likely to have a more persuasive advocate. The recording itself, made at the Troy Savings Bank Music Hall, is a model of realistic piano sound. *R.F.*

**NATHANIEL ROSEN**

**Plays Brahms**

Nathaniel Rosen: Doris Stevenson  
JOHN MARKS RECORDS JMR 5 (70 min)

**Performance: Earnest  
Recording: Close-miked**

**T**he cellist Nathaniel Rosen's first substantial recorded excursion into the core German Romantic repertory is this CD of the two Brahms Cello Sonatas, filled out by Schumann's lovely Fantasy Pieces, Op. 73, and the only one of Mendelssohn's *Songs Without Words* scored for cello rather than solo piano, the Op. 109. The performances are highly successful in the case of the Brahms Sonata in F Major, Op. 99, as well as in the Schumann and Mendelssohn, less so in the first Brahms cello sonata, the one in E Minor, Op. 38. A good deal less listener-friendly than the open-hearted F Major, the E Minor has an opening movement that can seem downright dour. There is some relief in the bittersweet slow movement, but without real rhythmic impetus from the performers. The fugue-textured finale can come off as pedantic. That is just where I find Rosen and his otherwise highly capable keyboard partner, Doris Stevenson, falling short.

The recording itself, derived from a 30-ips analog tape made in New York's Church of the Holy Trinity, is closely focused and seems to favor the darker hues of the cello. The piano, though well-balanced and clean in impact, also seems very close—almost too close in Op. 38, where the sound is full but lacks breathing space. The Op. 99 sonata and the Schumann and Mendelssohn pieces fall more gratefully on the ear. *D.H.*

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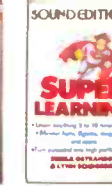





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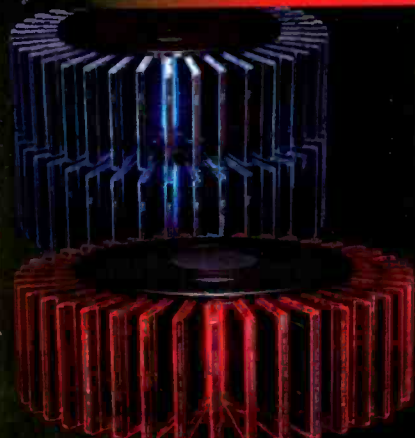
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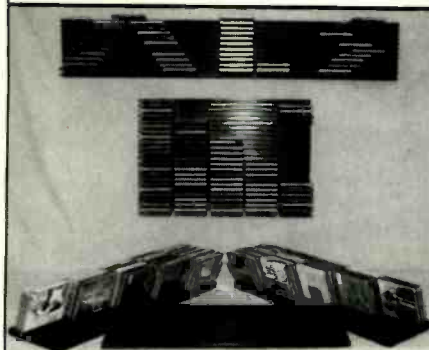
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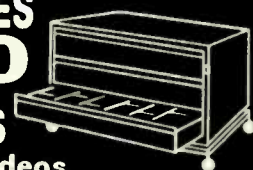
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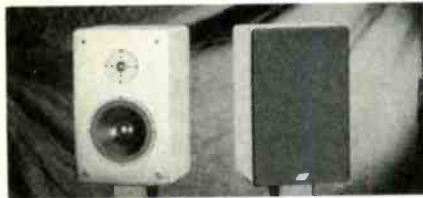
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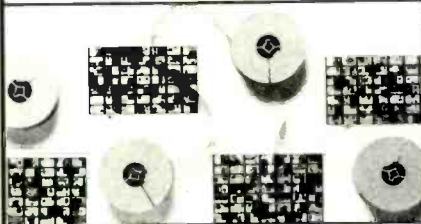
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November

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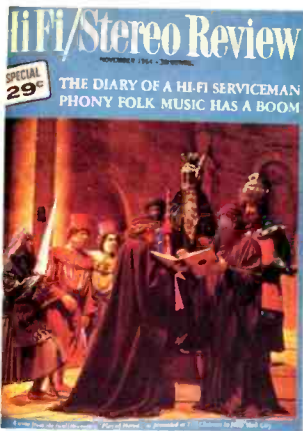
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# TIME DELAY



KEF's 104/2, 1984



## 30 Years Ago

In his November 1964 column, editor Furman Hebb reported from the New York High Fidelity Show. "The most obvious trend," he noted, "is toward transistorization . . . . It seems unlikely, in fact, that more than a few tube-operated hi-fi products will be designed in the future."

New products this month included Artisan's three-manual Cinema electric-organ kit, Bogen's RT6000



The Empire Royal Grenadier speaker, 1964

60-watt stereo receiver (\$400), and Empire's Royal Grenadier 9000 speaker system with a rated bandwidth of 20 to 20,000 cps (1 Hz). In test reports, Julian Hirsch examined the \$240 Viking 77

stereo tape deck (open-reel), which he found "in many ways comparable to much more expensive recorders," and the Dual 1010 automatic turntable, which he said "offers a very high level of performance at its price of \$69.50."

Tea Leaves of the Gods: In "The Hi-Fi System of the Future," Ken Gilmore was right on the money when he predicted that digital recordings would be all the rage in twenty-five years (though he theorized that they would be mass-produced on film rather than plastic discs). He also noted that "the biggest problem to be solved in marketing such recordings would be finding a place to put the program notes."



## 20 Years Ago

Future member of "The Three Tenors" Luciano Pavarotti told editor William Livingstone that "Italian is the perfect language for singing."

In Best of the Month, James Goodfriend flipped for RCA's *Hansel and Gretel* with Anna Moffo and Helen Donath ("This strikes me as well-nigh perfect"), and Chris Albertson applauded Keith Jarrett's "Solo Concerts Bremen/Lausanne"

on ECM ("The finest new album of jazz piano I've heard in twenty years"). Elsewhere in the review sections, Peter Reilly dismissed "Some Nice Things I've Missed" by Frank Sinatra ("His voice is thinning as rapidly as his hair"), Eric Salzman panned a CRI disc of concert music by 1973 Naumburg Award winners ("None of it is very likable or even very important"), and Noel Coppage observed of Arthur Brown's "Journey" that "You'd have to be on something pretty strong to stay with it all the way."

Among the new products in this issue were Altec's Stonehenge III, the second in the company's series of floor-standing column speakers, the Wollensak Model 8080 eight-track tape deck with Dolby noise reduction, B&O's Model 4002 automatic single-play turntable with CD-4 cartridge, and the Sony TC-177SD three-head cassette deck with a rated bandwidth of 20 Hz to 20 kHz using ferrichrome tape. In test reports, Julian Hirsch checked out the Phase Linear 4000 stereo preamp, Scott's R77S stereo receiver, and the Tandberg 9200XD three-speed open-reel tape deck, which he said "makes virtually perfect recordings at all three speeds."

Reviewing Marie Osmond's "In My Little Corner of the World," Peter Reilly said it illustrated "one of the burning

Marie Osmond, 1974



social imperatives of our day—that is, the Osmonds must be forced to cease breeding for the sanity and well-being of all of us."



## 10 Years Ago

In the issue's cover story, Fred Petras examined state-of-the-art hi-fi VCR's, from the Panasonic PV-1730 (a VHS machine going for \$1,400) to the Sony SL-2700 (a \$1,500 Beta machine) and concluded, "Once you've heard a hi-fi tape in a hi-fi VCR through a good audio system, there's no going back." New products included KEF's 104/2 speaker, with two woofers mounted in acoustic-suspension sub-enclosures, and JVC's XL-V2 CD player, which could cue up any track within 2 seconds. Julian Hirsch tested Polk Audio's SDA Compact Reference speaker system and gave it this accolade: "It was easy to forget that we were hearing speakers at all . . . . this is what hi-fi is all about."

Oh, Those Fabulous Eighties! Reviewing "The Story of a Young Heart" by early MTV fashion victims A Flock of Seagulls, critic Mark Peel noted that they had "the worst hair in New Music today."

—Steve Simels





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