

# Stereo Review

JANUARY 1990 ● \$2.50

INCORPORATING HIGH FIDELITY

SYSTEMS FOR  
SMALL SPACES

SPECIAL TEST REPORT:  
NAKAMICHI'S DIGITAL  
AUDIO TAPE RECORDER

ALSO TESTED:  
VECTOR RESEARCH CD  
PLAYER, SNELL SPEAKERS,  
NIKKO INTEGRATED AMP,  
AND MORE...



#259B\*\*\*\*\*5-DIGIT 40242  
#BCH88900Y091#  
430492 BCH 8900Y091 741J JAN90  
MR DAVID S BUCHANAN  
8900 YELLOW WOOD PL  
LOUISVILLE KY 40242  
01#L5





The CDV 488 plays all six disc formats:  
3-inch, 5-inch CD, 5-inch CDV, 8-inch/  
12-inch CD-LDs and the 8-inch LD single.





# PHILIPS CDV488. THE FINEST EXPRESSION IN DIGITAL SIGHT AND SOUND.



When Philips invented laser videodisc technology, we envisioned uncompromised video performance. The CDV488 is the result of this philosophy.

In fact, according to *High Fidelity*, it achieves "...a level of performance that cannot be bested in any significant regard by any competitive product..."

The CDV488 provides 300% sharper color fidelity than any consumer videotape, including Super VHS. And Philips' proprietary wide bandwidth CCD comb filter with S-video output enhances color detail and color accuracy even further.

It also produces a remarkable 420+ lines of horizontal picture resolution—greater than many broadcast video recorders.

The universal remote allows you access to digital performance features like rock-solid still frames, single-frame

advance and crisp slow motion on all videodisc formats. Add to this the jog shuttle that gives you the freedom to operate these effects from your armchair, and you begin to see why the CDV488 offers a home video alternative to the picture quality and special effects found in professional studios.

Remarkably, its high standards in digital video are matched by its specifications in audio. It features the latest Philips Select Grade TDA-1541-A SI dual D/A Converter System, widely regarded as the premier D/A conversion technology available today.

From the company that created compact disc, now comes the CDV488. For those who insist upon the finest expression of digital sight as well as sound.

Call 1-800-223-7772 for your nearest Philips audio/video specialist, to audition this outstanding CDV player.

WORLD-CLASS TECHNOLOGY. EUROPEAN EXCELLENCE.



**PHILIPS**



J a m o

The Art  
The Concert V  
The SW60 satellite/  
subwoofer system  
From JAMO  
From Denmark  
Of course

S W 6 0

"I like that

she whispered

in her smoky voice

"It moves me

in a new way"



JAMO Hi-Fi USA, Inc.  
425 Huehl Rd., Bldg. 3A  
Northbrook, IL 60062  
312 498-4648



CIRCLE NO. 115 ON READER SERVICE CARD



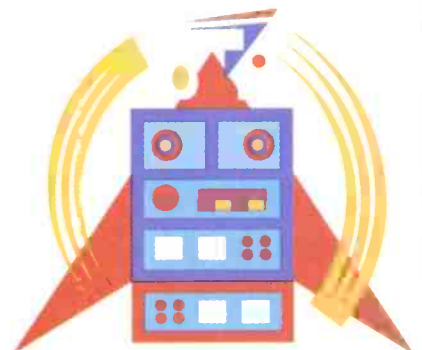
BULLETIN.....	5	SIGNALS.....	25
LETTERS.....	6	TECHNICAL TALK.....	39
NEW PRODUCTS.....	13	POPULAR MUSIC.....	111
RODRIGUES CONTEST.....	19	CLASSICAL MUSIC.....	129
AUDIO Q&A.....	22	THE HIGH END.....	144

## EQUIPMENT

THE BASICS		29
Squiggles and pits: recovering audio signals	by Ian G. Masters	
HIRSCH-HOUCK LABS EQUIPMENT TEST REPORTS		43
Vector Research VCD-410R Compact Disc Player,	page 43	
dbx SF5000 Soundfield Speaker,	page 48	
Nikko IA600 Integrated Amplifier,	page 52	
Cambridge SoundWorks Ambiance Speaker,	page 64	
Snell E/III Speaker,	page 70	
SYSTEMS FOR SMALL SPACES		74
Tight quarters? Consider some of today's sound solutions	by Ian G. Masters	
NAKAMICHI 1000 DIGITAL AUDIO TAPE DECK		80
A special test report	by Craig Stark	
FIND THE SPEAKERS		85
A decorator's dream, the in-wall speaker is no longer an audiophile's nightmare	by Warren Berger	
JAPAN AUDIO FAIR		95
A report from Tokyo	by Bryan Harrell	

## MUSIC

RICCARDO CHAILLY		90
"It is such a daily pleasure for me to be with the Royal Concertgebouw Orchestra"	by Roy Hemming	
BEST RECORDINGS OF THE MONTH		103
Janet Jackson, Bruckner's Symphony No. 8, Rodney Crowell, and Purcell's <i>Dido and Aeneas</i>		
RECORD MAKERS		142
The latest from Kate Bush, Terence Trent D'Arby, Bo Diddley, the Tokyo String Quartet, Phil Collins, and more		



PAGE 74



PAGE 80



Cover: *The Proton 600 Series* (see page 74) and the *Sonance IV* in-wall speaker (see page 85). *Neon* by Neon City, New York City. Design by Sue Llewellyn, photo by Hing/Norton.

COPYRIGHT © 1989 BY DIAMANDIS COMMUNICATIONS INC. All rights reserved. Stereo Review, January 1990, Volume 55, Number 1. Stereo Review (ISSN 0039-1220) is published monthly by Diamandis Communications Inc. at 1633 Broadway, New York, NY 10019; telephone (212) 767-6000. Also publishers of Car Stereo Review, Stereo Buyers' Guide, Compact Disc Buyers' Guide, and Video Buyers' Guide. One-year subscription rate for the United States and its possessions, \$13.94; Canada, \$18.94; all other countries, \$21.94, cash orders only, payable in U.S. currency. Second-class postage paid at New York, NY 10001, and at additional mailing offices. Printed in the U.S.A. Authorized as second-class mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. POSTMASTER/SUBSCRIPTION SERVICE: Please send change-of-address forms and all subscription correspondence to Stereo Review, P.O. Box 55627, Boulder, CO 80322-5627. Please allow at least eight weeks for the change of address to become effective. Include both your old and your new address, enclosing, if possible, an address label from a recent issue. If you have a subscription problem, write to the above address or call (800) 876-9011. PERMISSIONS: Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to: The Editor, Stereo Review, Diamandis Communications Inc., 1633 Broadway, New York, NY 10019. EDITORIAL CONTRIBUTIONS must be accompanied by return postage and will be handled with reasonable care, but the publisher assumes no responsibility for return or safety of unsolicited art, photos, or manuscripts.



# DON'T BUY ONE OF THESE UNTIL YOU TAKE A HEARING TEST.

Warning: If you read this ad you'll wind up at your Sherwood dealer.

Why? Well, it won't be the fact that our current line of home components is the finest we've ever built. Or because our engineers didn't cut corners to assure excellent, long lasting performance. Or because you'll have enough jacks to handle an entire home entertainment center.

No, the reason you'll see your Sherwood dealer is to listen to these components for yourself. Because putting our sensibly priced components to the test is a heck of a lot more important than anything you'll find in an ad.

If you think they sound good now, wait until you hear them.

 **Sherwood**  
LIVE PERFORMANCE SOUND™

11830 ALONDRA BLVD., LA MIRADA, CA 90638 • IN CANADA: NORESKO CANADA INC., TORONTO, ONTARIO © 1990 INKEL CORPORATION

CIRCLE NO. 103 ON READER SERVICE CARD



by Christie Barter  
and Rebecca Day

## BUY BRITISH

British global manufacturing company Polly Peck International has agreed to purchase a 51-percent stake in Sansui Electronics for approximately \$111 million in cash. If the deal is completed, the Sansui brand name is expected to be extended to TV sets and VCR's. Polly Peck owns seven other electronics companies, with fifteen factories, and is a worldwide manufacturer of video and portable stereo equipment under a variety of brand names.

## DAT RECORDINGS FROM SONY

Sony Classical, which is the new name of CBS Masterworks, will offer a digital audio tape sampler of classical music at the Winter Consumer Electronics Show to preview twenty DAT's it has scheduled for release in May. The DAT's include two hitherto unreleased recordings: a recital by the late Vladimir Horowitz recorded shortly before the pianist's death last November and a performance of Mahler's Eighth Symphony by the Vienna Symphony under Lorin Maazel.

## "PEANUTS" SUPER BOWL

GRP Records is going all out to mark the fortieth anniversary of the popular comic strip *Peanuts*, collaborating with syndicator United Media on the halftime show at this year's Super Bowl as well as on a CBS television special airing later this month. Also supporting GRP's best-selling album "Happy Anniversary, Charlie Brown!" is a multimillion-dollar arena stage production, *Snoopy's World of Magic*, which took to the road last November and will play in nearly fifty North American cities this year.

## HOME TAPING

To assist Congress in reconciling copyright law with the capabilities of new technology, the Office of Technology Assessment (OTA) has conducted

a study of home taping activities and public attitudes toward taping. When the results of the study were published in late October, a measure of victory was claimed by both of the major antagonists on the issue of taping, the Recording Industry Association of America (RIAA) and the Home Recording Rights Coalition (HRRRC).

Pointing out that the study showed 40 percent of Americans over the age of ten had taped prerecorded music in the preceding year, Jay Berman, president of the RIAA, said, "I am pleased that the OTA report recognized the serious threat posed by DAT and other digital recording technology, but I am disappointed at the OTA's lack of any positive recommendations on how to protect the American music industry against unauthorized copying."

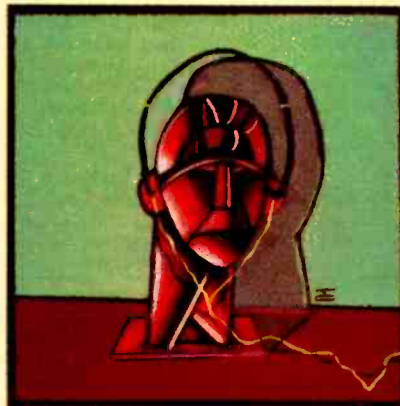
Thomas P. Friel, chairman of the HRRRC, said, "The OTA survey confirms what we have been saying all along: most home music tapers are taping their own music, for their own use, on their own audio equipment. OTA's impartial survey results should finally bury the idea of a royalty tax."

## INCENTIVES

Customers who use Mitsubishi Three Diamond cards to buy Mitsubishi audio or video equipment between January 18 and 29 can take up to a year to pay off the purchase without interest. . . . Through January 31, selected Musicmasters CD's will include coupons for a free sampler disc of the label's jazz or classical recordings. . . . Bib Audio/Video Products' new Bonus Pak includes an MCA Master Series jazz sampler cassette and an A-625 audio cassette head cleaner (\$14.95). . . . From January through June, buyers of Memorex DSS-100 surround-sound system kits are eligible to be reimbursed for \$50 worth of videotape rentals. Customers who buy Memorex VHS-100 audio/video headphones get \$15 worth of videotape rentals.

## EQUIPMENT NOTES

Engineered for functional simplicity, Quad's new Model 66 preamplifier (\$1,500) and Quad CD player (\$1,200) can only be operated by remote control. . . . DesktopStereo from Optronics Technology is a stereo FM receiver on a card for use in older-model IBM personal computers and compatibles. The \$199 card fits any standard slot in a PC, XT, or AT. It runs from the computer's power supply and has external connections for an antenna and headphones. Tuning is done on-screen from the keyboard. . . . Sony's MDR-A60 headphones (\$70) have been chosen for the Museum of Modern Art's Design Collection. The "aerodynamic" in-the-ear phones were designed by Luigi Colani in 1986.



FERRANCE CUMMINGS

## MUSIC NOTES

The Who, Bobby Darin, the Kinks, Simon & Garfunkel, and the Four Tops are among the artists being inducted this month into the Rock and Roll Hall of Fame in ceremonies at New York's Waldorf-Astoria Hotel. . . . Bobby Short, Sylvia Syms, Margaret Whiting, Julie Wilson, Hildegard, and Elizabeth Welch were named "cabaret classics" at the First Cabaret Convention, held in New York this past fall and sponsored by the Mabel Mercer Foundation. . . . In Cannes, France, the composer and record producer Quincy Jones is being named Man of the Year at the 1990 MIDEM international music trade show. □

## Stereo Review

LOUISE BOUNDAS  
Editor in Chief

MICHAEL SMOLEN  
Executive Editor

SUE LLEWELLYN  
Art Director

CHRISTIE BARTER WILLIAM WOLFE  
Music Editor Technical Editor

DAVID STEIN  
Managing Editor

REBECCA DAY, WILLIAM GOLDMAN  
ROBERT ANKOSKO  
Senior Editors

LOREN FALLS  
Associate Art Director

CATHERINE FLEMING  
Assistant Art Director

BARBARA AIKEN, ROCCO MATTERA  
MARYANN SALTZER  
Editorial Assistants

MICHAEL RIGGS  
WILLIAM LIVINGSTONE  
Editors at Large

Contributing Editors: Robert Ackart, Chris Albertson, Richard Freed, Phyl Garland, David Hall, Ron Givens, Bryan Harrell (Tokyo), Roy Hemming, Julian Hirsch, Ralph Hodges, Stoddard Lincoln, Ian Masters, Louis Meredith, Alanna Nash, Mark Peel, Henry Pleasants (London), Ken Pohlmann, Parke Puterbaugh, Charles Rodrigues, Eric Salzman, Steve Simels, Craig Stark, David Patrick Stearns  
Production Director: Karen L. Rosen  
Production Manager: Michele Lee

WINSTON A. JOHNSON  
Vice President and Publisher

### ADVERTISING

Advertising Director: Nick Matarazzo  
National Manager: Charles L. P. Watson  
(212) 767-6038  
Consultant: Richard J. Halpern  
(212) 767-6940  
Account Manager: Sharon Dube  
(212) 767-6037  
Corporate Account Manager: Tom McMahon  
(212) 767-6025  
Assistant to the Publisher: Nadine L. Goody  
Classified Advertising: (800) 445-6066  
Midwestern Managers: Arnold S. Hoffman,  
Jeffrey M. Plaster, (708) 679-1100  
Western Managers: Robert Meth,  
Paula Borgida Mayeri, (213) 739-5130  
Tokyo Office: Iwai Trading Co., Ltd.  
603 Ginza Sky Heights Building, 18-13,  
Ginza 7-Chome, Chuo-Ku, Tokyo, Japan 104  
Japan Representative: J. S. Yagi, (03) 545-3908



STEREO REVIEW is published by Diamandis Communications Inc., a wholly owned subsidiary of Hachette Publications, Inc.

President & CEO: Peter G. Diamandis  
Executive Vice President: Robert F. Spillane  
Senior Vice President, Finance & CFO: Arthur Sukel  
Senior Vice President, Manufacturing & Distribution: Murray Romer  
Senior Vice President, Operations & Administration: Robert J. Granata  
Vice President, Controller: David Pecker  
Vice President, General Counsel: Catherine Flickinger  
Vice President, Circulation: Leon Rosenfield  
Vice President, Communications: Phyllis Crawley Gates  
Vice President, Marketing: Anthony F. Incalcaterra  
Vice President, Research: Bruce Gershtfeld

## LETTERS

### Surround Sound

Ken Pohlmann's November article on surround sound was very informative, but it raises some questions: How does a six- or eight-channel speaker requirement alter old recommendations about "sinking the big bucks" for a system in a pair of good speakers? Are large main speakers with excellent imaging qualities less important since imaging and realism are the function of the other (ambience) speakers? Is efficiency a higher priority?

What features are desirable in the ambience speakers? Certainly they need to be smaller as the room fills with speakers; should this be at the expense of good bass response? How can you compare candidates in a showroom? I would think A/B switching would be pretty impractical when you have eight channels.

ROBERT LAMBERT  
N. Little Rock, AR

In "Surround Sound" Ken Pohlmann states that we can tell "a recording is merely a recording, not the real thing . . ." largely by the fact that "the playback system fails to provide the ambience information that should rightly surround the listener." Thomas Edison noted this problem and found a partial solution with the introduction of his Diamond Disc recordings in 1912. These sounded exactly like the original live studio performances, as was verified by thousands of listeners at Edison's "Tone Tests."

Edison made the recordings in a "dead" studio, so there was no ambience to record. When played back in a concert hall, the recording would sound exactly like the live performer in the Tone Test since the audience would hear exactly the same concert-hall ambience from the two separate sounds. The audience could never tell whether the sound was from the live performer or the record. (Another reason Edison could pull this off was that early Diamond Disc records had silent surfaces, quieter than modern LP's.) But the recordings sounded dull [when people listened to them at home], which was probably one of the causes of the failure of Edison Records in 1929.

STEVEN PECSEK  
Modesto, CA

*Ken Pohlmann replies: You still have to sink your big bucks in your main loudspeakers. Ambience speakers, no matter how many you have, are just supplementary; lots of poor speakers are no substitute for a pair of good ones. Good imaging and bass response remain just as important as ever for the main speakers. These are not the function of ambience*

*speakers, which primarily provide directional fill; since the directional information is mostly in the middle and high frequencies, small ambience speakers are fine. If you want deep bass in a multi-speaker setup, invest in a subwoofer or two. As for listening comparisons, that is a tough proposition. You really have to audition ambience speakers in a surround-sound setup, not as if they were main speakers, and in your own home if possible.*

### "When Harry Met Sally . . ."

Harry Connick, Jr., may be a talented artist, but I was extremely disappointed by Columbia's decision not to use all of the original recordings heard in the movie for the album of *When Harry Met Sally . . .* I rushed out after seeing the film and purchased the CD with the expectation of hearing Louis Armstrong, Ella Fitzgerald, and Frank Sinatra, not just Harry Connick, Jr. As a result, none of the wonderful moments of the film are conjured up when I listen to the disc.

LARRY JONES  
Purchase, NY

### Systems

It is quite a distinction to see an example of our work in STEREO REVIEW's "Systems" (November 1989), but I want to give credit to the two companies that made the whole project possible: the architectural firm of Bahr, Vermeer, and Haecker, and the interior-design team at Greathouse Associates. Without the design expertise provided by the talented individuals in these organizations, our ideas would have remained just that: ideas.

DOMINIQUE J. CHÉENNE  
President, C&C Consultants  
Lincoln, NE

### Clean Licks

In regard to the Digital Music Products advertisement that appeared on page 144 in the November issue: I sincerely doubt that any musician, let alone a cat, would be able to get a "clean lick" out of a saxophone with a clarinet mouthpiece on it.

SCOTT A. ARMSTRONG  
Sterling Heights, MI

### Paul McCartney

Why on earth would you hand Steve Simels a Paul McCartney album to review (October, "Flowers in the Dirt")? Mr. Simels is aligned with John Lennon, the Ramones, Noo Yawk, and anything else that's reasonably abrasive. I feel the same way, but I also like Paul





# Only Sony could add this principle to a portable CD player.

## Introducing the first CD player with Digital Signal Processing.

The next movement of the digital audio revolution is upon us. It's called Digital Signal Processing (DSP). Simply put, DSP is the biggest breakthrough since the digital Compact Disc itself. So who else but Sony, the inventor of the Compact Disc, could bring it to you first. In the new D-555 Discman® portable CD player.

DSP is such an important step forward because it allows you to digitally enhance CD sound reproduction by utilizing several different functions, without adding undesirable noise, distortion or phase shift.

Just contemplate the possibilities. Add digital bass boost below 80 Hz, for optimizing headphone bass

response. Adjust digital dynamic range compression, for listening to CD's in the high ambient noise environment of the car. There's also digital surround and digital graphic equalization at five frequency positions.

The D-555 is also accompanied by an 8X oversampling filter with noise shaping, plus dual D/A converters, for the finest music reproduction available from a portable CD player today.

And for the finale, the D-555 even features an optical output port, for direct interface with other digital components of the future.

The Sony D-555 Discman. It's the only digital CD player that lets you fine tune your music...digitally.



# SONY

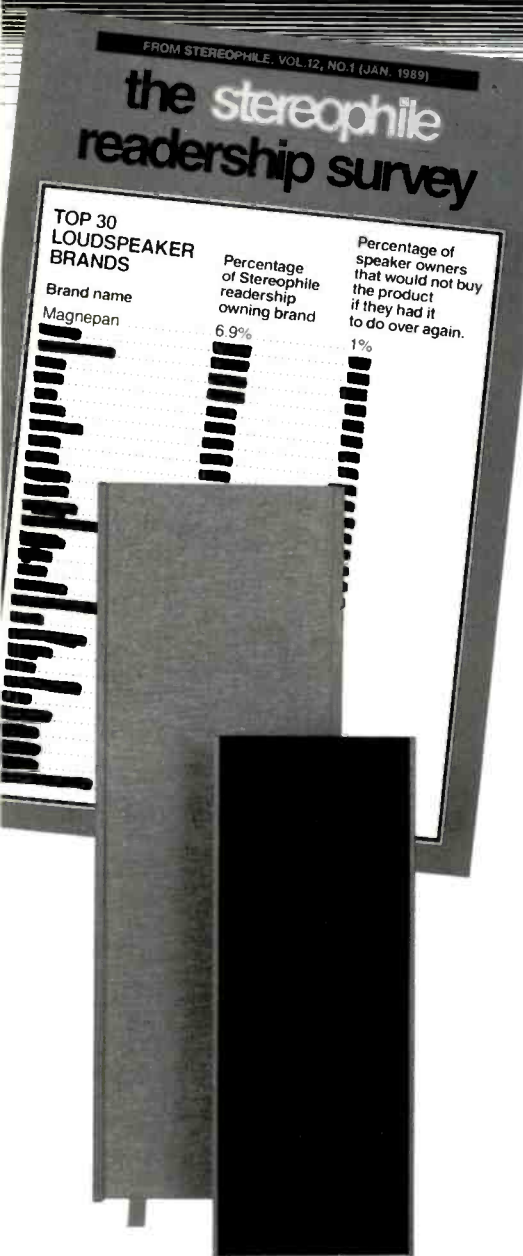
THE LEADER IN DIGITAL AUDIO™

©1989 Sony Corporation of America. All rights reserved. Sony, Discman and The Leader in Digital Audio are trademarks of Sony.

CIRCLE NO. 77 ON READER SERVICE CARD

# MAGNEPLANARS®

## Top Choice of Tough Customers



### MAGNEPAN

1645 Ninth Street  
White Bear Lake, MN 55110  
CIRCLE NO. 20 ON READER SERVICE CARD

## LETTERS

McCartney—not the *My Love* treacle that winds up on the radio but the indispensable gems buried in each of his solo albums. (Actually, the new album had a thoroughly enjoyable radio single, *My Brave Face*.)

The best track in “Flowers in the Dirt” is probably *Figure of Eight*, which Mr. Simels dismisses as “a not-awful bit of power pop à la Squeeze.” What irony! Squeeze has always and affectionately been rooted in the McCartney-esque side of the Beatles.

PRESTON REESE  
San Francisco, CA

### The Laser Turntable

Whatever happened to Finial Technologies and the laser turntable?

ROGER KULP  
Albuquerque, NM

*Ralph Hodges wrote about the imminent introduction of the \$3,700 Finial LT-1 laser turntable in his March 1989 column, “The High End,” only to find at the last minute that Finial pulled the plug on the product because of higher than expected production costs. The most recent development is that Finial has sold its patent and worldwide distribution rights to a Japanese company, CTI Japan, which has altered the design of the LT-1 to make it more suitable to the rigors of the professional market. It now has a price tag of about \$14,000 and will be marketed to libraries, archives, radio stations, and anyone else who can afford it. For more information, write to CTI Japan, #7 Azuma Building, 1-9, Kanda Sakuma-Cho, Chiyoda-ku, Tokyo 101, Japan.*

### The Speaker Gap

Regarding Ken Pohlmann’s October “Signals” column on “The Speaker Gap”: I am one recordist who has been using consumer loudspeakers when mixing sounds, but I find this is not enough to insure that I hear the work the way the consumer will. My mixing room is a place to *monitor* sounds; it can be made so soundproof that I feel cut off from the rest of the world. Listening to consumer loudspeakers in this room is not a real-world experience.

I now play cassettes of trial mixes in the kinds of places where the finished product will be heard, including conference rooms, auditoriums, cars, living rooms, and—because a radio show I mixed for years was aired during the breakfast hour—on the radio in my kitchen. All of these different real-world environments “sound” very unlike my studio.

DAVID BATES  
Swarthmore, PA

### Subliminal Message

I recently discovered something very disturbing: a backwards message in the Emergency Broadcast Network announcement, as heard in the TeeVee Toons album, “Television’s Greatest Hits.” The discovery happened quite by accident when a DJ at the University of Western Ontario radio station cued the record in the normal manner by spinning it in reverse. It was immediately obvious that there was a backwards message recorded behind the first four words, “This is a test. . . .” The subliminal message is, “Sex is a sin.”

It was clear to all of us who first heard it that when the bombs are flying, the government wishes to discourage copulation at all costs. In democracies like ours, this sort of thing should not happen. In short, be wary of groups of men in trenchcoats with short haircuts and identical sunglasses. They have been following me ever since the discovery of the message at 9:45 p.m. on November 1, 1989.

MICHAEL PAUL LAMMEREN  
London, Ontario

### CD Prices

I am concerned about the high cost of CD’s. In Houston, the nation’s fourth largest city, with a population of between three and four million, there is just a handful of places where one can purchase classical and jazz CD’s. Most of them charge \$15.95, and one with a limited selection charges \$13.95. I’ve been told that the actual production cost of CD’s is around \$3, with the rest going to performers, record companies, producers, agents, ASCAP, BMI, and so forth.

I may be wrong, but I believe that we are being taken to the cleaners. A few years ago \$8 or \$9 for an LP was considered high. Now a CD for \$9 is considered a bargain. It’s ironic how the record companies have changed our perception of value and increased their revenues from an album by 50 percent just by changing the format. I’m not against their making a profit. I just believe I’m being gouged, and I don’t like it.

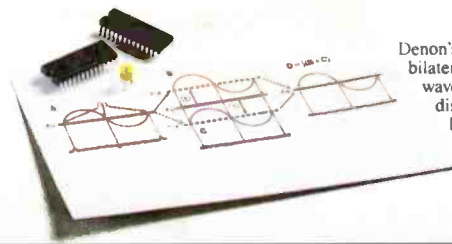
HOWARD E. BROWN  
Houston, TX

### Address Change

The October “New Products” section included an item about the Cerca Classic 120 loudspeaker made by Pearl and Oakley Acoustics of Wales. The U.S. distributor, Anteca, moved shortly after the issue appeared. The new address is Anteca, 5816 Corporate Ave., Suite 170, Cypress, CA 90630. □



Starting with the first digital recording of music in 1972, Denon has produced an unbroken string of digital audio breakthroughs.



Denon's LAMBDA processor bilaterally offsets the digital waveform to eliminate the distortion that occurs when low-level waveforms cross the zero line.

## The LAMBDA Super Linear Converter: Another significant digital audio first from the first company to record music digitally.



Denon's CD player innovations include the Super Linear Converter, the 20-bit digital filter, the real 20-bit converter and noise-shaping filter circuitry.

Denon's latest digital advancement is the LAMBDA Real 20-Bit Super Linear Converter in the DCD-1560. The LAMBDA system's digital offset processor and dual 20-bit converters eliminate the most common source of distortion in CD players: the zero crossings of low-level signals.

Denon's consistent leadership in digital audio technology may explain why earlier generation

Denons often sound better than current competitors' models. And why a leading hi-fi journal found that a moderately-priced Denon equalled or outperformed all others tested, including machines costing over \$1800.

What makes Denon CD players better? Perhaps it's that Denon performs every step in the music chain from recording artists through pressing CDs. And that Denon has concentrated on one thing and only one thing for 80 years.

Music.

# DENON

DESIGN INTEGRITY

Denon America, Inc. • 222 New Road, Parsippany, NJ 07054

DCD-1560 shown with the optional side panels available for most Denon models. Prices quoted are manufacturer's suggested retail prices and may vary.

CIRCLE NO. 27 ON READER SERVICE CARD

*The SRS Series*



*"The sound is superbly balanced and totally effortless."* Stereo Review Magazine



# “Matthew Polk’s SRS Speakers Bring You the Ultimate Listening Experience”

“Spectacular... it is quite an experience.” Stereo Review Magazine

## The Joy of Owning the Ultimate Dream Speakers

Music lovers who are privileged to own a pair of SRS's will share in Matthew Polk's dream every time they sit down and enjoy the spine-tingling excitement of listening to their favorite music. Demonstrating them to admiring friends ultimately increases their pride-of-ownership. “Awesome” is the word most often used to describe the sound of an SRS system. They are capable of playing at live concert levels for long periods of time, with a surprising lack of effort and without producing ear-fatigue.

The bass response can literally move your body any time the music requires it, yet they perfectly reproduce all of the subtle nuances of a string quartet and are just as enjoyable at a low volume level as when played loud. Music and ambience surround the listener in an almost 360-degree panorama of sonic splendor that is, in the words of High Fidelity magazine, “Mind-boggling... Astounding... Flabbergasting.” But words alone cannot possibly describe the experience of listening to these ultimate speaker systems, you simply must hear them.

### SRS 1.2 tl

*Two time Audio Video Grand Prix Winner*

The ultimate expression of Polk technology, this limited production flagship model sets the industry standards for imaging, detail, dynamic range, and bass reproduction.

### SRS 2.3 tl

*Audio Video Grand Prix Winner*

This scaled-down version of the SRS 1.2 tl incorporates all of flagship's design innovations without significantly compromising its awesome performance.

## Polk Audio's SRS: The Quest for Perfection

The goal of Matthew Polk's Signature Reference System (SRS) speakers is to bring an unparalleled level of life-like musical reproduction to your home. Perfect musical reproduction, long the dream of every speaker designer, is approached so closely by Matthew Polk's SRS's that it will seem as if the musicians are performing right in your listening room. This stunning achievement combines technology and creative insight to bring you a listening experience that you will never forget.

**1. Patented SDA True Stereo Technology** — The first and only speaker systems to maintain full stereo separation all the way from the source to your ears.

SRS speakers seem to disappear as musical images fill your listening room and seem to immerse you in a fully three-dimensional soundfield of startling realism.

**2. Multiple Driver Arrays** — The use of multiple drivers allows each separate element to work less hard and lowers distortion even at live concert levels. Power handling is increased to 1,000 watts per channel, providing a seemingly limitless dynamic range.

**3. Time-Compensated Driver Alignment** — Time-coherent driver placement insures that the entire spectrum of sounds reaches your ears at the same time. The sound is better focused, balanced and less fatiguing.

**4. Wavelength Optimized Line-Source** — Vertical driver arrays focus the sound waves into the room in a way which greatly reduces floor and ceiling reflections. Progressive reduction of the acoustical length of the arrays maintains constant vertical dispersion and eliminates “comb” filtering effects that limit other multiple driver systems. The result is extraordinary clarity and detail, great flexibility in room placement and precise stereo imaging from virtually any place in the room.

**5. Planar 15" subwoofer** — SRS bass performance is breathtaking. The use of small active drivers (eight in the SRS 1.2 tl, six in the SRS 2.3 tl) coupled to a huge sub-bass radiator achieves a bass response that is extraordinarily tight, fast (no boominess), deep and distortion free. In fact, the distortion at 25 Hz is lower than that of many audiophile-quality tube amplifiers.

**6. Bi-amp Capability** — The optional use of separate amplifiers for the high and low frequencies further improves clarity, lowers distortion and increases dynamic range.

**7. Hand-Crafted Limited Production** — The one-at-a-time attention that goes into the production of every Polk SRS speaker system means that your pair will sound and look as good as Matthew Polk's own.



Matthew Polk with the ultimate expressions of loudspeaker technology: The SRS 1.2 tl and SRS 2.3 tl.

Where to buy Polk Speakers? For your nearest dealer, see page 136.

CIRCLE NO. 90 ON READER SERVICE CARD

**polkaudio**  
The Speaker Specialists®  
5601 Metro Drive  
Baltimore, Maryland 21215  
(301) 358-3600

33,868,800  
times per second.  
That's  
new  
technology.

The most remarkable breakthrough in digital technology since the introduction of compact disc players. That's 3D Bit Stream. Exclusively from Harman Kardon.

3D Bit Stream turns digital data into musical experience at 33,868,800 times per second. (100 times faster than conventional CD players.)



The 3D Bit Stream CD players offer unsurpassed linearity, low-level accuracy, and freedom from phase irregularities. Or, quite simply, 3D Bit Stream lets the music flow.



\* Registered trademark of Dolby Laboratories.

A more  
musical  
experience.  
That's  
Harman Kardon.

From the delicate sound of a classical Spanish guitar to the driving rhythm of a bass, 3D Bit Stream captures all the dynamics, dimension, and drama of a live performance.

Harman Kardon has a history of firsts: from the world's first high fidelity receiver. The first cassette deck to incorporate Dolby\*. The introduction of the active tracking tuner. And now, bit stream technology *with* totally discrete analog circuitry in compact disc players. That's Harman Kardon. Pioneering technology for people who love music.

Take your favorite CD to your Harman Kardon dealer. Listen. And experience the music as you never have before.

Also ask for a detailed explanation of 3D Bit Stream, or write: Harman Kardon, Engineering Dept., 240 Crossways Park West, Woodbury, NY 11797.

**harman/kardon**

H A Harman International Company



## NEW PRODUCTS



### PHILIPS

The FR780 audio/video receiver from Philips is rated to deliver 70 watts rms per channel into 8 ohms. It allows the user to mix any audio source with any video source and to select AM or FM tuner frequencies by direct numerical entry as well as with conventional scan tuning or the nineteen station presets. The motorized volume knob can be

operated by the RC-5 remote control, which is also compatible with other Philips audio and video components. An alphanumeric display shows which A/V sources have been selected. Price: \$549. Philips Consumer Electronics Co., One Philips Drive, P.O. Box 14810, Knoxville, TN 37914-1810. **Circle 120 on reader service card**



### CELESTION

The Celestion Model 5000 speaker has an 8-inch die-cast polyolefine-cone woofer and a midrange/treble ribbon driver for frequencies from 900 to at least 20,000 Hz. The complementary third-order crossover is biwired with star-ground return feeds. The ribbon driver is housed on the inside corner of the cabinet at a 45-degree angle from the woofer's axis in order to minimize cabinet diffraction and create a wider listening "window." Bass response is rated as -3 dB at 66 Hz and -6 dB at 49 Hz, sensitivity as 86 dB sound-pressure level, power handling as 100 watts, and impedance as 4 ohms. Dimensions are 25½ x 13 x 13 inches, and the cabinet finish is walnut veneer. Prices: \$2,299 a pair; \$399 a pair for the optional Celestion K stand shown. Celestion Industries, 89 Doug Brown Way, Holliston, MA 01746.

**Circle 122 on reader service card**

### TERK

The Pi/2 is Terk's latest FM antenna to use the company's patented Gamma Loop design, which Terk claims rejects multipath and noise better than standard dipole antennas. Its gain is variable from -20 to +38 dB, enabling users to reduce the received signal level to overcome overloading or to boost the level to pull in weak stations. Impedance is 75 ohms; a 300-ohm adaptor is supplied. The circular Pi/2 measures 5 inches in diameter and 1 inch thick. Its reception pattern is omnidirectional when it is laid flat and directional when it is stood upright on its base. The antenna is available in matte black, gray and white finishes. Price: \$79.95. Terk Technologies, Dept. SR, 56 Harrison St., New Rochelle, NY 10801.

**Circle 121 on reader service card**



### SHARP

The Sharp MV-D100 combi-player is also a five-disc carousel CD changer. It can play any combination of 3- and 5-inch CD's and 5-inch CD-V's as well as single 8- and 12-inch videodiscs. Features include an eight-times-oversampling digital filter, dual digital-to-analog converters, an optical digital output terminal, and an S-video output terminal. Price: \$1,499.95. Sharp Electronics Corp., Dept. SR, Sharp Plaza, Mahwah, NJ 07430-2135.

**Circle 123 on reader service card**



## NEW PRODUCTS



### SONY

Sony's MDR-CD999 headphones are part of its Digital Monitor Series. The oval circumaural ear pieces are said to lock in sound and block out background noise; a soft-cushion headpiece provides listening comfort. Frequency response is rated as 3 to 30,000 Hz. The phones use Class 1 linear-crystal oxygen-free copper Litz cable for high-fidelity signal transfer without losses. The gold-plated stereo Unimatch input plug, which can fit either mini or standard phone jacks, is said to provide superior conductivity. Price: \$250. Sony Corp. of America, Dept. SR, Sony Dr., Park Ridge, NJ 07656.

**Circle 124 on reader service card**



### FOSGATE

The Fosgate AS 602 in-wall speaker was designed for surround-sound and home-theater applications. It has a 6¼-inch polypropylene woofer/midrange, a 1-inch soft-dome tweeter, and a 24-dB-per-octave crossover that incorporates air-core inductors and low-loss film capacitors. A protective device automatically cuts off power to the tweeter in the case of signal overload and resets instantly when power is reduced to a safe level. Impedance is rated as 8 ohms, sensitivity as 88 dB at 1 meter with a 1-watt input, and frequency response as 70 to 22,000 Hz. A mounting frame to fit existing walls is supplied; a construction kit for new walls is available. Price: \$425 a pair. Fosgate, Dept. SR, P.O. Box 70, Heber City, UT 84032.

**Circle 126 on reader service card**

### A/D/S/

The a/d/s/ L9e three-way bookshelf loudspeaker is part of the moderate-price L series. The L9e's 8-inch woofer is made of StiffLite, the company's proprietary air-filled cellulose composite, whose cross-linked, randomly oriented fibers are said to minimize coloration. The 1-inch soft-dome tweeter is made of a copolymer material with a high internal damping coefficient, and the 1½-inch dome midrange is designed for high efficiency. The system's frequency response is rated as 38 to 22,000 Hz ± 3 dB, its nominal impedance as 4 ohms. Dimensions are approximately 21½ x 11½ x 10½ inches, and the cabinet is available in walnut veneer or a textured finish. Price: \$800 a pair. a/d/s/, One Progress Way, Wilmington, MA 01887.

**Circle 125 on reader service card**



### MITSUBISHI

Mitsubishi's first videodisc product is the M-V 7010 combi-player, which plays 5- and 3-inch audio CD's, CD-V's, and 8- and 12-inch videodiscs. Both sides of a two-sided disc can be played automatically without turnover. The player has four-times-oversampling digital filters, dual digital-to-analog (D/A) converters, and a fiber-optic port for use with an outboard D/A converter. Other features include twenty-track programming, automatic program editing for dubbing CD's onto cassettes, shuffle play, and intro-scan, which plays the first 8 seconds of each track or chapter on a disc. A remote control is supplied. Price: \$1,099. Mitsubishi Electric Sales America, Dept. SR, 5757 Plaza Dr., P.O. Box 6007, Cypress, CA 90630.

**Circle 127 on reader service card**





# POWER From The GOODS



## AUTOMOTIVE STEREO AMPLIFIERS AND COMPONENTS

HIFONICS is the one single manufacturer supplying all of the auto stereo users' needs.

With amplifiers from 40 to 1200 watts (RMS power into 4 ohms) in 1, 2, 4 and 6 channels.

ALL DESIGNED AND MANUFACTURED IN THE U.S.A.

HIFONICS also manufactures parametric equalizers, electronic crossovers, a full range of loudspeakers and accessories.



**HIFONICS®**  
MADE IN U.S.A.

**HIFONICS CORPORATION**  
11 Victoria Terrace, Ridgefield, NJ 07657 • 201/945-8880 • Fax: 201/945-1218

**HIFONICS WEST®**  
725 B Industrial Road, San Carlos, CA 94070 • 415/595-8600 • Fax: 415/595-2620

CIRCLE NO. 74 ON READER SERVICE CARD



## NEW PRODUCTS



### ACOUSTIC RESEARCH

The Studio Partner powered speaker is a larger version of AR's Powered Partner. The system uses electronic equalization to create a bass sound said to equal that produced by larger speakers. Each speaker has an 8-inch, large-magnet woofer with a 1½-inch voice coil that crosses over to a low-resonance tweeter at 2,000 Hz. One speaker in each pair contains a stereo amplifier, powered from AC line current, that is rated to deliver 16 watts per channel with no more than 1 percent total harmonic distortion. The speakers come with a two-year warranty (parts and labor) and are guaranteed to perform within ±1 dB of specifications for five years from date of purchase. Price: \$379 a pair. Acoustic Research, Dept. SR, 330 Turnpike St., Canton, MA 02021.

**Circle 128 on reader service card**

### R. F. ENGINEERING

R. F. Engineering's SI-2 switching system enables users to connect the same loudspeakers to both a stereo television set and a stereo audio system. It automatically detects which of two amplifiers is attempting to run the speakers and allows only that amplifier to drive them, eliminating the need to buy separate speakers for a stereo TV set or to run the audio signal from the set through the hi-fi system's auxiliary input. The SI-2 can switch up to 120 watts. Price: \$49.95.

**Circle 129 on reader service card**



### SAMSUNG

Samsung's CD-22R compact disc player has sixteen-track programming capabilities and can play 3-inch discs without an adaptor. Features include an index selector, repeat of one or all tracks, a headphone jack, and a slider

volume control. It uses a three-beam laser pick-up and comes with a fifteen-function remote control. Price: \$209.95. Samsung Electronics, Dept. SR, 301 Mayhill St., Saddle Brook, NJ 07662.

**Circle 130 on reader service card**



### ONKYO

The Onkyo A-8700 integrated amplifier is rated to deliver 105 watts rms per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.008 percent total harmonic distortion. It features Onkyo's AEI (Anti-Electromagnetic Interference) transformer, which uses a special core configuration and silicon-steel shielding to reduce flux leakage from the core and coil by 22 to 34 dB,

and Onkyo's Opto-Drive power-amplifier circuit, which uses a phototransistor to convert light energy into an electrical audio signal free of spurious elements. Other features include a Delta power supply, linear switching circuitry, a charging noise filter, and heavy-duty four-way speaker terminals. Price: \$529.95. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446.

### COAST MANUFACTURING

The Coast CD-30 compact disc case is made of soft, durable nylon and padded for protection. It can accommodate four double CD's and has a total capacity of thirty discs. The adjustable shoulder strap can also be used as a handle. The removable tray can be wall-mounted; extra trays can be purchased separately. Dimensions are 10½ x 8½ x 5½ inches. Price: \$17.95. Coast Manufacturing Co., Dept. SR, 118 Pearl St., Mt. Vernon, NY 10550.

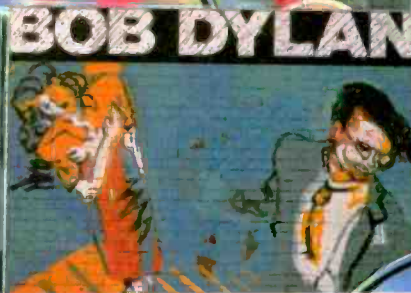
**Circle 131 on reader service card**





# DISCS, DISCS, DISCS, DISCS! PICK ANY 8 CDs FOR A PENNY

plus shipping/handling with membership. Details on other side.  
PLUS A CHANCE TO GET ONE MORE CD—FREE!



**Rolling Stones—Steel Wheels.**  
*Mixed Emotions; Sad, Sad, Sad;*  
etc. (Rolling Stones Rec.) 387-738

**Paula Abdul—Forever Your Girl.**  
*Cold Hearted; Straight Up;* more. (Virgin) 374-637

**Bob Dylan—Oh Mercy.**  
*Ring Them Bells;* etc. (Columbia) 389-262

**Richard Marx—Repeat Offender.**  
*Too Late To Say Goodbye;* etc. (EMI) 380-915

**Gloria Estefan—Cuts Both Ways.**  
*Don't Want To Lose You;* etc. (Epic) 382-341

**Motley Crüe—Dr. Feelgood.**  
Title cut plus *Without You;* *T.N.T.;* etc. (Elektra) 387-944

**Michel Camilo—On Fire**  
(Epic) 389-999

**The D.O.C.—No One Can Do It Better** (Ruthless) 389-155

**The Isley Brothers—Spend The Night**  
(Warner Bros.) 389-148

**Enuff Z'Nuff** (Alco) 388-967

**Barry White—The Man Is Back!** (A&M) 388-843

**Slick Rick—The Great Adventures Of Slick Rick**  
(Columbia) 388-363

**Yellowjackets—The Spin**  
(MCA) 388-173

**10 Years After—About Time** (Chrysalis) 388-140

**Schooly D—Am I Black Enough For You?**  
(Jive/RCA) 388-066

**The Jets—Believe** (MCA) 388-033

**Taylor Dayne—Can't Fight Fate** (Arista) 388-017

**Yo-Yo Ma/Stephane Grappelli—Anything Goes.**  
*Mostly Cole Porter Tunes* (CBS) 387-845

**Placido Domingo—The Unknown Puccini**  
(CBS Master.) 387-829



**Elton John—Sleeping With The Past** (MCA) 387-993

**Dino—24/7**  
(4th & Broadway/Island) 387-415

**24-7 SP4Z—Harder Than You** (In Effect/Relativity) 387-373

**The Beach Boys—Still Cruising** (Capitol) 387-092

**Joe Cocker—One Night Of Sin** (Capitol) 387-084

**King's X—Gretchen Goes To Nebraska**  
(At/Megalforce WW) 387-019

**Patti LaBelle—Be Yourself** (MCA) 386-334

**The Traveling Wilburys—Volume One** (Wilbury) 375-089

**Molly Hatchet—Lightning Strikes Twice** (Capitol) 389-346

**Paul Shaffer—Coast To Coast** (Capitol) 386-276

**Boogie Down Productions—Ghetto Music: Blue Print Of Hip Hop** (Jive/RCA) 386-193

**Babyface—Tender Love**  
(Epic) 386-177

**Marshall Crenshaw—Good Evening**  
(Warner Bros.) 386-110

**Steve Stevens Atomic Playboys** (Warner Bros.) 386-086

**Bee Gees—One** (Warner Bros.) 386-060

**Chaka Khan—Life Is A Dance/The Remix Project**  
(Warner Bros.) 386-052

**Tangler—Four Winds**  
(ATCO) 386-011

**Do The Right Thing—Original Soundtrack**  
(Motown) 385-732

**Pete Townshend—The Iron Man** (Atlantic) 385-724

**Ripplingtons—Tourist In Paradise** (GRP) 385-658

**Adrian Belew—Mr. Music Head** (Atlantic) 384-867

**Melissa Etheridge** (Island) 371-468

**Badlands** (Atlantic) 384-388

**Yousou N' Dour—The Lion** (Virgin) 384-362

**Danny Wilson—Bebop Moptop** (Virgin) 384-347

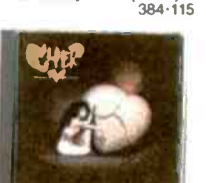
**Kool Moe Dee—Knowledge Is King**  
(Jive/RCA) 384-339

**Michael Damian—Where Do We Go From Here**  
(Cypress) 384-305

**Anderson, Bruford, Wakeman, Howe** (Arista) 384-115

**Cher—Heart Of Stone**  
(Geffen) 383-893

**The Police—Every Breath You Take... The Singles**  
(A&M) 348-318



**John Teah—Garden City**  
(A&M) 388-876

**Dr. John—In A Sentimental Mood**  
(Warner Bros.) 384-040

**Diana Ross—Working Overtime** (Motown) 383-984

**Tin Machine** (EMI) 383-976

**Maria McKee** (Geffen) 383-844

**James Ingram—It's Real**  
(Warner Bros.) 383-836

**Billy Squier—Hear And Now** (Capitol) 383-760

**Jackson Browne—World In Motion** (Elektra) 383-752

**Night Ranger—Greatest Hits** (MCA) 383-729

**Ghostbusters II—Original Soundtrack** (MCA) 383-711

**Reba McEntire—Sweet Sixteen** (MCA) 383-562

**Queen—The Miracle**  
(Capitol) 383-547

**Gold & Platinum Volume Six** (Realml) 388-355

**U2—Rattle And Hum**  
(Island) 374-017

**Bonham—The Disregard Of Timekeeping**  
(WTG) 383-497

**Bad English** (Epic) 383-463

**Dan Hill—Real Love**  
(Columbia) 383-380

**Jean-Pierre Rampal—Mozart: Flute Concertos, K.313/314 Adante, K.315/ Rondo K.184 Israel Philharmonic/ Zubin Mehta** (CBS Masterworks) 383-364

**Black Sabbath—Headless Cross** (I.R.S.) 383-109

**Michael Bolton—Soul Provider** (Columbia) 383-083

**Clarence Clemons—A Night With Mr. C**  
(Columbia) 383-067

**The System—Rhythm And Romance** (Atlantic) 382-986

**Jethro Tull—Rock Island**  
(Chrysalis) 388-157

**Living Colour—Vivid**  
(Epic) 370-833

**Donna Summer—Another Place And Time** (Atlantic) 382-960

**Kool G Rap & D.J. Polo—Road To The Riches**  
(Cold Chillin') 382-713

**EU—Livin' Large** (Virgin) 382-473

**Dangerous Toys**  
(Columbia) 382-903

**Stacey Q—Nights Like This** (Atlantic) 382-838

**White Lion—Big Game**  
(Atlantic) 382-820

**Shark Island—Law Of The Order** (Epic) 384-180

**Hank Williams, Jr.—Greatest Hits III**  
(Warner Bros. / Curb) 378-182

**Cyndi Lauper—A Night To Remember** (Epic) 377-887

**Debbie Gibson—Electric Youth** (Atlantic) 377-275

**Barbra Streisand—Till I Loved You** (Columbia) 374-884

**Bobby Brown—Don't Be Cruel** (MCA) 372-045

**Alyson Williams—Raw**  
(Del Jam / Columbia) 382-485

**The Doobie Brothers—Cycles** (Capitol) 382-457

**Sky—Start Of A Romance** (Atlantic) 382-440

**Alice Cooper—Trash**  
(Epic) 382-366

**Triumph—Classics** (MCA) 382-135

**Donny Osmond** (Capitol) 382-119

**Roachford** (Epic) 382-010

**Branford Marsalis—Trio Jeepy** (Columbia) 381-830

**The Cult—Sonic Temple**  
(Sire/Reprise) 381-798

**Mr. Big** (Atlantic) 382-812

**Crosby, Stills, Nash and Young—American Dream**  
(Atlantic) 376-533

**Batman—Original Soundtrack** (Warner Bros.) 383-885



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 660 TERRE HAUTE, IN

POSTAGE WILL BE PAID BY ADDRESSEE

**CBS/Columbia House**

1400 NORTH FRUITRIDGE AVENUE  
TERRE HAUTE, IN 47812-9202







**Ziggy Marley & The Melody Makers—One Bright Day.** Look Who's Dancing, etc. (Virgin) 386-987

**Soul II Soul—Keep On Movin'.** Title hit; Back To Life; Feel Free, etc. (Virgin) 386-037

**Aerosmith—Pump.** Love In An Elevator; Janie's Got A Gun, etc. (Geffen) 388-009

**Jefferson Airplane.** Plane: Summer Of Love; Now Is The Time; many more. (Epic) 385-906

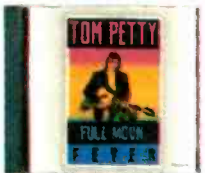
# ANY 8 CDs FOR A PENNY AND A CHANCE TO GET ONE MORE CD—FREE!

plus shipping/handling with membership

**Beastie Boys—Paul's Boutique** (Capitol) 383-786  
**Stray Cats—Blast Off!** (EMI) 381-442  
**Stevie Nicks—The Other Side Of The Mirror** (Modern) 381-103  
**Jody Watley—Larger Than Life** (MCA) 381-061



**Don Henley—The End Of The Innocence** (Geffen) 383-802  
**Guns N' Roses—GN'R Lies** (Geffen) 376-087  
**Jeff Healy Band—See The Light** (Arista) 375-873



**Tom Petty—Full Moon Fever** (MCA) 382-184  
**Kenny Rogers—Something Inside So Strong** (Reprise) 381-749  
**Mica Paris—So Good** (Island) 381-731  
**Expose—What You Don't Know** (Arista) 381-715  
**Barry Manilow** (Arista) 381-707

**k.d. lang And The Reclines—Absolute Torch & Twang** (Sire) 381-624  
**Ezo—Fire, Fire** (Geffen) 381-616  
**Danger Danger** (Imagine) 383-398

**The Best Of The Dregs—Divided We Stand** (Arista) 386-979

**Partridge Family—Greatest Hits** (Arista) 386-961

**Best Of Cher** (EMI) 381-509

**The Best Of Canned Heat** (EMI) 380-832

**Roy Orbison—The All-Time Hits, Vols. 1 & 2** (Columbia Special Prod.) 377-945

**Dion and The Belmonts—Their Best** (Laurie) 369-074

**The Very Best Of Poco** (Epic) 367-623

**Humble Pie—Smokin'** (A&M) 367-573

**Marvin Gaye—Greatest Hits** (Motown) 367-565

**Joni Mitchell—Court and Spark** (Asylum) 367-102

**The Who—Greatest Hits** (MCA) 365-361

**Alice Cooper—Billion Dollar Babies** (Warner Bros.) 363-531

**Johnny Mathis—In The Still Of The Night** (Columbia) 383-042

**Little Feat—Feats Don't Fall Me Now** (Warner Bros.) 363-523

**Best Of The Spencer Davis Group—Featuring Steve Winwood** (EMI) 362-335

**Grand Funk Railroad—Grand Funk Hits** (Capitol) 359-828

**Grateful Dead—Workingman's Dead** (Warner Bros.) 358-887

**Best Of The Doors** (Elektra) 357-616/397-612

**Yes—Close To The Edge** (Atlantic) 351-965

**Traffic—The Low Spark Of High Heeled Boys** (Island) 351-924

**Best Of Mountain** (Columbia) 351-890

**Rolling Stones—Sticky Fingers** (Rolling Stones Rec.) 350-645

**Best Of Procol Harum** (A&M) 344-457

**The Byrds—Greatest Hits** (Columbia) 342-501

**Best Of Kansas\*** (CBS Assoc.) 327-742

**Warrant—Dirty Rotten Filthy Stinking Rich** (Columbia) 379-644

**Joe Cocker—Greatest Hits** (A&M) 320-911

**Elton John—Greatest Hits** (MCA) 319-541

**The Babys—The Babys Anthology** (Chrysalis) 312-256

**Creedence Clearwater Revival—20 Greatest Hits** (Fantasy) 308-049

**The Best Of Emerson, Lake & Palmer** (Atlantic) 306-969

**Electric Light Orchestra—Greatest Hits** (Jel) 300-095

**Iron Butterfly—In-A-Gadda-Da-Vida** (ATCO) 294-629

**Led Zeppelin—Houses Of The Holy** (Atlantic) 293-597

**Jackson Browne—The Pretender** (Asylum) 292-243

**The Band—The Last Waltz** (Warner Bros.) 291-948/391-946

**Best Of The Grateful Dead** (Warner Bros.) 291-633

**Milli Vanilli—Girl You Know It's True** (Arista) 379-610

**Led Zeppelin IV** (Atlantic) 291-435

**James Taylor—Greatest Hits** (Warner Bros.) 291-302

**Best Of The Doobie Bros.** (Warner Bros.) 291-278

**Eagles—Greatest Hits** 1971-1975 (Asylum) 287-003

**Linda Ronstadt—Greatest Hits** (Asylum) 286-740

**Jim Croce—Photographs & Memories: His Greatest Hits** (Sajaj) 246-868

**Santana—Greatest Hits** (Columbia) 244-459

**Janis Joplin—Greatest Hits** (Columbia) 231-670

**Simon & Garfunkel—Greatest Hits** (Columbia) 219-477

**Blood, Sweat & Tears—Greatest Hits** (Columbia) 214-650

**Sly & The Family Stone—Greatest Hits** (Epic) 196-246

**Bob Dylan—Greatest Hits** (Columbia) 138-586

**Fine Young Cannibals—The Raw And The Cooked** (I.R.S.) 379-214

**Neneh Cherry—Raw Like Sushi** (Virgin) 382-994

**Liza Minnelli—Results** (Epic) 382-333

**L.L. Cool J—Walking With A Panther** (Def Jam / Columbia) 381-988

**Great White—... Twice Shy** (Capitol) 381-178



**When Harry Met Sally—Original Soundtrack** (Columbia) 386-821

**Fleetwood Mac—Greatest Hits** (Warner Bros.) 375-782



## On The Cutting Edge

**Poi Oog Pondering** (Columbia) 389-213

**Red Hot Chili Peppers—Mother's Milk** (EMI) 389-205

**The Ocean Blue** (Sire/Reprise) 389-197

**Debbie Harry—Def, Dumb & Blonde** (Sire/Reprise) 389-130

**Swans—The Burning World** (Combat/Relativity) 387-613

**Mental As Anything—Cyclone Raymond** (Columbia) 389-049

**Icehouse—Great Southern Land** (Chrysalis) 387-043

**Big Audio Dynamite—Megatop Phoenix** (Columbia) 388-215

**Camper Van Beethoven—Key Lime Pie** (Virgin) 388-074

**Squeeze—Frank** (A&M) 388-058

**George Clinton—The Cinderella Theory** (Paisley Park) 387-134

**Fetchin Bones—Monster** (Capitol) 387-050

**Syd Straw—Surprise** (Virgin) 386-995

**Chris Isaak—Heart Shaped World** (Reprise) 386-144

**Paul Kelly And The Messengers—So Much Water So Close To Home** (A&M) 384-321

**Bryan Ferry / Roxy Music—Street Life** (Reprise) 384-230

**Bodeans—Home** (Reprise/Slash) 384-206

**The Call—Let The Day Begin** (MCA) 384-156

**The B-52's—Cosmic Thing** (Reprise) 383-877

**Lloyd Cole & The Commotions—1984-1989** (Capitol) 383-778

**Boris Grebenshikov—Radio Silence** (Columbia) 383-513

**The Cure—Disintegration** (Elektra) 382-093

**10,000 Maniacs—Blind Man's Zoo** (Elektra) 382-077

**Indigo Girls** (Epic) 381-269

**R.E.M.—Green** (Warner Bros.) 375-162

**New Kids On The Block—Hangin' Tough** (Columbia) 368-423

**Canadian Brass—The Gabrieli Album** (CBS Masterworks) 379-933

**The Chick Corea Akoustic Band** (GRP) 379-891

**Tone-Loc—Loc'ed After Dark** (Delicious Vinyl) 379-875

**Skid Row** (Atlantic) 379-602

**Madonna—Like A Prayer** (Sire) 379-594

**Martika** (Columbia) 379-149

© 1990 CBS Records Inc.

### SEND NO MONEY—JUST MAIL POSTPAID CARD

**CBS/Columbia House, 1400 N. Fruitridge PO. Box 1129, Terre Haute, IN 47811-1129**

Please accept my membership application under the terms outlined in this advertisement. Send my 8 Compact Discs and bill me only 1¢ plus shipping and handling. I agree to buy six selections at regular Club prices in the coming three years—and may cancel membership at any time after doing so.

**My main musical interest is (check one): (But I may always choose from any category)**

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> <b>Hard Rock</b><br>Rolling Stones,<br>Tom Petty | <input type="checkbox"/> <b>Soft Rock</b><br>Richard Marx,<br>Madonna       | <input type="checkbox"/> <b>Modern Rock</b><br>10,000 Maniacs,<br>The Cure      | <input type="checkbox"/> <b>Pop</b><br>Barbra Streisand,<br>Barry Manilow   |
| <input type="checkbox"/> <b>Heavy Metal</b><br>Great White,<br>White Lion | <input type="checkbox"/> <b>Black Music</b><br>L.L. Cool J.,<br>Bobby Brown | <input type="checkbox"/> <b>Easy Listening</b><br>Johnny Mathis,<br>Ray Conniff | <input type="checkbox"/> <b>Country</b><br><input type="checkbox"/> <b>Jazz</b><br><input type="checkbox"/> <b>Classical*</b> |

Mr. \_\_\_\_\_  
 Mrs. \_\_\_\_\_  
 Miss \_\_\_\_\_  
 Print First Name Initial Last Name

Address \_\_\_\_\_ Apt. \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

**Do you have a VCR?** (04)  Yes  No 160/590  
**Do you have a credit card?** (03)  Yes  No

Note: we reserve the right to reject any application or cancel any membership. These offers not available in APO, FPO, Alaska, Hawaii, Puerto Rico. Write for details of alternative offer. Canadian residents serviced from Toronto. Applicable sales tax added to all orders. \*Classical members serviced by the CBS Classical Club.

Send these 8 CDs for 1¢


**Extra Bonus Offer:** also send one more CD right now, for which I will be billed only \$6.95

...and I'm entitled to get this extra CD FREE!

--

LZS/F6 LZT/59

**The age of CD sound is here**—and you have a practical way to find the CDs you want. As your introduction to the Club, you can choose any 8 CDs listed in this ad—all 8 are yours for only 1¢, plus shipping and handling. And in exchange, you simply agree to buy 6 more CDs (at regular Club prices) in the next 3 years—and you may cancel your membership anytime after doing so.

**How the Club works:** About every four weeks (13 times a year) you'll receive the Club's music magazine, which describes the Selection of the Month—plus many exciting alternates, new hits and old favorites from every field of music. In addition, up to six times a year, you may receive offers of Special Selections, usually at a discount off regular Club prices, for a total of up to 19 buying opportunities.

If you wish to receive the Selection of the Month, you need do nothing—it will be shipped automatically if you prefer an alternate selection, or none at all, fill in the response card always provided and mail it by the date specified, you will always have at least 10 days in which to make your decision. If you ever receive any Selection without having 10 days to decide, you may return it at our expense.

The CDs you order during your membership will be billed at regular Club prices, which currently are \$12.98 to \$15.98—plus shipping and handling. (Multiple-unit sets may be somewhat higher.) After completing your enrollment agreement you may cancel membership at any time; if you decide to continue as a member, you'll be eligible for our bonus plan. If lets you buy one CD at half price for each CD you buy at regular Club prices.

**10-Day Free Trial:** We'll send details of the Club's operation with your introductory shipment. If you are not satisfied for any reason, return everything within 10 days and you will have no further obligation.

**Extra Bonus Offer:** As a special offer to new members, take one additional CD right now for only \$6.95. This discount purchase entitles you to choose an extra CD as a bonus FREE. And you'll receive your discounted CD and your bonus CD with your 8 introductory selections—that's 10 CDs in all! Send no money now—just mail the postpaid card.

Selections with two numbers contain 2 CDs and count as 2—so write in both numbers

**CBS/COLUMBIA HOUSE, Terre Haute, IN 47811**



# Two noted audio critics agree about the new PS-3 Speaker System:

**Howard Blumenthal**  
New York Times

"The speakers that have caught my ear in the past few months have been small and remarkably compact.

"...you can hear the bass evenly throughout the room regardless of where you put the woofer.

"The sound was lively, full of punch and power, and extremely true on the nuances..."

**Rich Warren**  
Chicago Tribune

"...the PS-3 satellites sound smooth and natural. They do their job with clarity..."

"The woofer continues the smooth work..."

"...impressive imaging. All the instruments and voices seem to be in just the right place.

"If the PS-3 speaker were sold like magic elixirs, I would have bought a case!"

*Don't choose any speaker system without first hearing and seeing the new PS-3. Visit a Design Acoustics dealer near you. Write today for dealer list, full reviews, and color brochure.*



**DA DESIGN<sup>®</sup> ACOUSTICS**  
An Audio-Technica Company  
1225 Commerce Drive, Stow, OH 44224 • (216) 686-2600

CIRCLE NO. 32 ON READER SERVICE CARD



**"...enjoy heavenly sound in the most comfortable headphones ever invented."**

Rich Warren Chicago Tribune  
Nationally Syndicated Audio Columnist

**Signet EP700 Extended Performance Dynamic Stereoheadphones**

Find out for yourself why noted audio critic, Rich Warren, is so enthusiastic about the new EP700 Stereoheadphones. Experience incredible sound and comfort at your nearby Signet dealer. Write for catalog and Signet dealer list today.

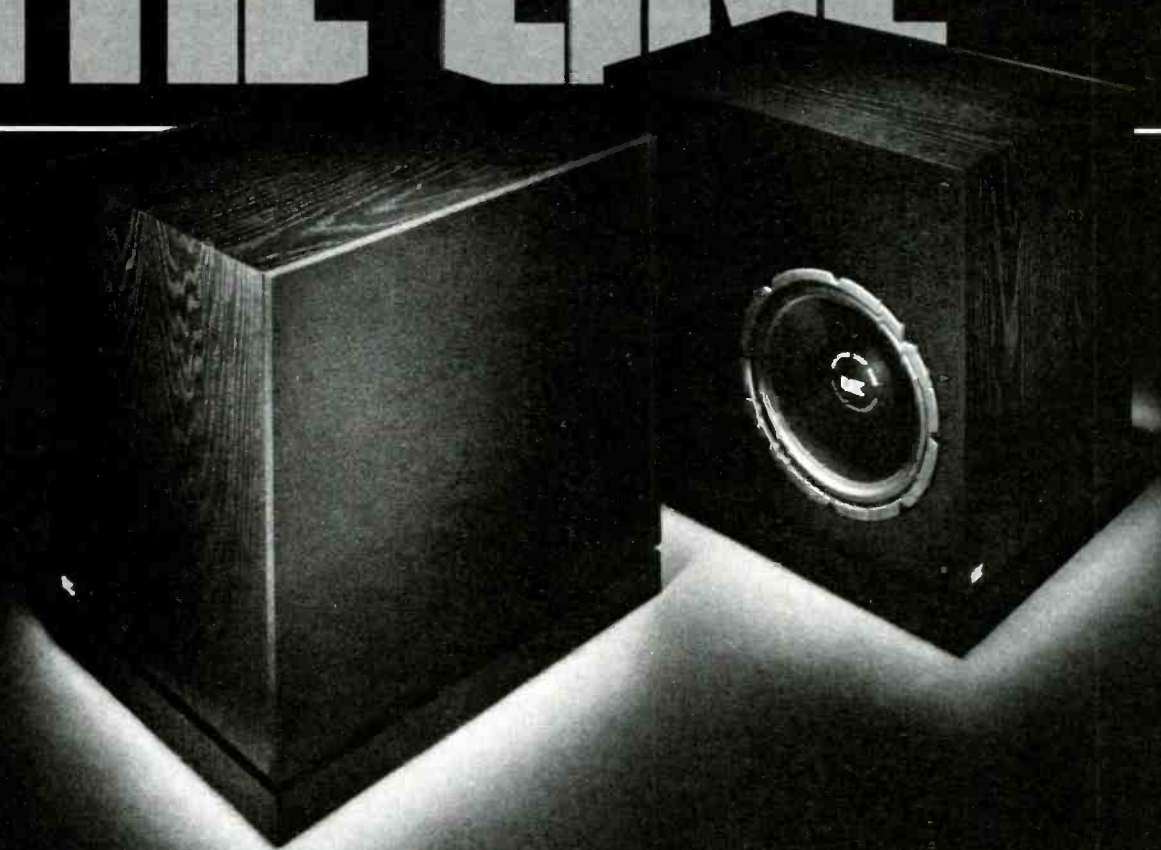
**signet** 

4701 Hudson Drive, Stow, OH 44224 • (216) 688-9400

CIRCLE NO. 105 ON READER SERVICE CARD

# TOP OF THE LINE

SUBWOOFERS



## MX-2000 Push-Pull Dual Driver Powered Subwoofer

The new standard of subwoofer excellence has arrived—the M&K MX-2000. Reaching a new pinnacle in performance, the MX-2000 powered subwoofer proudly becomes the top of the audio industry's *only* eight model line of subwoofers.

The MX-2000 achieves this status by bringing together great clarity and detail; tremendous low frequency power and impact; high sound power levels down to 20 Hz; plus the ability to seamlessly blend with any speaker.

The 300 watt continuous RMS MX-2000 incorporates M&K's remarkable new Horizontal Push-Pull Dual Driver System—producing the tightest,

cleanest and most powerful bass M&K has ever offered. This innovative system delivers superior transient performance; lowers harmonic distortion; reduces cabinet coloration and vibration; and couples remarkably well to the listening room.

### Building On Excellence

Fifteen years of unmatched experience puts M&K at the forefront of the subwoofer industry. No other manufacturer offers as wide a variety of styles and sizes of high-performance subwoofers. From the very affordable to the state-of-the-art, M&K subwoofers are unsurpassed in audio and audio/video system performance.

And, M&K offers the ultimate Satellite-Subwoofer systems, with a

choice of five highly acclaimed Satellite speakers. These small speakers are optimized for music or multi-channel surround-sound home theatre systems, and actually outperform large speakers.

### The Only Choice

Building on M&K's legendary high level of subwoofer excellence, the MX-2000 becomes M&K's finest achievement in a subwoofer—blending seamlessly with any speaker. For high-performance audio and audio-video systems, the MX-2000 is "the only choice."



MILLER & KREISEL  
SOUND CORP.

6397 Jefferson Blvd., Culver City, CA 90232 213/204-2854



Announcing the Sixth Annual

# RODRIGUES CARTOON CAPTION CONTEST

**H**EAR ye, hear ye. The Sixth Annual Rodrigues Cartoon Caption Contest is now officially open. Once again the editors of STEREO REVIEW have commissioned the artist Charles Rodrigues to supply a drawing, and we invite the readers to submit funny captions for it.

Fame and fortune may await you. The person who sends in the caption judged to be the most amusing will receive the original drawing shown below, a cash prize of \$100, and the distinction of seeing his or her name in this magazine along with the winning caption when the contest results are announced.

Anyone may enter, and there is

no limit to the number of times you may enter, but each caption submitted must be on a separate sheet of paper that also contains the clearly legible name and address of the person who submits it. Entries with more than one caption per page will be disqualified. All entries must be received by STEREO REVIEW no later than March 1, 1990.

In addition to members of the editorial staff of STEREO REVIEW and Rodrigues himself, the distinguished panel of judges will include the winners of the five previous contests: Thomas Briggie, Michael Binyon, Bruce Barstow, Matt Mirapaul, and Marc Welenteychik. Entries will be judged on the basis of

originality, appropriateness, and humor. The decision of the judges will be final.

So take a look at the drawing on this page and think a little. Who are those outlandish creatures? Are they androids, steroids, or Monsters from the Id? And what on earth are they doing with that terrestrial audio equipment and those household appliances? We editors want to know, Enquiring Minds want to know, and only you can tell us! Sharpen your wits, turn on your word processors or electric typewriters, and let those captions fly. Be creative, be inventive, and above all be funny. You are competing with thousands of other bright readers.

The winning caption (and a selection of runners up) will be published in the June or July issue. Every year we plan to announce the winner in June, but eliminating the duds from the really funny captions takes longer than we think, and so far we have never made it until July. This year we may surprise you.

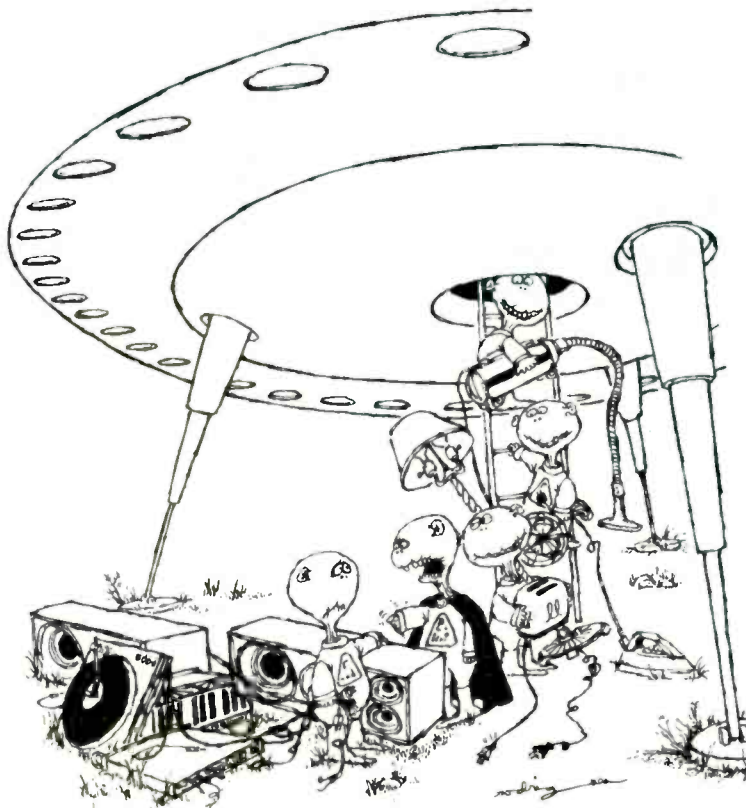
The usual restrictions and disclaimers are printed below. Send entries to:

Rodrigues Cartoon  
STEREO REVIEW  
1633 Broadway  
New York, NY 10019

*No purchase is necessary. Anyone may enter except the staff of Stereo Review and its parent company (Diamandis Communications Inc.) and their immediate families. All entries become the property of Stereo Review, and none will be returned. If you wish to be notified of the results of the contest by mail, send a stamped self-addressed envelope to the above address.*

*In the unlikely event of duplicate entries, the one first received will be considered the winning entry. The names of the winner and perhaps a dozen runners-up will be published in Stereo Review and may appear in promotional literature for the magazine. Submitting an entry will be deemed consent for such use.*

*Stereo Review will arrange the delivery of the prize; any tax on it will be the responsibility of the winner. The judges have every intention of reaching a decision in time for the publication of the results in the June 1990 issue, but Stereo Review reserves the right to delay the announcement until July if the response is as overwhelming as last year's.*





If you've vowed not to compromise this time around, consider the rich rewards of owning Carver. Each component includes unique innovations designed to confront and solve real-world sonic problems.

**Power unleashed: Simultaneous high current/high voltage output.** The TFM-25 is capable of delivering more simultaneous current, power and voltage into a wider range of speaker loads than any other competitively priced design: 225 watts per channel into 8 ohms 20-20kHz with no more than 0.5% THD. Its patented Magnetic Field Power Supply can draw up to 200% more line current, store more joules of energy in its unique distributed capacitance system, and then deliver up to 500% more current during musical peaks. With the right speakers, this kind of serious power can achieve a full restoration of the robust percussive attacks and lightning transients so

necessary to achieving musical realism from digital sources.

**Accuracy and musicality through Transfer Function Modification.** Over the past two decades, Bob Carver has worked on the problem of replicating one power amplifier's sonic signature in another dissimilar design. Through thousands of hours of painstaking tests and modifications, he has been able to closely match the TFM-25's transfer function with that of his highly acclaimed \$17,500.00 Silver Seven vacuum tube reference power amplifier. When you hear the warm, natural sound of the TFM-25, you'll know that Transfer Function Modification is an audible reality.

**New flexibility in a classic preamplifier design.** The Carver C-16 is at once a purist, "straight-wire-with-gain" design and a wonderful wealth of sonic options. Including individual left/right tone controls with variable



POWERFUL

MUSICAL

ACCURATE

# BE THE MASTER OF YOUR OWN SONIC DESTINY.

turnover, full-band Spectral Tilt, and of course Sonic Holography\* with a new Blend control that further extends the remarkable spacial restoration abilities of this exclusive Carver technology.

ACCD turns "dirty" FM into fresh air. Unlike any competitive tuner model, the Carver TX-12 can actually transform a noisy, multipath distortion-ravaged FM signal into clean, hiss-free music with full stereo separation. The key is the TX-12's Asymmetrical Charge-Coupled FM Detection circuitry. A lengthy name for a wonderfully fast solution to expanding your listening possibilities. When you experience ACCD's effect, you may consider the TX-12's full remote control, 20 FM/AM presets with preview scan, stereo/mono switch and dual antenna inputs, mere icing on the cake.



Hear why we stack up ahead of the competition. The TFM-25, C-16 and TX-12 are just three of over a dozen new Carver designs. Each is designed to rekindle your sense of musical wonder. It all begins with a visit to your nearest Carver dealer.

*To receive White Papers on Simultaneous High Current High Voltage Transfer Function Modification and Sonic Holography,\* details of Spectral Tilt and the name of your nearest Carver Dealer, call 1-800-443-CAVR, 8-5 PM Pacific time.*

## CARVER

CARVER CORPORATION, LYNNWOOD, WASHINGTON, U.S.A.  
Distributed in Canada by EVOLUTION AUDIO INC. 1-(416) 847-8888

**SO YOU WANT FIRST-RUN  
MOVIES, TOP-NOTCH  
CONCERTS, FULL-BLOWN  
OPERAS AND THE LATEST  
MUSIC VIDEOS,  
REPRODUCED WITH  
UNMATCHED SOUND  
AND DELIVERED RIGHT TO  
YOUR DOOR?**

**JOIN THE CLUB.**

For the biggest selection of laserdiscs available all you have to do is pick up the phone. Isn't technology wonderful?

**1 800 322 2285  
LaserDisc Fan Club™**

© LaserDisc Fan Club 1990

**IT'LL MAKE ANY  
LASERDISC PLAYER THOUSANDS  
OF TIMES BETTER.**



Free shipping, free membership, discount prices, the best selection, and a monthly catalog, all just a phone call away.

**1 800 322 2285  
LaserDisc Fan Club™**

© LaserDisc Fan Club 1990

## AUDIO Q&A

by Ian G. Masters



### Bass Localization

**Q** Why is the ear unable to locate sounds at low frequencies? Would listening through headphones make it easier?

ERNEST SWALLOW  
Atlantic View, PR

**A** In hearing, we get directional cues in at least two ways. If a signal reaches your right ear at a higher volume than at the left ear, you will tend to locate it somewhere to your right. This is the reason there are balance controls on most hi-fi equipment: to adjust for slightly off-center listening positions. Of much greater importance, however, is the time of arrival of a sound at each ear. If a sound reaches one ear a fraction of a second before it gets to the other, it will be perceived as coming from that side. We don't notice the time difference, but the brain translates it into directionality.

That doesn't work with continuous sounds, however. You have probably noticed that the tone broadcast by a TV station along with its test pattern is very hard to localize. This is because we need transients, arriving at our ears at slightly different times, to derive directional cues. Bass contains no transient information, so it can't be easily localized. (So-called bass transients, incidentally, are really high-frequency events at the beginning of low-frequency notes; the notes themselves are continuous.)

With headphones, assuming that they are capable of reproducing true low

bass, you could detect a low-frequency sound to one side if the level difference were great enough, but that would be a rare occurrence. Because most listening is through speakers, where bass directionality is unimportant, recording engineers almost always place the bass right in the center because it takes up slightly less room on a vinyl disc if recorded that way.

### VCR Rumble

**Q** When I play rented movies with hi-fi sound I can sometimes hear a sort of rumbling sound on the audio track. It goes away when I switch to normal audio. Not all rental tapes have this problem, and the ones I record myself sound fine. Is there anything I can do to prevent this?

ROB SLOAN  
Westmont, NJ

**A** This is a fairly common phenomenon with prerecorded videotapes containing audio-frequency-modulated (AFM) hi-fi soundtracks. Unlike normal recordings on analog audio tape, or the linear soundtracks on videotapes, an AFM audio soundtrack is discontinuous: Instead of being recorded down the length of the tape in one unbroken track, it is recorded diagonally across the tape by a pair of heads mounted on opposite sides of a rotating drum. When one of these heads reaches the end of a diagonal track, the other should be picking up the start of the next track, resulting in an uninterrupted signal. Sometimes the timing isn't perfect, however, resulting in a switching noise that sounds like a soft purr.

This doesn't happen as often with tapes that are played on the same machine that recorded them, because the alignment is the same for both operations. But there are often slight differences between the duplicating deck that made a rental movie and a home VCR that plays it back, resulting in the sound you describe. It is therefore a problem built into the tape, and there's not much you can do about it.

### Amplifier Dust Covers

**Q** Would it hurt my integrated amplifier to place a light cloth over the top to protect it from dust? Or is such protection even necessary?

TRENT MOBRAATEN  
Richfield, MN

**A** Except when it comes to turntables, dust is mainly an aesthetic problem and is unlikely to interfere very much with the performance of your other equipment. If you do live in a particularly dust-prone area, however,



# Not For Sale

Years ago, I was working my way through med school and bought my first system. The only place I splurged was on speakers. I bought a pair of KLIPSCH® HERESYS®, but to save money I got them in unfinished wood cabinets.

Now I'm a doctor and, frankly, making some bucks. So I recently went back to the same dealer and dropped a bundle for all new electronics and a different brand of speakers.

When I set up the new equipment, I wanted to hear the improvement, so I hooked up the old HERESYS next to the new speakers.

I was quickly disappointed. The old HERESYS sounded a lot better than the new speakers. They just had more life and clarity. I felt like I had wasted my money on speakers.

My dealer was great about it. He let me exchange those speakers for a beautiful new pair of KLIPSCHORNS®. They have the biggest, most lifelike sound I've ever heard.

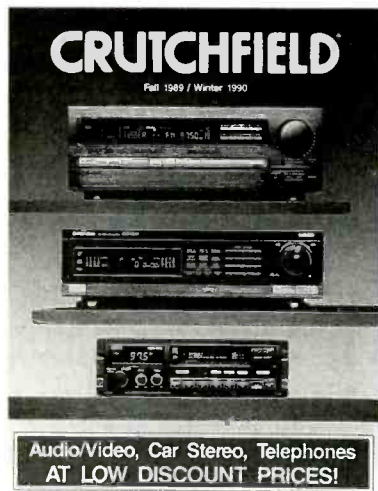
The old HERESYS? I'm not sure what to do with them but they're definitely not for sale. Neither are the KLIPSCHORNS.

---

*For your nearest KLIPSCH dealer, look in the Yellow Pages or call toll free, 1-800-223-3527.*

 **klipsch**  
A LEGEND IN SOUND.™

P.O. BOX 688 • HOPE, ARKANSAS USA 71801  
CIRCLE NO. 2 ON READER SERVICE CARD



You'll find the most helpful shopping information in the 116 page Crutchfield catalog.

# FREE Stereo Catalog

Refer to the Crutchfield catalog before buying your next car stereo, home stereo, or video product:

- 116 pages of helpful articles, consumer tips, charts, and installation guides.
- Color photos, complete descriptions and technical specifications on hundreds of the finest brand name products.

You get more value shopping at Crutchfield:

- Toll-free product advice, ordering, and customer service.
- 24 hour shipping.
- Absolute satisfaction guaranteed.
- Full 30-day return privileges.
- Discount prices on Sony, Pioneer, JVC, Jensen, Proton, Advent, Clarion, Kenwood, AR, Infinity, Bose, and many more!

Call or send this coupon now for your FREE Catalog

**800-336-5566**

Be sure to mention Stereo Review when calling

Name \_\_\_\_\_

Address \_\_\_\_\_ Apt. # \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Optional: Are you in the market for a personal computer, fax, or personal copier?

Yes  No

**CRUTCHFIELD**

1 Crutchfield Park, Dept. SR, Charlottesville, VA 22906

## AUDIO Q&A

a cloth over your amplifier is not a bad idea, assuming you don't mind how it looks, but I would recommend removing it when using the system. Amplifiers produce a fair amount of heat, and adequate ventilation is a must; even a light cloth might impede the air flow around an amplifier, causing it to overheat. In extreme cases this might cause it to shut down or even cause it some permanent damage.

### Unnecessary Inputs

**Q** I have amassed a collection of classical LP's and have no intention of switching to compact discs. I would like to buy a new preamplifier, but I don't want to pay hundreds of dollars for CD, tape, and auxiliary functions I will never use. Are there any that have only phono and tuner inputs?

FREDERICK LINDGREN  
Milwaukee, WI

**A** There are a number of specialized phono preamps on the market, at both the high and the low end, but these usually don't include any high-level (line) inputs. Preamps that do have line inputs almost always have several of them, as that is what most buyers require. In any event, additional high-level inputs for CD, hi-fi video, and the like involve only extra switch positions and a few extra input and output jacks. These do add to the cost, but not to the tune of hundreds of dollars; tens would be more like it.

### Cassette-Deck Compatibility

**Q** A cassette recorded on my own deck plays back perfectly when I play it at home and seems to sound fine in my car deck, but when I play it on a friend's machine—a very similar model from the same manufacturer—it sounds terrible. Tapes made on his recorder sound equally bad when played on mine. A well-respected local dealer has suggested that the decks may have been set up to different standards, even though they are made by the same company. Is this possible?

RANDY WRIGHT  
Grover, MO

**A** It's possible, but I doubt that's the problem. While it is certainly important for a cassette deck to be matched exactly to the tape used in it, and even machines from a single company may be optimized for different tapes, most such incompatibilities affect recording, not playback. Once you have successfully made a recording, the match between the tape and the playback deck is relatively unimportant. The major exception is the tape's out-

put level: If it is too high or too low, it may cause the Dolby noise-reduction circuits to mistrack. In your case, it would seem that there is nothing wrong with your ability to record, as your tapes sound fine when you play them back on your own machine.

I suspect that this is a case of head misalignment, probably to do with azimuth. If it is your recorder that's out of adjustment, your tapes would still play properly on it but nowhere else. Since they sound correct on your car deck, however, the problem is likely to be in your friend's machine. His tapes would still sound right on his own deck but not on yours, and vice versa.

### Dissolving Data

**Q** One of my recent CD acquisitions turned out to be less than enjoyable, so I decided to put it to use as a decoration in my fish tank. The colors reflecting off the disc looked great there, but after a few weeks I noticed that the lettering on the label was starting to become visible from the other side of the disc. After a month, the CD had become completely transparent except for the label information. My fish seem unaffected by this, but will the same thing happen in time to the rest of my collection from humidity in the air?

JEFF BELLANTE  
Brooklyn, NY

**A** That seems highly unlikely, but the returns on CD longevity aren't all in yet. There has been an incredible amount of press coverage—and numerous letters to STEREO REVIEW—about what is called "CD rot," but in truth nobody really knows the extent of the problem, or if it is a problem. Optical-disc technology is new enough that there isn't a large body of data about what happens to compact discs over time. Accelerated aging tests have been performed by a number of companies, but how well they represent real-world conditions isn't yet known.

What does seem clear is that a small number of discs do deteriorate, but that this is largely a matter of quality control on the part of the manufacturer. Air or moisture trapped within the disc, or allowed into contact with the aluminum because improperly chosen label inks have eaten through the protective layer, can cause the metal to oxidize. But this seems to be extremely rare and almost never happens with discs from the major labels.

In your case, I suspect you did get hold of a faulty disc and performed your own accelerated aging by submerging it (particularly if it was in a salt-water tank). Chances are you'll never get another one.



**NOW THE BEST MUSIC OFFER IS ON SALE!**

THIS OFFER EXPIRES FEB. 23RD

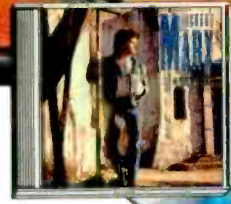
**NOT TO BE REPEATED IN 1990!**

GET **8** COMPACT DISCS

FOR THE PRICE OF ~~1~~  $\frac{1}{2}$

...with nothing more to buy ever!

When you buy your one album, we'll bill you at just **ONE HALF** the regular Club price.



**Richard Marx: Repeat Offender** 01118  
**Ghostbusters II/Soundtrack** • Bobby Brown, Run-DM.C., more. MCA 51964

**Bryan Ferry/Roxy Music: Street Life - 20 Greatest Hits** • E.G./Reprise 10490

**L. A. Guns: Cocked And Loaded** • I Wanna Be Your Man, etc. Vertigo 64121

**Poco: Legacy** • Original Lineup! Call It Love, When It All Began, etc. RCA 54060

**The Duke Ellington Orchestra: Digital Duke** • Satin Doll, etc. GRP Digital 63356

**Pavarotti: Volare** • Serenata, Occhi di fata, more. London Digital 25102

**Kenny G: Silhouette** • Tradewinds, title song, etc. Arista 00603

**Simon & Garfunkel: Concert In Central Park** • The Boxer, etc. Warner Bros. 44006

**Whitney Houston: Whitney** • So Emotional, others. Arista 52854

**Dirty Dancing /Original Motion Picture Soundtrack** RCA 82522



**Aerosmith: Pump** 63678

**Janet Jackson's Rhythm Nation 1814** I Miss You Much, more. A&M 7238E

**The Doobie Brothers: Cycles** • The Doctor, One Chain, more. Capitol 73187

**Tchaikovsky, 1812 Overture; more** Solit/Chicago. London Dig. 2517E

**The Beach Boys: Endless Summer** Good Vibrations, etc. Capitol 23559

**Herb Alpert: My Abstract Heart** • Wish You Were Here, etc. A&M 64339

**Metallica: ...And Justice For All** • One, Blackened, title song, etc. Elektra 00478

**Vangellis: Direct** • The Motion Of Stars, others. Arista 00470

**Reba McEntire: Sweet Sixteen** • Cathy's Clown, etc. MCA Digital 44435

**The Digital Fox** • Organist Virgil Fox Plays Bach, more. Bainbridge 62889

**Chick Corea: Akoustic Band** • Spain, Bessie's Blues, etc. GRP Digital 01006

**Dire Straits: Money For Nothing** • Their greatest hits! Warner Bros. 00713

**Eagles: Glt. Hits 1971-1975** • Lyin' Eyes, Best Of My Love, etc. Asylum 23481

**Best Of The Moody Blues** • Nights In White Satin, etc. Threshold 53900

**John Cougar Mellencamp: Big Daddy** Pop Singer, etc. Mercury 80064

**The Traveling Wilburys: Volume One** Warner/Wilbury 00711

**Roy Orbison: Mystery Girl** • She's A Mystery To Me, etc. Virgin 00842

**Tom Petty: Full Moon Fever** • I Won't Back Down, Free Fallin', etc. MCA 33911

**Def Leppard: Hysteria** • Armageddon II, Animal, Rocket, etc. Mercury 00927

**U2: Rattle And Hum** • Desire, Angel Of Harlem, more. Island 00596

**Madonna: Like A Prayer** • Cherish, title smash, Express Yourself, etc. Sire 01029

**Bon Jovi: New Jersey** • I'll Be There For You, others. Mercury 00516

**Dave Grusin: Collection** St. Elsewhere, more. GRP Digital 00929

**Horowitz In Moscow** Scarlatti, Mozart, more. RCA 25264

**Guns N' Roses: Appetite For Destruction** • Sweet Child O' Mine, etc. Geffen 70348

**10,000 Maniacs: Blind Man's Zoo** • Trouble Me, Headstrong, etc. Elektra 30236

**The Judds: River Of Time** • One Man Woman, Young Love, etc. RCA 01027

**Debbie Gibson: Electric Youth** • Lost In Your Eyes, etc. Atlantic 00827

**20 Years Of Jethro Tull** • Aqualung, Wond'ring Aloud, more. Chrysalis 00817

**The Jimi Hendrix Experience: Electric Ladyland** • Reprise 23362

**Tone-Loc: Loc-Ed After Dark** • Wild Thing, etc. Delicious 01033

**Michael Penn: March** • No Myth, Brave New World, more. RCA 83798

**Fleetwood Mac: Greatest Hits** • As Long As You Follow, etc. Warner Bros. 00796

**Stevie Nicks: The Other Side Of The Mirror** • Modern 70946



**Mötley Crüe: Dr. Feelgood** 33928

**Lynyrd Skynyrd's Innyrds** • Free Bird, Sweet Home Alabama, etc. MCA 01150

**Elvis Presley: 18 Number One Hits** • Love Me Tender, etc. RCA 72190

**Paul Shaffer: Coast To Coast** • When The Radio Is On, etc. Capitol 74050

**Dr. John: In A Sentimental Mood** • Makin' Whoopee!, etc. Warner Bros. 42500

**Anita Baker: Giving You The Best That I Got** • Good Love, etc. Elektra 00586

**Hank Williams, Jr.: Greatest Hits III** Warner/Curb 00840

**Great White: Twice Shy** • Once Bitten Twice Shy, etc. Capitol 01100

**Randy Travis: Old 8x10** • Honky Tonk Moon, etc. Warner Bros. 00008

**Nell Diamond: The Jazz Singer** • Love On The Rocks, etc. Capitol 32877

**Act Now! Offer Expires Feb. 23rd. Not To Be Repeated In 1990!**

Please accept my trial membership in the BMG Compact Disc Club and send me the 4 compact discs I have indicated here under the terms in this ad. I agree to buy just one more CD within the next year—and be billed for just one half the regular Club price. After that, I can choose 3 more CDs FREE! (A shipping and handling charge is added to each shipment.)

**RUSH ME THESE HITS NOW**  
 (Indicate by number):

1	2	3	4	5
---	---	---	---	---

I am most interested in the following type of music—but I am always free to choose from any category (check one only)

1  EASY LISTENING (Instrumental/Vocal Moods)  
 2  COUNTRY 3  HARD ROCK  
 4  POP/SOFT ROCK 5  CLASSICAL

MR.  MRS.  MISS

First Name \_\_\_\_\_ Initial \_\_\_\_\_ Last Name \_\_\_\_\_ (PLEASE PRINT)

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_ Area Code \_\_\_\_\_

Signature \_\_\_\_\_



Limited to new members, continental U.S.A. only. Current BMG CD Club Members not eligible for this offer. One membership per family. We reserve the right to request additional information or reject any application. Local taxes, if any will be added.

ZUAM CP



INSTANT HALF-PRICE BONUS SAVINGS!

SEE OTHER SIDE FOR DETAILS... AND 58 MORE HITS TO CHOOSE FROM



# Now The Best Music Offer Is On Sale!

Limited Time Offer...

GET **8** COMPACT DISCS  
for the price of **1 1/2**  
with nothing more to buy ever!

Offer Expires Feb. 23rd! Not to be Repeated In 1990!

Melissa Etheridge: **Brave And Crazy** No Souvenirs, more. Island 10503  
 Larry Carlton: **On Solid Ground** • All In Good Time, Josie, etc. MCA 53874  
 D.J. Jazzy Jeff & The Fresh Prince: **And In This Corner** • JIve 01020  
 The Cure: **Disintegration** • Lullaby, Plainsong, Lovesong, etc. Elektra 01109  
 20 Million Dollar Memories • By The Everly Brothers, others. Laurie 20773  
 Bobby Brown: **Don't Be Cruel** • Don't Be Cruel, Roni, etc. MCA 00621

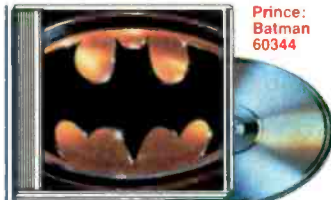
The Glenn Miller Orchestra: **In The Digital Mood** • GRP Digital 43293  
 Def Leppard: **Pyromania** • Photograph, Rock! Rock!, etc. Mercury 70402  
 Clint Black: **Killin' Time** • A Better Man, others. RCA 01112  
 Beastie Boys: **Paul's Boutique** • Hey Ladies, Egg Man, etc. Capitol 53976  
 Rhapsody In Electric Blue • J.R. Baker Synthesizer Newport Classic Dig. 34647  
 James Gayley: **Greatest Hits** • The Pink Panther, etc. RCA 73233

SAVE **50%**

### INSTANT HALF-PRICE BONUS PLAN

You get 50%-off bonus savings with every CD you buy at regular Club prices...right with your first purchase...unlike other clubs that first make you buy 4, 6 or even more.

R.E.M.: **Green** • Orange Crush, Pop Song 89, etc. Warner Bros. 00715  
 Eric Clapton: **Time Pieces** • I Shot The Sheriff, etc. Polydor 23385  
 Linda Ronstadt: **Cry Like A Rainstorm Howl Like The Wind** • Elektra 52221  
 Starship: **Love Among The Cannibals** It's Not Enough, etc. RCA 44488  
 Anderson, Bruford, Wakeman, Howe Brother Of Mine, etc. Arista 01115  
 Alabama: **Southern Star** • Song Of The South, Title song, etc. RCA 00914  
 Van Halen: **OU812** • Feels So Good, Cabo Wabo, etc. Warner Bros. 50913  
 Kiss: **Rachmaninoff, Piano Conc. No. 2; 6 Etudes-tableaux** • RCA Dig. 00915  
 An Evening With Louis Armstrong Perdido, Kokomo, etc. GRP Cresc. 70106  
 Bird: **Original Recordings Of Charlie Parker** • The Bird, etc. Verve 01044  
 The Cult: **Sonic Temple** • Fire Woman, Sun King, etc. Sire/Reprise 01015  
 Elton John: **Sleeping With The Past** Healing Hands, etc. MCA 10469  
 Expose: **What You Don't Know** • When I Looked At Him, etc. Arista 00937  
 Skid Row • 18 & Life, Youth Gone Wild, I Remember You, etc. Atlantic 01038  
 George Strait: **Beyond The Blue Neon** Title hit, etc. MCA Digital 01025  
 James Taylor: **Greatest Hits** • Fire & Rain, Mexico, etc. Warner Bros. 23790  
 Jazz CD Sampler • Ella, Armstrong, Getz, Basie, more. PolyGram 73406  
 Blue Murder • Valley Of The Kings, Jelly Roll, etc. Geffen 01050  
 Guns N' Roses: **GN'R Lies** • Patience, Reckless Life, etc. Geffen 00805  
 The Police: **Every Breath You Take—The Singles** • A&M 73924  
 Eurythmics: **We Too Are One** • Title song, etc. Arista 63954  
 George Benson: **Tenderly** • Stardust, Stella By Starlight, etc. Warner Bros. 10762



Prince:  
Batman  
60344

Fine Young Cannibals: **The Raw And The Cooked** • Good Thing, etc. I.R.S. 01068  
 ZZ Top: **Afterburner** • Sleeping Bag, etc. Warner Bros. 64042  
 Tina Turner: **Foreign Affair** • The Best, more winners. Capitol 32900  
 Tracy Chapman: **Crossroads** • Freedom Now, Subcity, more. Elektra 42496  
 The Rippingtons: **Tourist In Paradise** Earthbound, etc. GRP Digital 83654  
 Ziggy Marley And The Melody Makers: **One Bright Day** • Virgin 54093  
 Peter Gabriel: **Passion** • The Last Temptation Of Christ" etc. Geffen 63668  
 Phil Collins: **12 Inches** • Sussudio, One More Night, etc. Atlantic 44300  
 Led Zeppelin: **Houses Of The Holy** Dyer Maker, more. Atlantic 34321  
 Keith Whitley: **I Wonder Do You Think Of Me** • I'm Over You, etc. RCA 33768  
 Jive Presents: **Yo! MTV Raps** • De La Soul, Salt 'N' Pepa, etc. JIve 64407  
 Kronos Quartet, Reich, Different Trains, more • Nonesuch 01013  
 David Lanz: **Cristofori's Dream** • Free Fall, etc. Narada/MCA 00853  
 45's On CD, Vol. 3 • Keith, Eric Burdon & The Animals, etc. Polydor 00029  
 Steely Dan: **Decade (The Best Of)** Reeling In The Years, etc. MCA 54135  
 Billy Idol: **Vital Idol** • Mony Mony, White Wedding, more. Chrysalis 54038  
 Grateful Dead: **Built To Last** • Foolish Heart, We Can Run, etc. Arista 72230  
 Jethro Tull: **Rock Island** • Klissing Willie, The Rattlesnake, etc. Chrysalis 73901  
 Poison: **Open Up And Say...Ahh!** Capitol/Enigma 73989  
 Cher: **Heart Of Stone** • If I Could Turn Back Time, etc. Geffen 42874  
 Pat Metheny Group: **Letter From Home** Have You Heard, etc. Geffen Digital 50395  
 Miles Davis: **Amandla** • Cobra, Jo-Jo, Mr. Pastorius, etc. Warner Bros. 60246



Don Henley: **The End Of The Innocence** 01064

Start with **4** COMPACT DISCS  
pay only shipping and handling with membership.  
 Buy just **1** smash CD in one year's time and  
pay just half the price of one CD.  
 Then get **3** CDs of your choice.  
 Enjoy **8** CDs for the price of  
just 1/2 an album

Nothing more to buy...EVER!

### HERE'S HOW TO GET YOUR SAVINGS...

**Start With 4 Compact Discs Now.** First pick any 4 hit compact discs. Next, you agree to buy only 1 more CD not at regular Club prices—but at a whopping 50% off regular Club prices (which are usually \$14.98-\$15.98)...and take up to one full year to do it. Then you can take another **3** CDs FREE. That's 8 smash hit CDs for just half the price you'd expect to pay for just 1 great hit and there's nothing more to buy...ever! (A shipping/handling charge is added to each shipment.) But, hurry! This fantastic offer expires February 23rd. It's available for this limited time only and will absolutely not be repeated in 1990!

**Exciting "Members-Only" Benefits!** You'll receive the Club's exclusive magazine about every three weeks. It will highlight the Featured Selection in your favorite music category, plus hundreds of other hits. In all, you'll have 19 convenient, shop-at-home opportunities a year. If you want the Featured Selection, do nothing. It will be sent to you automatically. If you want other selections, or none, just indicate your preference on the card always provided...and mail it back to us, by the date specified. You'll always have at least 10 days to decide. But if you don't, you may return your Featured Selection at our expense. Cancel your membership by writing to us whenever you wish upon completing your enrollment agreement.

**FREE 10-Day No-Risk Offer!** Listen to your 4 introductory hits for a full 10 days. If not satisfied, return them with no further obligation. You risk nothing! You send no money now, so complete the postpaid reply card and mail it today! Offer expires February 23rd.

BMG Compact Disc Club, 6550 E. 30th St. Indianapolis, IN 46219-1194  
 TRADEMARKS USED IN THE ADVT ARE PROPERTY OF VARIOUS TRADEMARK OWNERS.

CD632A

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 5071 INDIANAPOLIS, IN

POSTAGE WILL BE PAID BY ADDRESSEE

BMG COMPACT DISC CLUB  
 P.O. Box 91412  
 INDIANAPOLIS IN 46209-9758

NO POSTAGE  
 NECESSARY  
 IF MAILED  
 IN THE  
 UNITED STATES



## THE TWENTY-FIRST CENTURY

by Ken C. Pohlmann

**A**LL technology ages. Some really choice ideas, like the wheel, age very gracefully, while others, like weapons, are obsolete almost before they are perfected. The compact disc falls somewhere in the middle. It is an outstanding piece of technology, although it is evolutionary rather than revolutionary. For example, its round shape, rotational motion, and spiral data track can be traced back to the earliest audio technology. But before the book is closed on the CD, a number of exciting new chapters will be written.

The CD is a great way to store data—audio and other kinds. The CD-ROM (CD read-only memory) has already capitalized on this for archiving large databases. A Navy cruiser, for example, requires for its running crew about 5.32 million pages of documentation weighing about 36 tons, but it could all be stored on about twenty CD's weighing about 10 ounces. A CD-V (CD video) stores digital audio and analog video on a laser-read disc, whether CD-size or 8 or 12 inches. Everything from music videos to operas is already available in the catalog.

Even if you don't want a lot of video on your CD, you may like a little. That is the aim of the CD+G (CD + graphics) format. It adds digital video information to audio discs. Every CD contains space for subcode information representing about 3 percent of the total disc. On a regular CD most of that space is unused—recorded with zeroes, in fact. On a CD+G, pictures of performers, lyrics, liner notes, etc. are stored in these empty subcode channels and can be displayed on a television set or video monitor. This idea initially bombed, but a new data-compression format permits greater storage capability and hence a better display.

Another CD format storing extra information in the subcode chan-

nels is the CD+M (CD + MIDI) format. MIDI (musical information digital interface) is the common control protocol for synthesizers and other electronic musical instruments. When MIDI information is stored on a CD along with audio information, the disc can act as a controller for a MIDI system, playing back MIDI instruments along with the recorded music, printing out scores, etc. Although CD+M will not interest most consumers, it could be a real treat for musicians.

The subcode area on discs is wide open for many other applications. It would be natural to link a CD player with a digital ambience processor. The acoustical characteristics of a particular performing locale could be stored in a CD's subcode and applied to the processor to re-create that set of acoustical characteristics. The hall size, equalization, reverbation time, and other parameters could all be set automatically so that playback was optimal in your listening room.

The CD-I (CD interactive) format stores a combination of audio, video, graphics, animation, and software on a single multimedia, interactive disc. When CD-I hardware and software are released later this year, look for some entirely new kinds of recordings that will work like a cross between Nintendo and a library card catalog. The CD-I format could be successful as both entertainment and education and may reveal wholly new ways of manipulating information. My personal feeling is that CD-I will provoke a revolution in publishing.

One of the hottest areas in audio engineering today is data compression. Rather than store the entire sequence of 16-bit words that make up a digital audio program, it is possible to store shorter words of compressed data. The CD-I format uses an encoding method called ADPCM (adaptive delta-pulse-code modulation) that offers several levels of data compression. For example, a single CD-I can store 20 hours of speech.

Although the 3-inch CD has been all but dropped in the U.S., it is certainly possible that small-diameter CD's could return. The computer industry is switching to 3½-inch

disks and has even introduced 2-inch disks. Thanks to data compression, it would be possible to store several hours of high-fidelity music on a 2- or 3-inch CD. If you're like me, your beloved CD collection is already a pain because of its size and weight and you'd welcome a smaller disc size provided it had high fidelity and a long playing time—even more so for portable and automotive applications.

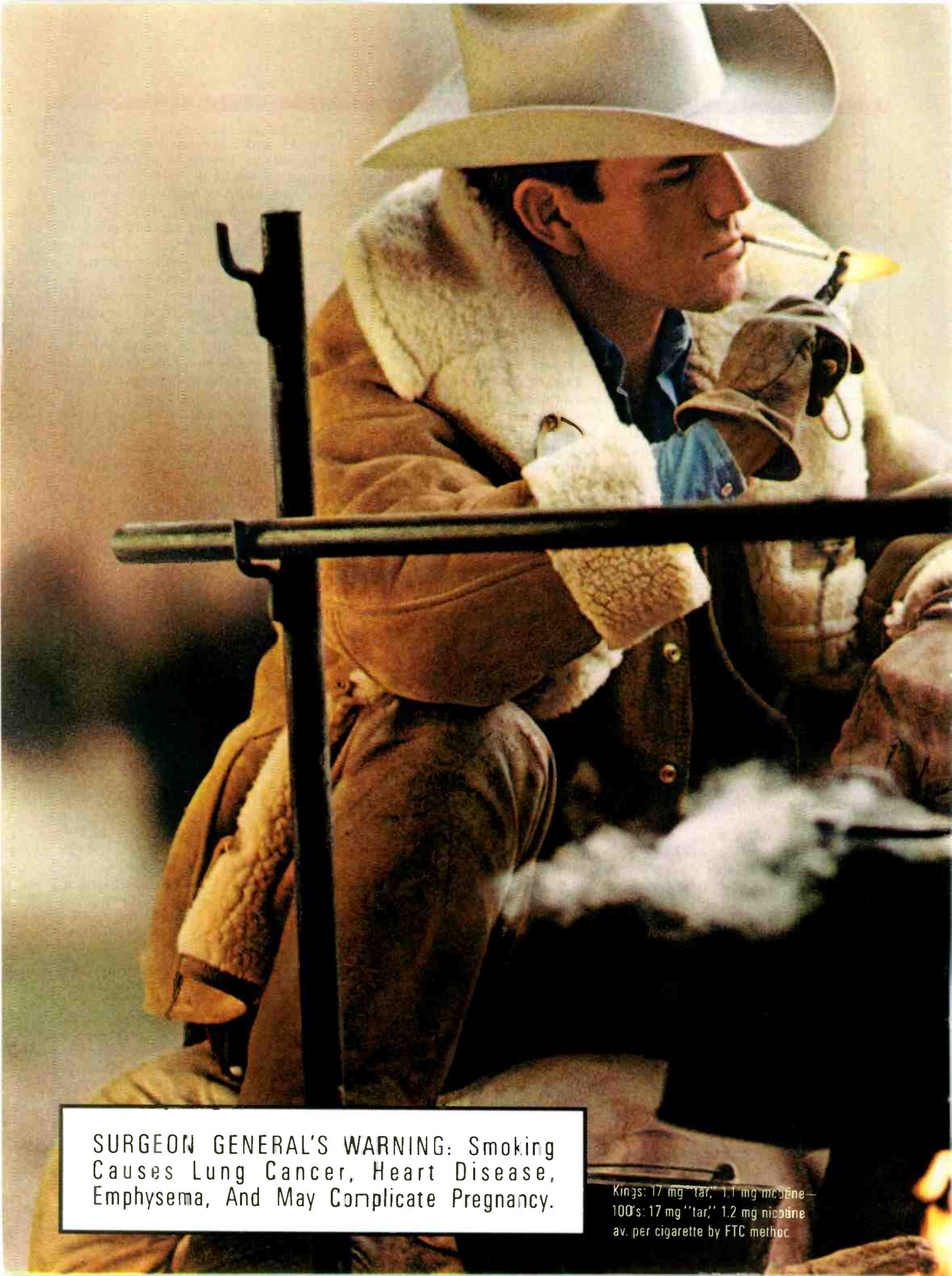
The CD will also evolve from a playback-only medium to one that is fully recordable and erasable. Exactly which manufacturer will be the first to announce a recordable audio CD, using which of several incompatible technologies, and at what price, is the next billion-dollar question in the industry.

Over its lifetime, the CD format will serve more and more applications, and the discs will become recordable, will store greater quantities of data, and will perhaps get smaller. But the essential problem will remain: It's a mechanical medium with a lot of spinning, moving parts that have a tendency to break or wear out.

Imagine a recorder in which the storage medium is stationary—that could be the CD's ultimate successor. Like the compact disc, it will be an optical system. The medium, perhaps the size of a credit card, will hold compressed data at a very great density. The recorder will use a laser to read and write data, and the beam will be deflected optically, sweeping across the surface of the card.

Sound fantastic? There are already prototypes. The only question is whether it will be worthwhile to market them. Eventually, solid-state memory devices will have enough capacity to hold compressed audio programs. At that point, music will probably be stored digitally on chips.

If its potential successors are already visible on the far horizon, should we shed a tear in anticipation of the CD's passing? No, not at all. Its ultimate success will be as a pioneer, paving the way for entirely new forms of both optical and electronic data storage and the recording/playback media of the twenty-first century. □



**SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy.**

Kings: 17 mg "tar," 1.1 mg nicotine—  
100's: 17 mg "tar," 1.2 mg nicotine  
av. per cigarette by FTC method.



# Come to where the flavor is.



Marlboro Red or Longhorn 100's—  
you get a lot to like.



## For music purists with an unlimited budget.

In the relentless pursuit of musical perfection, Infinity has created some of the world's best sounding speakers. Including one for the decidedly well-heeled: the 7½ foot, \$50,000 Infinity Reference Standard V. Acclaimed internationally as the most sonically-accurate speaker ever made. (With unlimited space and budget you might choose the imposing sound—and imposing presence—of the IRS V.)



Now Infinity introduces another Reference Standard for people whose passion for music must be in harmony with their living space: the Environmental Reference Standard Series.

Infinity ERS environmental in-wall speakers use no floor or shelf space, and they can be painted to match or accent your room's decor.

In short, they offer the best of both worlds—filling your rooms with

## For music purists with limited space.

spacious, extremely accurate stereo sound, but without imposing on your environment.

Audition the phenomenal ERS Series speakers and pick up your copy of "Infinity Answers Your Questions On Environmental Sound?" Only at a selected Infinity ERS dealer.

 **Infinity**  
We get you back to what it's all about. Music.

For literature and the name of your nearest Infinity dealer, call (800) 765-5556. In Canada, call (416) 294-4833, H. Roy Gray, Ltd.  
©1989 Infinity Systems, Inc. HA Harman International Company.



## SQUIGGLES AND PITS

Recovering the audio signal—the fourth in a series on the basics of audio.

BY IAN G. MASTERS

**H**OWEVER good the rest of an audio system might be, it will produce inferior sound if it doesn't have quiet, undistorted signals to work with. Those signals must come from the components feeding the inputs of your preamp, amplifier, or receiver. Most of us listen to music from a number of sources, including radio, records, compact discs, and tapes. In every case, however, the original signal—whether mechanical, optical, or electromagnetic—must be translated into a standard electrical audio signal that's strong enough to overwhelm the inherent noise of the system but not so strong as to cause overload distortion. Getting the audio level right is the easy part; it's in the conversion to an audio signal that things can go wrong.

### Record Playing

For most of the past forty years, high fidelity has meant the playing of vinyl LP's, and the equipment for that purpose has undergone tremendous refinement during that period. There are three main parts to a



record-playing system: the **phono cartridge**, which extracts the audio information from a record groove; the **tonearm**, which holds the cartridge and enables it to move across the record surface, guided by the groove; and the **turntable** itself, which supports the disc and causes it to rotate at a constant speed.

A phono cartridge consists of two elements: the **stylus**, which actually makes contact with the disc, and the **transducer**, which translates the stylus movement into an electrical signal. In all modern high-fidelity cartridges, the stylus is a diamond that's been carefully ground and polished to the desired size and

shape. For component-grade pickups, the original **spherical** or **conical** stylus tip has largely been superseded by **elliptical** shapes. At the top of the heap are higher-performance variations known generically as **multiradial** or **line-contact** styli, but they are basically similar to ordinary ellipticals. They are narrow from front to back to improve tracing of high frequencies, particularly in the inner grooves, and broad from side to side to conform to the geometry of the record groove.

The stylus is mounted on one end of a **cantilever** that carries its motion into the body of the cartridge to be converted to electricity. The great majority of high-fidelity cartridges are magnetic: The oscillations the stylus picks up from the groove cause variations in the relative positions of a magnet and a coil of wire, thus generating an electrical voltage. This can be done in either of two basic ways. A **moving-coil**, or MC, cartridge has a very small coil attached to the stylus assembly, so that the coil moves in relation to a fixed magnet. The more common **moving-magnet**, or MM, cartridge has a tiny magnet secured to the stylus assembly, so that the magnet moves within a fixed coil.

In a moving-coil cartridge, it is necessary to minimize the number of turns of wire on the coils to keep the stylus assembly's moving mass from becoming too great, which would impair the cartridge's high-frequency tracking ability. Use of such small coils often results in an electrical output from the cartridge so low that a step-up device—a transformer or additional preamplifier stage—is required ahead of the standard phono section in a preamplifier, integrated amplifier,

# The Orchestra.





# The Conductor.

You're looking at something unusual in the audio spectrum: a series of high-end components and an integrated remote that truly work in concert. Introducing the Mitsubishi® E-5200 audio system. A system designed so that the amp, tuner/preamp, graphic equalizer, dual cassette deck, CD changer and speakers on the left are under total and complete control by the programmable remote on the right. In fact, we call it a "responding" remote, because unlike other remotes ours features an LCD that not only shows you what the system is actually doing but also confirms that the tuner/preamp has executed your commands. So you and your orchestra are always in perfect harmony.



The LCD readout is instantly updated with a signal from the tuner/preamp, giving you a complete visual report at all times.

Program your 5-disc CD changer with digital optical output and 4X oversampling.

You have control of 360 degrees of Dolby Surround™ sound. Because you can adjust the volume of two 4-way speakers with laminated drivers up front, plus the two speakers in the rear.

You can even make adjustments to your seven-band graphic equalizer.

Turn on a 150-watt-per-channel\* amplifier.

Have complete control of a dual auto-reverse cassette deck featuring Dolby® B, C, HX Pro™ and full logic controls.

It's also compatible with all Mitsubishi video products, so you can program your VCR here.

© 1989 Mitsubishi Electric Sales America, Inc. Dolby, Dolby Surround and HX Pro are trademarks of Dolby Laboratories Licensing Corp. \*150-watts per channel minimum RMS, both channels driven into 8 ohms from 20Hz-20kHz with no more than 0.08% total harmonic distortion. For the name of your authorized dealer, call (800) 527-8888 ext. 245.



CIRCLE NO. 20 ON READER SERVICE CARD

# THE BASICS

or receiver. Moving-coil cartridges also tend to be expensive to manufacture. Moving-magnet cartridges, on the other hand, are cheaper to build and produce higher output, but their frequency response typically depends somewhat more on the impedance of the phono input and tonearm cables to which they are attached. With modern materials and designs, neither type has any inherent sonic advantage over the other.

The signal from a phono cartridge must be processed before it can be used by the rest of the audio system. The output level of even an MM cartridge is much lower than that of other signal sources, so every preamplifier must include an extra stage of amplification to bring the level up. This **phono-preamp** stage frequently includes a further boost for MC cartridges, often called a **head amp** or **pre-preamp**. All phono input stages contain equalization circuitry to restore flat frequency response by reversing the standard equalization applied to records when they are mastered.

The cartridge is mounted at the end of a tonearm, usually in a **headshell**. A tonearm is, in essence, simply a rod that holds the cartridge in the right place, but there are many possible variations. Most tonearms are pivoted, so that the cartridge moves through a shallow arc as it plays a record. On such an arm, the headshell is mounted at a slight inward slant, or **offset**, to minimize the difference between the angle of the playback stylus to the record groove and the perfect tangency achieved by the cutting stylus that engraved the groove in the original master disc. The greater this **horizontal tracking-angle error**, the greater the distortion produced by the cartridge.

One drawback of pivoted tonearms is that the offset produces an effect called **skating**: The stylus pulls toward the center of the record, reducing the force against the outer groove wall and thereby increasing the probability of mistracking. To counteract this effect, virtually all pivoted arms have **anti-skating** mechanisms. An alternative is to eliminate both skating and horizontal tracking-angle error entirely with a **tangential** arm, also called a

**straight-line-tracking** arm, which imitates the motion of the cutting stylus by moving straight across the record along a radius rather than through an arc. Such arms tend to be mechanically complicated, however, and therefore more delicate than pivoted designs.



*For most of the past forty years, high fidelity has meant the playing of vinyl LP's, and the equipment for that purpose has undergone tremendous refinement during that period.*

Whatever sort of tonearm is used, it must be matched with the cartridge mounted in it, since the two work as an integrated system. First, the cartridge must fit: Most are mounted in the headshell by means of screws, but some arms are designed to accept only modular **P-mount** cartridges that simply plug in. The mass of the cartridge is important because the effective total mass of the arm and cartridge affects their **low-frequency reso-**

**nance**, and that in turn affects the mechanism's ability to track warped records. Also, proper tonearm balance and correct **tracking force** depend on the cartridge mass the arm has to carry. (All of these factors are standardized in the P-mount system, so that you don't have to worry about them.) Tracking force is important because too much force will cause record wear, but too little will cause mistracking, where the stylus momentarily loses contact with the groove wall and then crashes back into it. This not only sounds terrible but usually causes permanent damage to the record.

Although separate tonearms (and armless turntables on which to mount them) are available, they are mainly restricted to very high-end systems. Usually a tonearm and turntable are sold together as a single unit.

Turntables come with a wide range of features, and there's a considerable price spread to boot. One thing that accounts for such differences is the functional complexity of the turntable, or how many automatic features are provided. The most elaborate turntables will put the stylus in the groove at the beginning of a side, lift it off again at the end, return the tonearm to its rest, and shut off the motor. This variety is often called a **fully automatic** turntable. More modest **semiautomatic** turntables simply lift the arm at the end of a side. And then there's the **manual** turntable, for which you have to do all the work. Virtually all turntables have some provision for **cueing**, lowering the stylus gently into the groove at a selected point.

Modern turntables use one of two methods for transmitting the rotation of the motor to the record platter. To isolate the platter from motor vibration, and thus reduce the low-frequency mechanical noise known as rumble, many models use a flexible rubber belt. Such **belt-drive** turntables are often somewhat delicate but can be very quiet; many high-end turntables use this drive method. Proponents claim that the belts also average out speed irregularities—wow and flutter—but all of today's high-quality turntables are about equal in this respect.

Most turntables have a **direct-drive** mechanism: The motor itself



# INVESTING IN SOUND?

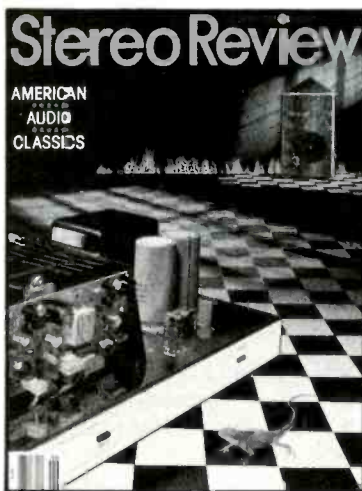


## Here's how to make it pay off!

*Stereo Review* is written for people who want to make smart buying decisions. We'll help you find the right stereo equipment—the *first* time you buy—and show you how to use it the right way. Because *sound information* is the key to getting an audio system that will give you what you really want.

We test over 70 stereo products in all price ranges each year. *Stereo Review's* product evaluations tell you how the components sound... identify unique features... compare models to others in the same price bracket. We warn you about design quirks, distortion, potential problems.

We make the components suffer—so you don't have to.



You'll appreciate our straightforward explanations of audio technology. Telling you how to get more out of your equipment. Announcing important breakthroughs. Clueing you in on professional maintenance tips. The kind of inexpensive know-how that can make a million-dollar difference in how your system sounds.

Even if you already have the perfect system, you'll value *Stereo Review's* record reviews. An average of 30 a month, in all categories of music. They'll ensure that your system's power isn't wasted on inferior recordings.

**Subscribe to *Stereo Review* at 77% OFF. It's one of the best sound investments you'll ever make!**

**1 YEAR (12 issues) JUST \$6.97**

**2 YEARS (24 issues) JUST \$13.94 3 YEARS (36 issues) JUST \$20.97**

STEREO REVIEW P.O. BOX 52033, BOULDER, COLORADO 80322-2033

Orders outside the U.S.: in Canada please add \$5 per year for postage; foreign orders add \$8 per year. Payment in U.S. funds must accompany order. Annual newsstand cost is \$30.45. The full one-year subscription price is \$13.94. Please allow 30 to 60 days for delivery of first issue.

## GREAT BUYS—AT A GREAT BUY: SAVE 77%

# T H E B A S I C S

turns at  $3\frac{1}{3}$  or 45 rpm and the platter is mounted directly on the motor shaft. Because of the motor's slow speed, its vibration is concentrated at very low frequencies. The exact speed is controlled electronically through a servo system. This permits very accurate speed regulation, particularly when a quartz oscillator is used to establish a reference frequency for the servo.

## Records Without Grooves

The conventional record-playing components are now giving way to the much more technically advanced **compact disc (CD)** system. In a CD recording, the audio signal is converted to a digital code, which is in turn molded into a plastic disc as a series of pits (actually, they're bumps—the pits are in the master from which the CD is made). In playback, a laser beam is reflected off the disc into a light-sensitive receptor; the deformations interrupt the beam, reproducing the code.

As on an LP, the information on a CD is recorded in a spiral, although in this case the spiral starts at the center of the disc and works outward. But because there are no physical guides (grooves) for the sensing device to follow, the laser must be located electronically, using positional information in the signal itself.

Once the laser-optical signal has been transformed into an electrical one, it passes through a **digital-to-analog converter**, or DAC, and emerges as a conventional analog audio signal. In the process, ultrasonic "images" of the audio signal generated by the conversion process must be removed by an **analog filter**. These images are centered on multiples of the **sampling frequency** used by the player, which in early machines was the same 44,100-Hz rate used for recording CD's—just slightly more than an octave above the top of the audio band. Consequently, a very sharp analog filter was necessary.

The nature of analog filters is to produce an effect called **phase shift**; the sharper the filter, the greater the effect. In addition, making an extremely sharp filter that has low noise and distortion and flat frequency response within the audio band is both difficult and costly. For

these reasons, most manufacturers now combine a relatively shallow analog filter with a **digital filter**. Digital filtering requires a process called **oversampling**, in which extra samples are mathematically derived from the samples coming off the disc and interpolated between them. Oversampling increases the amount of digital data and the playback



sampling frequency by two, four, or eight times (occasionally even more). The digital filter removes ultrasonic noise between the top of the audio band and the image centered on the oversampling frequency. This permits the use of a fairly simple analog filter that cuts in well above 20 kHz, reducing both cost and phase shift. Without oversampling and digital filtering, the analog filter's phase shift is measurable, and some feel, despite theoretical and experimental evidence to the contrary, that it is audible as well.

All CD's are recorded using an **error-correction** system. The audio signal is encoded with extra data that enable the circuitry in the player to detect missing or corrupted bits of information and, up to a point, to replace them with pre-

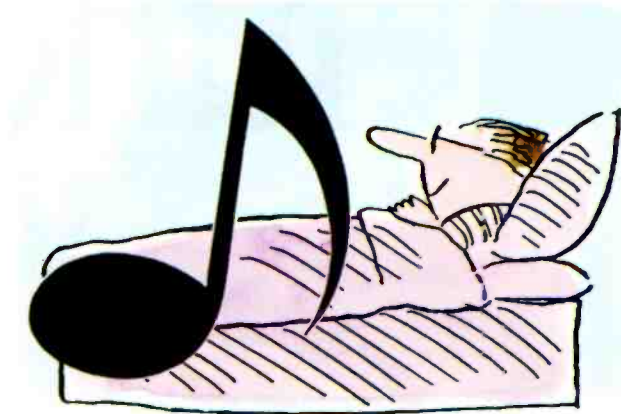
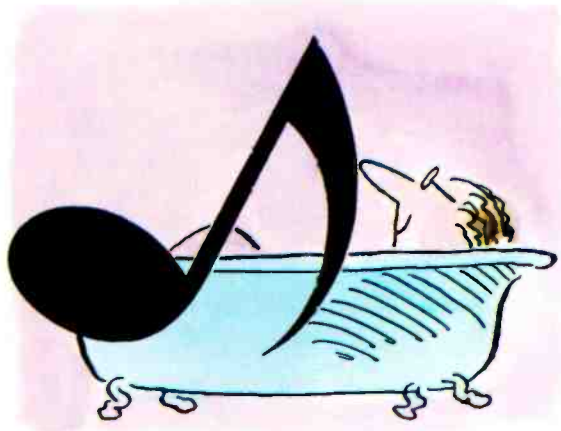
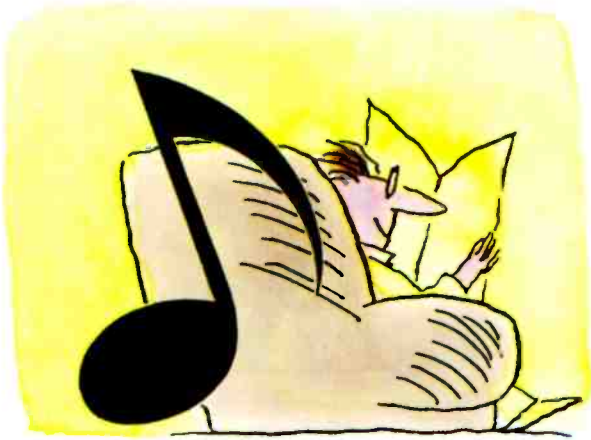
cisely the information that was supposed to be there. Error correction enables the player to ignore small scratches and pieces of dirt on a disc and to keep the audio signal unimpaired when the laser beam strays momentarily from its path; such transitory problems are inaudible unless they go beyond the error-correction circuit's ability to cope with them. Players vary in their ability to take advantage of this system, the higher-priced units usually being somewhat better at it than their more modest brethren.

One problem with digital audio is that until the data are converted to analog, the audio signal is at very high frequencies—radio frequencies, in fact—which can sometimes cause interference in the player's analog circuits. To reduce this interference, many manufacturers try to separate the digital portion of a player from the analog portion by providing for an external DAC, which may even be part of the amplifier rather than of the CD player itself. Moving the signal from the player to the converter therefore requires a **digital output**. Early ones were **coaxial**, using a conventional RCA-type jack and a wire between the player and the DAC. Many later players either replace or supplement the coaxial digital output with a **fiber-optic** output, which is much less susceptible to cable losses between parts of the system.

Most of the other differences between CD players have to do with their flexibility of operation. The ability to **program** complex sequences of tracks is a common feature of today's players, for instance. Recognition of favorite discs and storage of the sequence of selections you like to hear is another. An increasingly popular option is the **CD changer**. Changers can hold anywhere from five to twelve discs at a time and program track sequences that intermix cuts from any of the discs. Most current machines will accept 3-inch CD's, and a few will play CD-V (CD video) discs as well. Usually the latter are **combi-players**, which can handle all optical discs, audio or video, including full-size 12-inch videodiscs. □

*Next: Amplifiers, preamps, tuners, and receivers.*





Turn on, tune in, turn up and enjoy your  
Adcom music system everywhere...

# Introd Adco Tuner



Adcom announces a new concept in home music systems. Through a revolutionary approach to its remote control system, the new Adcom GTP-500 II tuner/preamplifier gives you full control of your entire music system from any room. Together with any one of Adcom's critically acclaimed power amplifiers, this unique audio product will give cost-minded, serious music lovers a superior alternative to the common AM/FM receiver. And with optional speakers and remote sensors you will be able to turn on, and listen to your music system anywhere in your home.

## Complete System Control At Your Command

The full function, wireless remote control system of the GTP-500 II offers superior flexibility and integration with other components. Control your system's power on/off, select your favorite pre-programmed FM and AM stations, scan the entire FM dial, adjust volume level and select different sources... all with Adcom's handheld remote controller.



# Using the new Adcom GTP-500 II /Preamplifier



To enjoy your Adcom music system throughout your home, simply add a pair of loudspeakers and an Adcom remote sensor in each room. Your Adcom remote controller will perform all of its remote functions, giving you full control of your system. (In some cases, it will be advisable to use one of Adcom's multiple speaker selectors, so please discuss your system requirements with your Adcom dealer.)

Remote control of the basic functions of Adcom's much heralded GCD-575 CD player is also achieved with the GTP-500 II remote system,

thereby simplifying control of your Adcom system. For total music system integration, the GTP-500 II remote sensors will also receive and re-transmit commands to any other remotely controlled component. Regardless of brand, you can control your cassette tape deck and VCR, using their respective controllers through the GTP-500 II's sensor system.

This remarkable and well thought-out remote control design gives you full command of your audio system and will virtually change the way you listen to music throughout your home.

*(over please)*

# The Adcom GTP-500 II: Its value is measured by its performance.

The overall performance of the new GTP-500 II is demonstrably superior through its evolutionary design improvements and the use of today's most advanced, high grade component parts. Adcom's fundamental design objectives of creating a quieter preamplifier, an FM tuner with improved RF performance and an AM tuner with flatter frequency response and reduced distortion were all achieved.

## The Preamplifier

Adcom's unique low-impedance RIAA compensation provides lower noise and distortion in the phono input stage. To further reduce noise and distortion in all stages, all switching devices are buffered.



GTP-500 II/GFA-555 (200 watts/ch)\*

And to simplify the signal path and minimize degradation, tone controls, contour and filters are out of the circuit until and unless they are needed.

To ensure that long term adherence to circuit design objectives is accomplished, 1% Roederstein resistors are used in all critical applications as well as a new low-loss, printed circuit board. Throughout all circuits, the GTP-500 II uses state-of-

the-art component parts for the highest performance possible during its lifetime.

## The AM/FM Stereo Tuner

Through a careful balance of sensitivity and selectivity, the GTP-500 II optimizes FM performance whether you're in an urban area troubled with excessively strong FM signals, or you're in a rural area with weak signals. Also contributing to a significant reduction in distortion is an improved IF stage. Indeed, the quality of FM stereo reproduction through the GTP-500 II is as good as the broadcast itself.

Sixteen stations, eight FM and eight AM, can be programmed for instant retrieval at the touch of a button. And, a bi-directional FM scan feature makes it easy to find your favorite source of FM stereo music.

## More Sound, Less Money

Adcom stereo components have gained a reputation for sounding superior to components costing two and three times as much. The new GTP-500 II promises to keep faith with this tradition of more sound for less money.

## Specifications

Preamplifier	FM Tuner
<b>Total harmonic distortion:</b> 0.004% <b>IM distortion:</b> 0.005% <b>Frequency response:</b> 5 - 65 kHz $\pm$ 0.5 dB <b>Maximum Output Level:</b> >10V <b>Input sensitivity for rated output:</b> Phono: 4 mV High level: 320 mV <b>Tone controls:</b> High filter: (20 kHz) - 4dB Low filter: (20 Hz) - 3dB <b>Output Impedance:</b> 100 $\Omega$ <b>Voltage:</b> 120V/50 - 60 Hz <b>Dimensions:</b> 17" $\times$ 3 1/4" $\times$ 12 3/4" D (432mm $\times$ 83mm $\times$ 324mm D) <b>Weight:</b> 16 lbs. (7.3 Kg.)	<b>IHF sensitivity, mono:</b> 12.2 dBf <b>Signal strength for - 50 dB quieting, mono/stereo:</b> 14/36 dBf <b>Capture Ratio:</b> 1.7 dB <b>AM suppression:</b> 60 dB <b>Alternate channel selectivity:</b> 75 dB <b>Total station presets:</b> 16 <b>Separation at 1 kHz:</b> 50 dB <b>THD/stereo at 1 kHz:</b> 0.09% <b>Maximum signal-to-noise ratio, mono/stereo:</b> 80/75 dB <b>Frequency response:</b> 30 - 15 kHz $\pm$ 0.5 dB <b>Antenna Impedance:</b> 75 $\Omega$ /300 $\Omega$ <b>Optional accessories for GTP-500 II:</b> Available with white front panel, XR/500 II and SPM/500 II remote sensors, RM-3 rack mount adaptors.

**ADCOM**<sup>®</sup>  
*details you can hear*

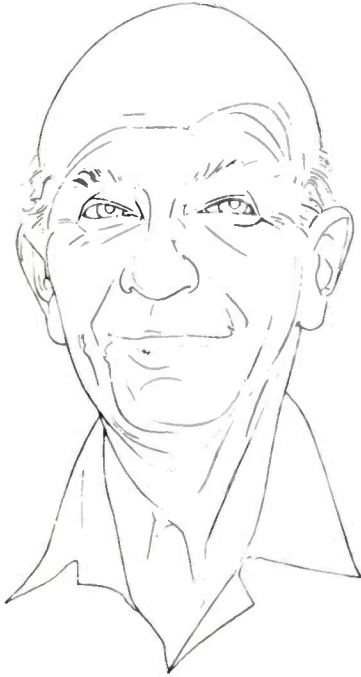
11 Elkins Road, East Brunswick, NJ 08816  
 U.S.A. (201) 390-1130

Distributed in Canada by PRO ACOUSTICS INC.  
 Pointe Claire, Quebec H9R 4X5

\*Power output, watts/channel, continuous both channels driven into 8 ohms, 20 Hz-20kHz 0.09% THD.



by Julian Hirsch



## HOLDING THE PRICE LINE

**P**ROBABLY you have noticed that in spite of the ongoing inflation throughout much of the world, the prices of many hi-fi components have remained fairly constant over the past several years. Some, notably CD players, have even *dropped* considerably in price during that time, even while performance has improved significantly.

Have you wondered how this could be so during a time period in which car prices have increased perhaps 50 percent and housing costs have doubled in many areas of this country? I have, especially since the several hundred audio components I have tested over that time have, in general, offered enhanced performance as well as new (and often useful) operating features, apparently without sacrificing reliability.

Having visited a number of manufacturers, both here and in the Far East, during those years, I have been aware of the trend toward automated assembly procedures as a means

of reducing manufacturing costs and improving reliability. Clearly, in a time of rising labor costs, this could be a major factor in helping to keep costs within bounds.

A number of years ago, on a visit to Matsushita Electric (Technics and Panasonic) in Osaka, I was intrigued to see a pilot assembly line producing stereo receivers with limited human participation. Not only did it include automatic loading of components onto printed circuit boards, and perhaps a certain amount of further automatic assembly, but the final testing (and, I believe, the alignment) of the receiver was done by a computer-controlled system. Only in the event of an actual fault was the product set aside for a human troubleshooter.

A few years later, I saw similar procedures being used on a regular production line at the Technics plant. Most hi-fi production was still being done in the conventional manner, however, along assembly lines facing conveyor belts that carried the equipment in process. At work stations along the line, the assemblies were removed by human operators as required, the necessary operations were performed, and then the assemblies were returned to the belt to proceed to the next step in the procedure.

Recently I visited Technics facilities in Sendai and Fukushima, which are certainly among the most highly automated electronic assembly plants currently operating. The change, in only a few years, was dramatic. As before, vast floors were filled with assembly lines, but the "workers" were now, for the most

part, robots (there were several robots for each human worker in the plants). In appearance these robots were much closer to the popular conception than previous factory machines, more versatile than the admittedly impressive circuit-board loaders that pick up components of all types and values and insert them with dazzling rapidity into the correct holes in the board. Incidentally, the loading machines have also been improved, operating with higher speed than previously—taking less than half a second for each insertion.

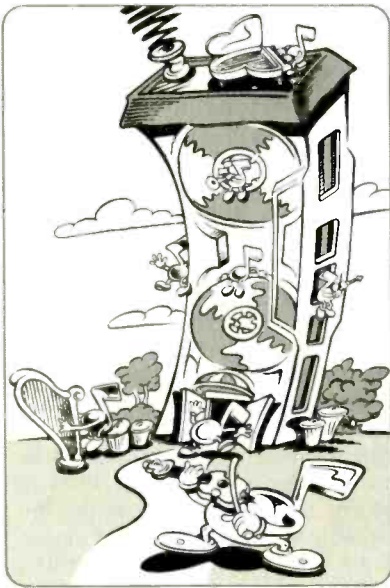
But the assembly robots are true general-purpose machines, used to perform specific operations but adaptable to a wide range of activities by changes in their computer programs. They join parts of an assembly much as a human being would, except that their "fingers" grip a part with just the right force and never seem to drop or break anything (I was envious, I must admit). I was impressed and amused to see one whose "finger" was a Philips-head screwdriver. It inserted four tiny screws into their holes and proceeded to tighten them with awesome speed and gentleness (no stripped heads on those screws).

Another unexpected operation was the soldering of several small components that apparently had to be inserted after the main assembly had been completed (perhaps they were selected trimming adjustments). Since the complete assembly could no longer be run through a wave-soldering machine, the robot's finger was essentially a small pencil-type soldering iron, with the solder fed through another finger. It reached in and delicately but firmly soldered each component lead into place a lot faster and better than most human beings could have done. And machines don't get tired or take coffee breaks . . .

The final wrap-up, literally, came after the assembly and test process (incidentally, human beings still do the final testing of such products as amplifiers or receivers, checking every aspect of their performance). Instead of having a person outside the test booth to wrap the finished product in plastic and box it for

### *Tested This Month*

*Vector Research  
VCD-410R CD Player  
dbx SF5000 Soundfield  
Speaker  
Nikko IA600 Integrated  
Amplifier  
Cambridge SoundWorks  
Ambiance Speaker  
Snell E/III Speaker*



## IS YOUR CLASSICAL MUSIC SUFFERING FROM POOR HOUSING CONDITIONS?



High resonance housing will put any tape in a nasty mood. Especially when pests, such as modulation noise, gnaw on the purity of digitally sourced music.

At TDK, we believe the formula for perfect reproduction includes not only technologically superior tape, but housing that enhances its performance.

Our incredible new SA-X, for example, features an ultra low resonance SP-ARII mechanism. By utilizing our unique co-molding technique, the unified two-layer shell realizes maximum total rigidity to improve reliability. Which drastically reduces modulation noise—an enemy of clear, pure sound that even noise reduction systems are powerless against.

This undesired “noise” is also attacked by SA-X’s revolutionary magnetic characteristics and smooth, flat tape surface. First, there are the densely packed and uniformly distributed ultra fine Super Avilyn magnetic particles. Then, there is the advanced dual coating technology.

Together, the result is an unbelievably quiet tape with an exceptionally low bias noise of -61.0 dB. Plus, low and high frequency MOLS of +5.0 dB and -6.5 dB respectively.

And SA-X, which provides transparent reproduction of the most powerful digital sources, is available in convenient lengths of 46, 60 and 90 minutes.

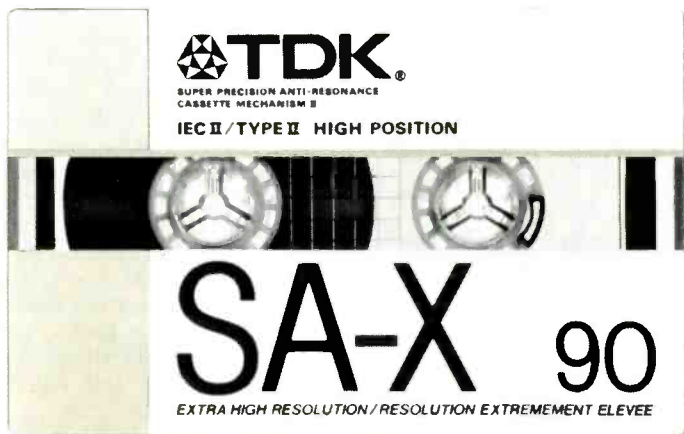
shipment, a machine does the wrapping, including heat-sealing the plastic, and the product moves to a vertical conveyor that takes it to a lower floor where (presumably) it is boxed—perhaps by a person, although I did not see that part of the operation.

When you look at the overall manufacturing process, it is not hard to see how the price line has

*The robot assembly machines in automated factories join parts together much as a human being would, but their “fingers” grip a part with just the right force and never seem to break or drop anything.*

been held in spite of constantly increasing labor costs in Japan as everywhere else. These machines work faster and more accurately than any human being, never tire or slack off, and are almost instantly retrainable for any other job by changing their computer software. Probably of equal importance is that there is no more opportunity for human error in assembly. Critical parts are inspected (also automatically) when they are received, and the machines insert them correctly (they stop automatically if something does not proceed according to plan). Presumably the reject percentage is extremely low and the reliability of the finished product is much higher than could have been guaranteed in the days of manual assembly.

Of course, these robots are expensive to manufacture, although they are made by another division of Matsushita, which also sells them to other companies. Nevertheless, it seems probable that this trend, even if not always carried to such a degree as at Matsushita, is responsible in considerable measure for the continued affordable prices and constantly improving performance and quality of consumer electronic products, including video and hi-fi equipment. □





# EXPENSIVE SOUNDING SPEAKERS!

Speakers are *the most important part* of your stereo system. It is the speaker that turns amplifier signal into sound and so ultimately determines what you hear. If your speakers do not perform well, your stereo system will simply not sound like music.

The search for musically satisfying speakers, however, can lead to some very expensive products. And if you have already bought those high priced speakers, then you better not listen to Paradigms. But if you haven't, better not miss them. Why? Because from the time they were first introduced, Paradigm's sheer musical ability utterly amazed listeners.... but what caused even more amazement was the *unprecedented low price*.

So go ahead, get expensive sounding speakers.... without the expense. Visit your authorized Paradigm dealer.... *and listen*.

## *The critics agree:*

"... For once we wholeheartedly agree... the Paradigm is most definitely a no-compromise two-way design capable of outperforming systems costing several times as much."

- *Hi Fidelity Magazine*

"... natural, open and clear...excellent depth... lots of hall sound... big, expansive soundstage... well defined... a rare achievement for any loudspeaker, but when the price is taken into account the Paradigm's performance must be considered as nothing short of remarkable."

- *Sound & Vision Magazine*

Sound & Vision



CRITIC'S CHOICE AWARD

# Paradigm<sup>®</sup>

*music... above all.*

In the U.S.: AudioStream, MPO Box 2410, Niagara Falls, New York 14302  
In Canada: Paradigm Electronics Inc., 457 Fenmar Drive, Weston, Ontario M9L 2R6

# Now that the digital Compact Disc is a musical triumph, Sony presents the encore.



## Introducing the world's first Digital Signal Processing Receiver.

Sony has news for the millions of music lovers who hailed our invention of the Compact Disc. That was merely our first act in digital audio. Now comes the world premiere of Act II: Sony AM/FM Stereo Receivers with DSP.

DSP stands for Digital Signal Processing, a Sony revolution that gives you note-by-note control over every aspect of your music. Yet with all this control, DSP actually maintains the Compact Disc's sound quality throughout your high fidelity system. This is technology no analog component can equal, resulting in sonic purity no analog component can match.

On Sony's STR-D2010 Receiver, DSP replaces conventional tone controls with the pinpoint precision of a digital parametric equalizer. We've equipped our Dolby® Surround circuitry with digital delay and digital noise reduction for eye-opening playback of movie soundtracks. And DSP places your music into a choice of Hall, Stadium and Live soundfields. Direct digital inputs for your Compact Disc player, digital dynamic suppression, and 130 watts per channel (front) plus 15 watts per channel (rear) combine to reserve a place in hi-fi history for the D2010.\*

To audition the STR-D2010 with DSP and the entire line of Sony Receivers, visit your Sony high fidelity dealer. And be prepared to applaud.

**SONY**  
THE LEADER IN DIGITAL AUDIO™

© Copyright 1989 Sony Corporation of America. All Rights Reserved. Sony and The Leader in Digital Audio are trademarks of Sony. Dolby is a trademark of Dolby Laboratories Licensing Corp. \*For those who read footnotes, the D2010 also has audio/video switching, programmable remote control, Sony's low-noise Direct Comparator FM tuning, discrete output transistors and front power output of 130 watts per ch., cont. RMS, both ch. driven into 8 ohms, 20-20,000 Hz, 0.008% THD; rear power output of 15 watts per ch., cont. RMS, both ch. driven into 8 ohms, 20-20,000 Hz, 0.08% THD.

CIRCLE NO. 106 ON READER SERVICE CARD





## VECTOR RESEARCH VCD-410R COMPACT DISC PLAYER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HOUGH priced near the bottom of the range for home compact disc players, the Vector Research VCD-410R features dual 18-bit digital-to-analog (D/A) converters and eight-times-oversampling (at 352.8 kHz) digital filters. Its operating features include a repeat function for one track, an entire disc, or any selected portion of a disc. The player is programmable to play as many as twenty tracks in any order.

The display window, with its highly legible bright-yellow characters, normally shows the track number and its elapsed time as well as the status of the play, pause, and repeat functions. The usual transport-control buttons, including track skip and fast scan in both directions, form a row at the bottom of the panel. The play/pause button

toggles between those functions. Above the transport controls are several narrow buttons, including programming controls marked STORE, CALL, PLAY, and CLEAR, a REMAIN button that changes the display to show the remaining time on the disc, and an INDEX button to replace the track number with the current index number where applicable.

The VCD-410R does not provide direct keypad access to numbered tracks, but they can be selected by multiple operations of the skip buttons. In programming, after a track number is selected, pressing STORE enters it into the memory. The CALL button displays the programmed sequence, and the program PLAY button starts playback of the sequence. The CLEAR button erases the current track from the program (in the stop

mode, it erases the entire program).

The disc drawer opens and closes at the touch of a button and accommodates CD-3's as well as normal-size CD's. The front-panel headphone jack has no volume adjustment. The rear apron contains only the two audio line outputs. The player is furnished with a fifteen-key infrared remote control that duplicates all its front-panel controls except power switching and disc-drawer operation.

Dimensions of the Vector Research VCD-410R are 17 x 11 x 3 1/4 inches, and it weighs about 8 1/2 pounds. Price: \$269.95. Vector Research, Dept. SR, 1230 Calle Suerte, Camarillo, CA 93010.

### *Lab Tests*

The VCD-410R's frequency response without de-emphasis was flat within 0.05 dB from below 20 Hz up to about 15,000 Hz, falling to about -0.3 dB at 20,000 Hz; maximum de-emphasis error was -0.24 dB at 16,000 Hz. Channel separation decreased steadily from approximately 125 dB at 100 Hz to about 80



# RISING ABOVE THE CD JUNGLE







For most people, buying a CD player is a lot like taking a short stroll along the Amazon. And forgetting your map. Sooner or later, you're going to get lost.

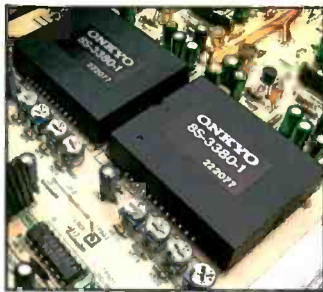
That's because the "jungle of misinformation" about CD players makes it difficult to know what's really important. And what isn't.

Take a quick look at some of the claims—digital bit structures (what are they, anyway?) ranging from 1 to 45. Oversampling rates from 2x to (quick, who's got the latest?) 16x. All this for the sake of a numbers race. And not necessarily for the sake of the music.

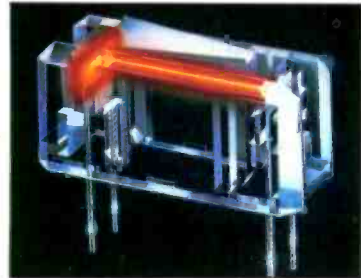
Well, Onkyo offers you a real way through this undergrowth.

Of course, we have an impressive variety of both single- and multiple-disc players. With extraordinary levels of technology in even our most affordable models.

For example, we individually calibrate the critical Digital-to-Analog Converters in our DX-1700 and DX-2700 players to fine-tune their linearity and minimize distortions peculiar to the digital process.



Most of our models also benefit from Opto-Coupling, an Onkyo-developed technology that transmits data optically rather than through conventional wiring for more accurate CD sound.



But for Onkyo, outstanding products are just the beginning. We'll make your journey through the CD jungle even easier with two indispensable guides.

The first is an in-depth explanation of digital bit structures and how they affect musical performance. The second is a down-to-earth journey through all the claims you're likely to run into, as well as the hard facts you'll need to master the CD jungle. And they're available at your Onkyo dealer now.



Onkyo. We'll give you more than just superb CD players. We'll also give you the knowledge you need. Because it is a jungle out there. And only the fittest survive.

# ONKYO®

200 Williams Drive, Ramsey, N.J. 07446 201-825-7950

For your nearest dealer, call 1-800-888-8237 and enter code 34510 when asked.



## TEST REPORTS

to 85 dB at 20,000 Hz. Interchannel phase shift was between 0 and  $-0.3$  degree from 5,000 to 17,000 Hz, rising to  $+0.6$  degree at 20,000 Hz.

The linearity of the D/A converters was very good down to  $-60$  dB, with a slight error (less than 1 dB) appearing at  $-70$  dB. At  $-90$  dB, the output of one channel was 4 dB high while that of the other channel was 2 dB low. Total harmonic distortion (THD) plus noise at a 0-dB level was a constant  $-90$  dB (0.0032 percent) from 20 to 20,000 Hz. At 1,000 Hz, the THD plus noise was  $-94$  dB (0.002 percent) from  $-20$  to  $-80$  dB, rising to a maximum of  $-90$  dB (0.0032 percent) at 0 dB.

The noise level during a "zero-infinity" (null-signal) track on a test disc was less than  $-110$  dB in one channel and less than  $-125$  dB in the other from 30 to 20,000 Hz. The A-weighted noise level was  $-103$  dB in one channel and  $-112$  dB in the other. Quantization noise during playback of a 0-dB, 20-Hz test signal was  $-94$  to  $-95$  dB, and the EIAJ dynamic range was 96 to 97 dB. The operating frequency (speed) error was only  $-0.0032$  percent.

The VCD-410R had above-average error-correction ability, as evi-

denced by the way it played the calibrated defects on the Pierre Verany #2 test disc. It was able to play through information-layer interruptions up to 2,000 micrometers long, although when it first entered the 1,500- and 2,000-micrometer sections of the disc we heard one or two faint clicks. These clicks were apparently associated with the transition from an unmodulated section of the test disc to this very severe and demanding test, in which the low-priced VCD-410R actually outperformed any other player we have tested to date.

On the other hand, the VCR-410R was unusually sensitive to physical impact. Even a light finger tap on any part of the player's exterior was enough to produce a crackle of noise from mistracking, and a moderate finger tap caused an interruption in playback, often accompanied by a jump to another track.

### Comments

The Vector Research VCD-410R is an impressive example of how rapidly advancing technology can bring last year's "state-of-the-art" performance to today's modestly priced equipment. It was not long

ago that only a few prestigious, and fairly expensive, CD players boasted of their "new" 18-bit D/A converters and four- or eight-times-oversampling digital filters. And now we see those features in a truly budget-priced product. In such key categories as noise, distortion, and channel separation, this player met very

*The Vector Research VCD-410R is an impressive example of how rapidly advancing technology can bring last year's "state-of-the-art" performance to today's modestly priced equipment.*

high standards. And it outperformed all others in our experience in its error-correction ability.

But the VCD-410R's low price does impose some limitations. Although the player has a number of the convenience features common to most others, its operation can be a bit cumbersome. For most people, stepping to Track 11 by pressing a button eleven times will pose no great problem, but when we had to press that button fifty or sixty times to get to some of the tracks on our test discs, we really missed direct keypad access to any track. Also, while the headphone volume was very good, with no level control the headphone output was much less useful than it might have been.

Our major criticism of the VCD-410R concerns its sensitivity to physical impact. Even the act of placing an empty CD jewel box on top of it would often send a crackling noise through the speakers or jump the laser pickup to another part of the disc. We have no way of knowing how typical this is of the product, but it unquestionably marred its otherwise superb performance. On the other hand, once you are aware of the problem, it is not difficult to avoid jarring the player while it is operating. And then you have a \$270 CD player that can hold its own against many others with higher prices.

**Circle 140 on reader service card**

### FEATURES

- Eight-times-oversampling (352.8-kHz) digital filters
- Dual 18-bit D/A converters
- Display of current track number and elapsed time in track, total number of tracks at loading; switchable to show current index number and remaining time on disc
- Programmable to play as many as twenty tracks in any order
- Repeat of programmed sequence, single track, whole disc, or user-selected portion
- Track skipping and fast scan (with audible output) in both directions
- Can play CD-3's without an adaptor
- Front-panel headphone jack
- Infrared remote control duplicates front-panel controls

### LABORATORY MEASUREMENTS

**Maximum output level:** 2.02 volts  
**Total harmonic distortion at 1,000 Hz:** 0.0032% at 0 dB, 0.002% from  $-20$  to  $-80$  dB  
**Signal-to-noise ratio (A-weighted):** left channel, 103 dB; right channel, 112 dB  
**Channel separation (minimum):** 122 dB at 100 Hz, 80 dB at 20,000 Hz  
**Maximum interchannel phase shift (5,000 to 20,000 Hz):** 0.6 degree at 20,000 Hz

**Frequency response:**  $+0$ ,  $-0.35$  dB from 7 to 20,000 Hz  
**Low-level linearity error:**  $+1$  dB at  $-70$  dB,  $+2$  dB at  $-80$  dB,  $+4$  dB at  $-90$  dB  
**Cueing time:** 3 to 4 seconds  
**Cueing accuracy:** A  
**Impact resistance:** top and sides, D  
**Defect tracking:** tracked 2,000-micrometer defects on Pierre Verany #2 test disc



# SERIOUS REALISM.



*Engineered for the sophisticated audio enthusiast, the Cooustic CD-3 represents a remarkable achievement in advanced mobile audio technology and system design.*



4260 Charter Street  
Vernon, CA 90058-2596  
1-213-582-2832

CIRCLE NO. 188 ON READER SERVICE CARD



### DBX SF5000 SOUNDFIELD SPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**A**BOUT six years ago, dbx introduced an innovative loud-speaker system, the Soundfield One, that was designed to provide a firmly fixed stereo stage over a wide range of listening and speaker positions. In contrast, conventional speakers of the time (like most of today's speakers) either did not generate a stable stereo image or provided it only in relatively restricted areas of the room. In essence (although the specifics of the design were quite complex), dbx achieved a relatively stable sound stage by shaping each speaker's pattern of horizontal directivity toward the center of the room. As a listener approached one speaker, its contribution to the total perceived sound decreased while the contribution from the other speaker increased, thus keeping the apparent sources of the sound fixed regardless of the listening position.

The Soundfield One, which is no longer in production, did its assigned job very effectively, but it was large and very expensive (each speaker unit contained fourteen drivers and a complex crossover

network). Subsequently, dbx refined the design to achieve comparable results with much simpler and more competitively priced speakers.

The latest, smallest, and—at \$450 a pair—least expensive Soundfield speaker is the dbx SF5000, which provides the essential qualities of the basic design in a bookshelf-size speaker (although it is not really intended for shelf placement). The SF5000 achieves its controlled radiation pattern by having two angled speaker panels, which give the speaker enclosure a triangular cross section. It is designed to be used in mirror-image pairs.

The inward-facing panel of each speaker unit, which makes an angle of about 30 degrees with the forward axis of the system, contains a 6½-inch long-throw woofer in a vented enclosure, a 2½-inch mid-range cone with fluid cooling, and a fluid-cooled ½-inch wide-dispersion tweeter. The outward-facing panel, which is 45 degrees off the forward axis, has a similar ½-inch tweeter at its top and the woofer port just below it. The rear of the enclosure, normally positioned parallel to the

wall behind it, contains recessed banana jacks for the amplifier connection. Plugs are furnished with the speakers, and the jacks also accept standard dual banana plugs.

The entire exterior of the cabinet is finished in an attractive walnut-grain or black vinyl veneer. Each speaker panel is covered by a removable cloth grille retained by plastic snaps. The cabinet dimensions are 11¾ inches wide, 7¾ inches deep, and 15⅞ inches high, and each speaker weighs 13 pounds. Although dbx states that the spatial properties of the system are relatively unaffected by speaker placement or listener location, placing the speakers 7 to 12 feet apart and 4 to 12 inches out from the rear wall is recommended.

The rated frequency response of the SF5000 is 65 to 20,000 Hz ± 3 dB over a forward angle of more than 100 degrees. Its sensitivity is given as 89 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. The nominal impedance is rated as 6 ohms, with a minimum of 4 ohms. The recommended amplifier power is 30 to 150 watts per channel into 4 ohms. The crossover frequencies are given as 1,600 and 4,500 Hz. Dbx, Dept. SR, 707 E. Evelyn Ave., Sunnyvale, CA 94086.

#### *Lab Tests*

We placed the SF5000 speakers on 26-inch stands about 7 feet apart and 15 to 30 inches from the rear wall. The averaged room response sloped downward smoothly over an 8-dB range from 1,000 to 20,000 Hz. Combining the close-miked woofer response with the output of its port yielded a bass response that extended smoothly to 20 Hz, reaching its maximum at 120 Hz and sloping downward to join the room curve for an overall composite response variation of ± 5 dB from 50 to 20,000 Hz.

Quasi-anechoic FFT response measurements on the tweeter axis showed a sizable resonance of about 15 dB at 16,000 Hz, which was also revealed by close-miked measurements with a swept sine wave. The outward-facing tweeter had a generally similar response but with a more complex double resonance at 12,000 and 15,000 Hz. In addition,



# Simple Impression.

Ergonomically simple, technologically impressive.

Our new 700 Series car radio/cassettes epitomize Cooustic's commitment to **PRODUCT EXCELLENCE**. A balanced synthesis of technology, functionality and ergonomics aptly describes the 700 Series, which is the best selection of car radio/cassettes available today.

A full range of models boasting the technologically Advanced FM Optimizer IV Circuitry incorporating a QUASI 4-GANG HI-GAIN, LOW NOISE TUNED FRONT END. This circuitry continuously monitors FM signal strength to selectively adjust



RX-738 CAR RADIO/CASSETTE

and delivers a 3-dimensional "life-like" sonic performance.

**THERE IS MORE ...**

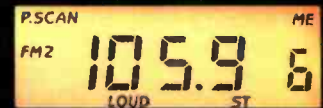
Cellular Phone Interrupt - You will never miss a call on your

Blending technology and simplicity the 700 series feature **DOLBY B-C NR** Preset Scan, Dolby B & C Noise Reduction Systems, Tape Program Search (TPS), Metal Tape Equalization (MTL), CD/AUX Input for digital program source, Radio Monitor (R.MON), Active Bass & Treble Tone Controls, Front/Rear Pre-Amp Outputs for flexible system expansion and removeable chassis option.

A custom oversized Liquid Crystal Display (LCD) provides easy identification day or night of frequency settings and each accessed function such as TPS, MTL, **DOLBY B-C NR**, CD, etc.

The 700 Series - simply impressive!

The 700 Series - simply impressive!



RX-738 LCD DISPLAY



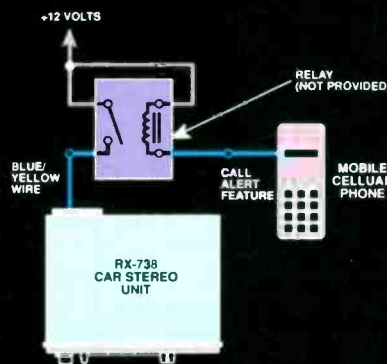
RX-738 CAR RADIO/CASSETTE

stereo separation and audio bandwidth. Automatically eliminating signal overload and the picket-fencing effect of multipath interference to produce the best stereo performance and cleanest FM reception possible.

The Auto-Aligned Azimuth (A<sup>3</sup>)™ **AUTO ALIGNED AZIMUTH SYSTEM** System is standard on all 700 Series auto-reverse cassette mechanisms. This unique A<sup>3</sup> System employs a 2-track (in-



stead of a fixed four-track, crosstalk prone) tape head that shifts linearly (up or down) into perfect azimuth alignment whenever tape direction is changed. This minimizes high frequency loss



CELLULAR PHONE INTERRUPT

mobile phone (with "Call Alert") again! Our new I-SENS™ Circuitry instantaneously mutes the audio system when it detects an incoming call.



RX-738 MULTI-FUNCTION CONTROLS



4260 Charter Street  
Vernon, CA 90058-2596  
213-582-2832

Dolby is a registered trademark of Dolby Laboratories

© Cooustic 1989

## TEST REPORTS

its output was about 6 dB lower than that of the other tweeter.

Measuring the output of the complete speaker, on its normal forward axis, yielded a generally flat curve, with only minor irregularities, from 180 to 7,000 Hz. The level of the higher frequencies was about 10 dB lower than that of the lower frequencies. The phase coherence of the total front radiation was good (an unexpected result in view of the drivers' being on two angled planes), with an overall group-delay variation of 0.4 millisecond.

The system's impedance was 4.2 ohms at 40 and 200 Hz, with the actual minimum of 3.8 ohms occurring at 6,000 Hz. The maximum impedance of 12 to 13 ohms occurred at 95 and 1,150 Hz. Overall, the impedance curve justified the speaker's nominal 6-ohm rating. The system's sensitivity was 88.5 dB SPL at 1 meter with 2.83 volts input. The woofer's distortion at a drive level corresponding to a 90-dB midrange SPL was about 1 percent at 100 Hz, rising smoothly to 2.7 percent at 50 Hz. Conventional distortion measurements at lower frequencies were hampered by the sharply reduced output from the cone, but our Audio Precision System One was able to plot distortion down to very low signal levels, revealing that the total harmonic distortion (THD) plus noise was 10 percent at 30 Hz. Although these readings are quite good for a speaker of this size, the acoustic output level under 50 Hz was too low to be useful, and the port output had a relatively high distortion level.

The SF5000 was able to absorb very high short-term power inputs, at least at middle and high frequencies. At 1,000 Hz, our amplifier clipped at 625 watts (into 11.5 ohms), and at 10,000 Hz it clipped at 1,265 watts (into 5 ohms), in both cases before the speaker's acoustic output was significantly distorted. In the woofer range (100 Hz), the cone bottomed audibly with a pulse input of 170 watts, which is still very respectable performance for a small vented-cone driver.

### Comments

The spatial characteristics of the dbx SF5000 lived up to expecta-

tions, having the same basic qualities that had impressed us years ago in the Soundfield One. When we listened to a program having distinct left/right positioning of some of its sound sources, it was possible to stand in front of one of the speakers and walk to the front of the other while the apparent source positions remained fixed. Moving about elsewhere in the room had a similar effect—no significant change in the apparent placement of identifiable sound sources. The only deviation from this characteristic (and it may have been related to a less-than-ideal room environment) was a tendency for the image position to shift slightly, and momentarily, at two points near the center of the sound stage during the lateral listener transit. Under ordinary listening conditions, the imaging was rock-stable.

The sound quality itself, apart from its spatial characteristics, was excellent for a speaker of this size and price. The bass, in particular, was solid and clean, with an impact that was surprising for such a small system. The overall sound impressed us as being smooth and slightly distant, with no evidence of the excessive "presence" effect that results from a midrange emphasis. At the same time, there was an occasional edginess to the highs that may have resulted from the large

tweeter resonances, although the resonances themselves occur well above the frequency range that can normally impart an audible coloration to the sound.

The dbx SF5000 does not create the kind of broad sound stage that extends beyond the speakers in all directions. That quality is not often encountered, especially in inexpensive speakers, and the full effect of an extended sound stage is usually audible only over a limited listening area. In contrast, the sound stage from the SF5000's, although less spectacular, being limited to the area between the speakers, presented the same imaging characteristics throughout the room. The clear imaging did not need any critical placement and angling of the speakers, nor did it require listeners to remain in a limited "sweet spot" that may not be consistent with room decor or might accommodate only a couple of people.

This trade-off between sonic spaciousness and noncritical speaker/listener placement may well be fundamental to loudspeaker reproduction. In any case, the dbx SF5000 is the smallest and least expensive speaker we know of that can do what it does so effectively. Altogether, it embodies a rare and happy combination of qualities!

*Circle 141 on reader service card*





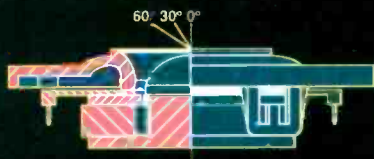
# Impress your system. And your system will impress you!

Impress your car audio system with our Power Logic series of component speakers and your system WILL impress the discriminating you.



TWEETERS: HT-604, HT-605, HT-606, HT-607

From 15" monstrous subwoofers, to powerful mid/woofers, to super tweeters and multi-driver speaker systems, our Power Logic component speakers are ready for any frequency response and sound pressure level (SPL) requirements with minimum distortion.



Your system will be wowed by our **SYMMETRICAL WAVE LOADING TECHNIQUE** on the Power Logic component tweeters which produces crisp high frequency performance even when mounted "off-axis".

Your power amplifier will be pleasantly surprised to find that **POLYIMIDE DIAPHRAGMS** are built into the tweeters to ensure structural integrity and significantly minimize distortion when subjected to high power.

Your system will concur with our research findings that **HIGH DENSITY, POLYPROPYLENE-LAYERED, AIR-DRIED, DOUBLE-RIGID PAPER CONE** carries the lowest second and third harmonic distortion characteristics, manifesting the best

sound quality. This cone material is standard on all Power Logic component speakers.

Your power amplifier system will certainly appreciate the combination of **HIGH TEMPERATURE ALUMINUM VOICE COIL** and **HI-ENERGY STRONTIUM MAGNET STRUCTURE** built for maximum heat dissipation and extreme power handling capability, with more accurate cone displacement resulting in faster transient re-



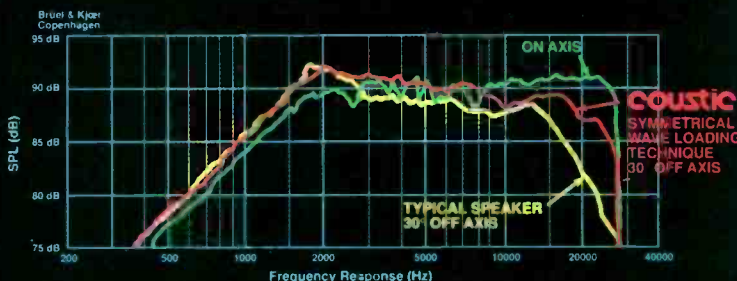
SUBWOOFERS: HT-610, HT-615, HT-608, HT-612



MID-WOOFERS: HT-604, HT-606, HT-603, HT-605

sponse and lower distortion.

The Power Logic component speaker series rigorously produces, in an anti-acoustic automotive environment, crisp high fre-



quency response, sumptuous midrange, tight and distortion-free low bass, superb instantaneous power handling and precise stereo imaging. In short, the illusion of life-like musical performance with superior clarity and 3-dimensional imaging.

Our Power Logic component speakers will no doubt impress your system. All it takes is for your system to impress YOU.



4260 Charter Street  
Vernon, CA 90058-2596  
213-582-2832



JOOK LEUNG

## NIKKO IA600 INTEGRATED AMPLIFIER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Nikko IA600 is a powerful integrated amplifier, rated to deliver 120 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.01 percent total harmonic distortion (THD). The specifications also include dynamic power ratings of 170 and 270 watts into 8- and 4-ohm loads, respectively.

The multilingual instruction manual, although quite explicit concerning the installation and operation of the IA600 amplifier, provides no information on any of its circuit or construction features. It is, however, a rather large and heavy unit, measuring about 17½

inches wide, 16¼ inches deep, and 5¾ inches high and weighing 32 pounds.

The front panel has two parallel rows of light-touch rectangular pushbuttons that provide independent selection of the program source for the audio (monitor) outputs and for the tape-recording outputs. A small LED in each button shows when that source has been selected, glowing green for the monitor program, red for recording. There are seven high-level inputs: CD, tuner, auxiliary, tape 1, tape 2, video 1, and video 2. The "video" inputs are actually conventional line-level inputs for the audio portion of a video

program or any other comparable signal. The single phono input is switchable for a moving-magnet (MM) or moving-coil (MC) cartridge by a front-panel button. Another button inserts an external signal processor, such as an equalizer, into the signal path to either the monitor or recording outputs (but not both simultaneously).

Similar pushbuttons independently connect the two sets of speaker terminals to the amplifier outputs. Both sets of speakers can be silenced for listening through headphones via the front-panel jack. Small round buttons parallel the channels for mono operation, switch the phono input for operation with an MM or MC cartridge, activate the "subsonic" (infrasonic) filter and loudness-compensation circuits, and reduce the audio output by 20 dB.

Small round knobs operate the bass, treble, and balance controls.



# We shed a lot of flavor on the subject of light.

Most ultra low tar cigarettes are a compromise:  
low tar, and low taste. Some compromise! Only Merit has  
figured out how to deliver low tar and great flavor in an ultra light cigarette.  
Perhaps that's why we're America's fastest growing ultra light.  
Is that the sound of a light going on in your head?

Enriched Flavor,<sup>™</sup> ultra low tar. A solution with Merit.



## Merit Ultra Lights

SURGEON GENERAL'S WARNING: Quitting Smoking  
Now Greatly Reduces Serious Risks to Your Health.

© Philip Morris Inc. 1989

Kings: 5 mg "tar," 0.5 mg nicotine av. per cigarette by FTC method.

# “Cambridge SoundWorks May Have The Best Value In The World. A Winner.”

David Clark—*Audio Magazine* Sept. '89

Cambridge SoundWorks has created Ensemble, a speaker system that can provide the sound once reserved for the best speakers under laboratory conditions. It virtually disappears in your room. And because we market it directly, Ensemble costs hundreds less than it would in stores.

where the speaker is placed in the room. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

**Your listening room works with Ensemble, not against it.**

Ensemble, on the other hand, takes advantage of your room's acoustics. The ear can't tell where bass comes from, which is why Ensemble's bass units can be tucked out of the way—on the floor, atop bookshelves, or under furniture. The satellites can be hung directly on the wall, or placed on windowsills or shelves. No bulky speaker boxes dominate your living space, yet Ensemble reproduces the deep bass that *no* mini speakers can.

*Unlike seemingly similar satellite systems which use a single large subwoofer, Ensemble uses two separate, compact bass units. They fit more gracefully into your living environment, and help minimize the effects of the listening room's standing waves.*

“Very much in the Henry Kloss tradition... another hi-fi milestone.”

 **Review**



*Henry Kloss, creator of the dominant speaker models of the '50s (Acoustic Research), '60s (KLH) and '70s (Advent), brings you Cambridge SoundWorks, a genuinely new kind of speaker company for the '90s.*

## The best sound comes in four small packages.

Ensemble consists of four speaker units. Two compact low-frequency speakers reproduce the deep bass, while two small satellite units reproduce the rest of the music, making it possible to reproduce just the right amount of energy in each part of the musical range without turning your listening room into a stereo showroom.

No matter how well a speaker performs, at home the listening room takes over. Room acoustics emphasize and de-emphasize various parts of the musical range, depending on

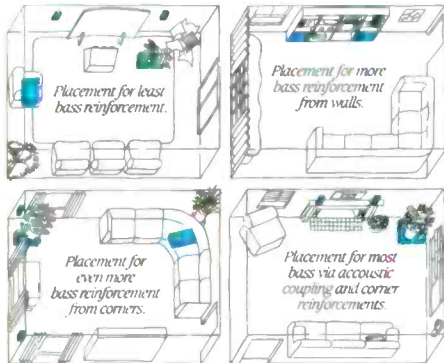


™ Ensemble & Ambiance are trade marks of Cambridge SoundWorks, Inc.



**Not all the differences are as obvious as our two subwoofers.**

Unlike seemingly similar three-piece systems, Ensemble uses premium quality components for maximum power handling, individual crossovers that allow several wiring options and cabinets ruggedly constructed for proper acoustical performance. We even gold-plate all connectors to prevent corrosion. An even bigger difference is how we sell it.



You can put Ensemble's low-frequency units exactly where they should go for superb bass. You can't do this with conventional speakers because you have to be concerned about the upper frequencies coming from the same enclosures as the low ones.

**Thousands agree: the best showroom is your living room.**

Choosing a loudspeaker after a brief listen at a dealer's showroom is like deciding on a car after one quick trip around the block. So we make it possible to audition Ensemble the right way—in your own home. In fact, Ensemble is sold *only* by Cambridge SoundWorks directly from the factory.

*"They were designed to play music—and make it sound like music. This they do very well, in a most unobtrusive way, at a bargain price... it's hard to imagine going wrong with Ensemble."*  
Stereo Review

You get to listen for hours without a salesman hovering nearby. If after 30 days you're not happy, return Ensemble for a full refund (we'll even reimburse the original UPS shipping charges in the continental U.S.).

At only \$499—complete with all hardware and 100' of speaker cable—Ensemble is *the* value on today's speaker market.

**"You get a month to play with the speakers before you have to either return them or keep them. But you'll keep them!"**

**Esquire**



**Introducing Ambiance by Henry Kloss.**

Ambiance™ is an ultra-compact speaker that proves high performance, small size and low cost need not be mutually exclusive. Ambiance is ideal for bedrooms, dens, dorm rooms... or for use as an extension speaker or in surround-sound systems. While *no* speaker of its size can provide the same low bass and total volume as our Ensemble system, Ambiance has more output in the 40Hz region than any "mini speaker" we've encountered. Indeed we know of *no* compact speaker that outperforms Ambiance, including those costing hundreds more. Ambiance is only \$109 per speaker in Nextel or primed for painting; \$129 in solid oak,\* and comes with our 30 day money-back guarantee.

**"A listening test left no doubt that this system ranks with the best in its price range."**

**The New York Times**

**Try them risk-free for 30 days. Call 1-800-AKA-HIFI† (1-800-252-4434)**

Our toll-free number connects you to a Cambridge SoundWorks audio expert. He or she will answer all your questions, take your order (you can use Visa, MasterCard or American Express) and arrange surface shipment via UPS. Your Cambridge SoundWorks audio expert will continue as your personal contact with us. We think you'll like this new way of doing business.

In Canada, call 1-800-525-4434. Audio experts are on duty 9 AM to Midnight, Eastern Time, seven days a week. Fax #: 617-332-9229.

**CAMBRIDGE SOUNDWORKS**

Suite 102J California St., Newton, MA 02158

- Send more information and test reports.
  - Send Ensemble risk-free for 30 days, for \$499\*
  - Send \_\_\_ (qty.) Ambiance (Nextel), for \$109 ea.\*
  - Send \_\_\_ (qty.) Ambiance (Primed), for \$109 ea.\*
  - Send \_\_\_ (qty.) Ambiance (Oak), for \$129 ea.\*
- I'm paying by  Check  MC  Visa  AmEx

Acct. Number \_\_\_\_\_ Exp. \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone (Area Code) \_\_\_\_\_ Number \_\_\_\_\_

FOR IMMEDIATE SERVICE: 1-800-AKA-HIFI

MA residents add 5% sales tax.

\*Plus freight (Ensemble \$7-\$25, Ambiance \$2-\$12)

Delivery time usually 2-7 days.

## TEST REPORTS

An arc of green lights surrounding each knob shows its setting. A large volume-control knob is located at the right of the panel. Between it and the other controls is a small pushbutton marked CD DIRECT, which connects the CD input to the amplifier regardless of the setting of the monitor selector, bypassing all circuits except the volume control and -20-dB attenuator. All the knobs have soft rubber rings that make their adjustment exceptionally easy. Those for tone and balance have light center detents.

The rear apron contains the signal input and output connectors, pre-amp-out and power-amp-in jacks (normally joined by jumpers), and the speaker terminals. Although the manual's illustrations and text indicate that the speaker terminals are spring clips that accept stripped wire ends, our test amplifier was equipped with large binding posts. Unfortunately, they did not accept banana plugs. Two of the three AC

outputs are switched. Price: \$660. Nikko Audio, Dept. SR, 5830 S. Triangle Dr., Commerce, CA 90040.

### Lab Tests

The 8-ohm clipping output of the Nikko IA600 was 146 watts per channel at 1,000 Hz, corresponding to a clipping headroom of 0.85 dB. The output into lower impedances was appreciably higher, measuring 225 watts into 4 ohms and 376 watts into 2 ohms (for which the amplifier is not rated). Dynamic power into 8 ohms was 175 watts (corresponding to a dynamic headroom of 1.64 dB), slightly surpassing the manufacturer's rating; it rose to 312 watts into 4 ohms and an impressive 462 watts into 2 ohms.

Total harmonic distortion plus noise into 8 ohms was about 0.003 to 0.004 percent at middle and low frequencies for power outputs from 12 watts up to the rated 120 watts. It increased slightly at higher frequen-

cies and power outputs, with maximum figures at 20,000 Hz ranging from 0.01 percent distortion at 12 watts to 0.031 percent at 120 watts. The amplifier's slew factor was 5. At 1,000 Hz, THD plus noise was typically about 0.003 percent for power outputs up to 120 watts into 8 ohms

*The Nikko IA600 integrated amplifier feels (and is) heavy and solid, and its performance in the lab was consistent with those qualities.*

or 200 watts into 4 ohms. Even a 2-ohm load (with one channel driven) did not materially degrade the amplifier's performance, with distortion readings in the range of 0.003 to 0.007 percent at power levels from 10 to 300 watts and still only 0.024 percent at 350 watts.

The IA600 is well protected against damage by current and temperature sensors that shut down the amplifier if they detect conditions that might endanger its output transistors. Both protective systems were tripped during our tests, which the amplifier survived unscathed.

The tone-control response curves hinged at 400 Hz for the bass and 2,000 Hz for the treble, with maximum ranges of  $\pm 12$  dB. Frequency response with the center control settings was flat within  $\pm 0.1$  dB from 10 to 30,000 Hz and down 0.9 dB at 100,000 Hz. The RIAA phono equalization was within +0.35, -0.1 dB of the ideal curve from 20 to 20,000 Hz. The infrasonic filter did not affect frequencies above 100 Hz but reduced the response by 2 dB at 20 Hz and 5.5 dB at 10 Hz. The loudness-compensation circuit boosted low frequencies by 10 dB and high frequencies by 6 dB, relative to the level at 1,500 Hz, as the volume setting was reduced.

With the volume control at maximum, an input of 13.5 millivolts was required to produce a 1-watt output from any of the high-level inputs. A-weighted noise was -83 dB relative to 1 watt. The phono sensitivity was 0.23 millivolt (mV) with a -81.3-dB noise level at the

### FEATURES

- Audio inputs for MM or MC phono, CD, tuner, auxiliary, two audio tape decks, two video sources
- Independent selection of program for listening and tape recording
- Switching for external signal processor
- Pre-amplifier outputs and power-amplifier inputs joined by removable jumpers
- Bass and treble tone controls
- Balance control
- Front-panel selector for MM or MC cartridge
- Infrasonic filter
- Audio attenuator (20 dB)
- Switchable loudness compensation
- CD DIRECT switch to bypass input selectors, tone controls, and filters
- Two sets of speaker outputs with independent switching
- Front-panel headphone jack
- Three AC outlets, two switched

### LABORATORY MEASUREMENTS

**Output power at clipping** (1,000 Hz): 146 watts into 8 ohms, 225 watts into 4 ohms, 376 watts into 2 ohms

**Clipping headroom** (relative to rated output): 0.85 dB into 8 ohms

**Dynamic power output:** 175 watts into 8 ohms, 312 watts into 4 ohms, 462 watts into 2 ohms

**Dynamic headroom:** 1.64 dB into 8 ohms

**Harmonic distortion** (THD + noise at 1,000 Hz into 8 ohms): 1 watt, 0.011%; 10 watts, 0.0038%; 120 watts, 0.0033%

**Maximum full-power distortion** (20 to 20,000 Hz into 8 ohms): 0.031% at 120 watts (20,000 Hz)

**Sensitivity** (for a 1-watt output into 8 ohms): CD, 13.5 mV; phono, 0.23 mV (MM), 0.025 mV (MC)

**Phono-input overload** (MM): 94 to 138 mV

**A-weighted noise** (referred to a 1-watt output): CD, -83 dB; phono, -81.3 dB (MM), -76.5 dB (MC)

**Phono-input impedance** (MM): 47,000 ohms in parallel with 380 pF

**RIAA equalization error:** +0.35, -0.1 dB from 20 to 20,000 Hz

**Tone-control range:**  $\pm 10$  dB at 100 and 10,000 Hz

**Frequency response:**  $\pm 0.1$  dB from 10 to 30,000 Hz



# Ultimate Upgrade. Simply the best receiver in the world.



The Luxman R-117 combines the state-of-the-art technology of separate components into one affordable receiver.

## TOTAL SONIC INTEGRITY

All Luxman receivers incorporate massive power supplies to deliver high dynamic power. The R-117 measures over 700 watts of dynamic power per channel (2 ohms) to ensure distortion-free transients.

The pre-amplifier section combines several Luxman exclusive circuit designs to optimize sonic accuracy, and the AM/FM stereo tuner is sonically competitive with the finest separate tuners in the world.

In all, the R-117 receiver provides the purity and musical warmth of the original source, plus the high dynamic power output necessary to ensure total sonic integrity at all volume levels.

## AUDIO/VIDEO REMOTE CAPABILITY

The R-117 includes a hand-held remote to control the major functions of each Luxman audio component. In addition, the R-117 handpiece can select up to three video sources, and professional-grade video amplifiers are incorporated to maintain a high-quality picture.

This single component will function as a complete audio and video control center with total remote capability.

## MULTI-ROOM EXPANDABILITY

The R-117 also interconnects with an external remote eye to allow complete system operation from any room in your house. With a simple installation of cables and accessories, virtually all functions of the master system can be controlled at each remote location. This multi-room concept can be expanded at anytime in the future to include additional rooms.

## LONG-TERM DURABILITY

A previous advantage of separate components over receivers has been in the area of durability. The R-117 is designed with a no-compromise approach to long-term reliability and is backed by a 5 Year Parts and Labor Warranty — the best in the industry.

The Luxman R-117 Receiver is simply the finest sounding, most versatile, most reliable receiver in the world... the ultimate component to upgrade your audio/video system.

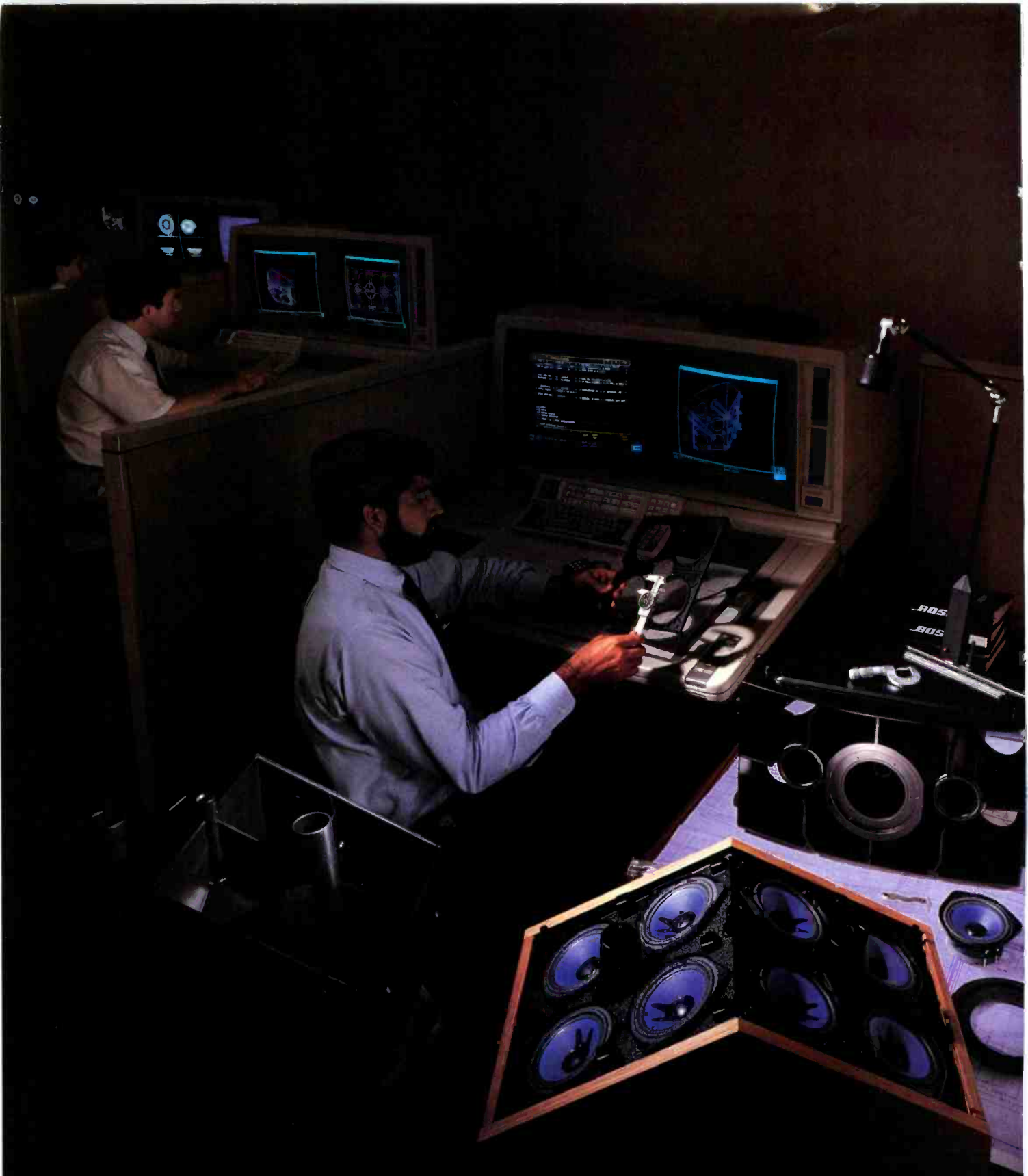


CIRCLE NO 52 ON READER SERVICE CARD

For Dealer Location



Call 1-800-888-8237



Bose® engineers use advanced design systems to bring the benefits of new technologies to the constantly-refined 901® Direct/Reflecting® speaker. The Intergraph InterAct 32 CAD/CAM system (above) at Bose Corporation's Framingham, Massachusetts worldwide headquarters is part of this commitment to "better sound through research."



# The Bose® 901® Direct/Reflecting® speaker system: A technological breakthrough 20 years ago— pushed to the edge of *today's* technologies.

Twenty-five years ago Dr. Amar Bose directed a research program at the Massachusetts Institute of Technology on the physical acoustics and psychoacoustics of sound reproduction. The results of this effort provided the theoretical basis for the design of the first Bose 901 Direct/Reflecting® speaker system five years later. Its introduction in 1968 was greeted with the highest critical acclaim ever accorded to a loudspeaker.

**“... I must say that I have never heard a speaker system in my own home which could surpass, or even equal, the Bose 901 for overall “realism” of sound.”**

—Julian Hirsch, *Stereo Review* 1968

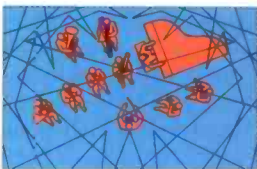
**“There is no doubt that the much-abused and overworked term, ‘breakthrough,’ applies to the Bose 901 system and its bold new concepts.”**

—Bert Whyte, *Audio* 1969

**“Many people swear by these speakers as the ultimate.”**

—*Complete Buyer's Guide to Stereo Hi-Fi Equipment* 1975

But this was just the beginning. Bose research continued to focus on the 901 system, incorporating the latest technology as it was developed. For example, in 1976 two new innovations were brought to the system



Live music is a combination of direct and reflected sound energy.



Bose Direct/Reflecting® speakers accurately reproduce live music's natural balance of direct and reflected sound energy, in *full stereo* (blue area) throughout the room.

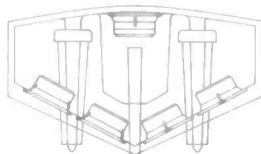
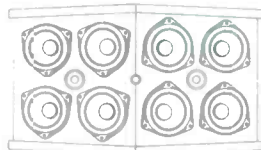
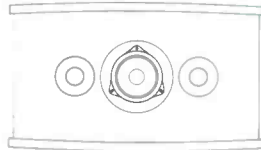
to dramatically improve its efficiency and power handling. These new technologies—the Acoustic Matrix™ enclosure and the Helical Voice Coil driver—alone represent a significant investment in research and development. As a result of this commitment, the rave reviews continued.

**“... it has a total sound that soars, with a brilliance that defies description.”**

—*Modern Hi-Fi & Music* 1977

Bose engineers work continuously to develop and perfect new audio technologies with one common denominator: if they demonstrate the potential to improve performance, they

become part of the Bose 901 system. In today's era of digital sound, with hundreds of engineering and design improvements over the original 901 system, the 901 Series VI Direct/Reflecting® speaker system is the technological flagship of Bose Corporation.



**“The 901 VIs sound live and exciting the moment you fire them up... There are more than a few music lovers who won't listen to anything else...”**

—Daniel Kumin, *Digital Audio* 1988

We submit that the research and development behind the Bose 901 system make it the most advanced, lifelike sounding speaker you can buy. But you must be the final judge. Ask your dealer to give you an “A-B” demonstration comparing the Bose 901 system to any other speaker, *regardless of size or price.*



We invite you to audition the Bose line at a dealer nearest you. For more information, call 1-800-444-2673 between 9 a.m. and 5 p.m. EST.

**BOSE®**  
**Better sound through research.**

## TEST REPORTS



**The only thing missing  
was Denon Hi-Fi.**

Denon's DT-400 is a two-piece, table-top stereo system which brings the electronic technology, ease of use and performance characteristic of Denon's acclaimed home stereo receivers to a space efficient design. The DT-400's outstanding combination of ergonomic design, convenience, features and high fidelity make it the system of choice for music lovers who want great sound in places—like a home office or kitchen—where conventional systems just won't fit.

Denon America, Inc., 222 New Road, Parsippany, NJ 07054 (201) 575-7810

**DENON**  
DESIGN • INTELLECT • STYLE

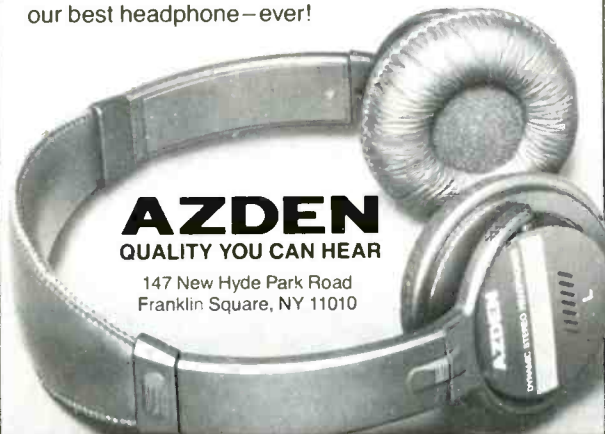
CIRCLE NO. 27 ON READER SERVICE CARD

## OUR BEST HEADPHONE — EVER!

Nothing in our past listening experience prepared us for our first audition of the new DM-90 Digital-Monitor headphones. We were absolutely stunned. We then took the sample to our "golden ear" dealers, and they too were amazed!

The verdict: THE DM-90 AT \$99.95 IS EQUAL TO, OR BETTER THAN ANY OTHER DYNAMIC HEADPHONE ON THE MARKET, AT ANY PRICE!

Some headphones can be said to have extended deep bass, others smooth midrange, some, transparent highs and superior dynamic range. Our new DM-90 has all of this, and more. It is unquestionably our best headphone—ever!



**AZDEN**  
QUALITY YOU CAN HEAR

147 New Hyde Park Road  
Franklin Square, NY 11010

### Authorized dealers:

**CALIFORNIA**  
Shelleys, Canoga Park  
Frys, Fremont—Ventura TV, Fresno  
Ahead Stereo, LA—Speakerscraft,  
Riverside—Down To Earth Stereo,  
Mad Jacks, Pacific Sight & Sound,  
San Diego—Wongs, SF—Shelleys,  
Santa Monica—Frys, Sunnyvale  
Digital Ear, Tustin

**COLORADO**  
Sound Shop, Colorado Springs  
SoundTrack, Denver  
Sound Co, Grand Junction  
Soundtronix, Pueblo

**DISTRICT OF COLUMBIA**  
The Equalizer

**FLORIDA**  
BrandsMart, Miami

**IDAHO**  
Sound Pro, Boise—Inkieys, Idaho  
Falls—Mel Quales, Twin Falls

**ILLINOIS**  
Musicalt, all locations—Audio  
Enterprise, Chicago, Hts—Stereo  
Systems, Aurora, Joliet, Naperville  
The Shoppe, Karikakee—Laserland,  
Westmont—Hear Here, Waukegan

**INDIANA**  
All-tronics, Mishawaka

**MASSACHUSETTS**  
Cameras Inc, Arlington

**MONTANA**  
New Horizons, Billings  
Sound Pro, Thrifty Ear, Bozeman  
Sound West, Missoula

**NEVADA**  
Union Premiums, Las Vegas

**NEW JERSEY**  
Hands Camera, Toms River  
Samm Sound, W Caldwell

**NEW MEXICO**  
Town Crier, Clovis

**NEW YORK**  
PC Richard, all locations  
FOCUS Electronics, Brooklyn  
J & R Music World, Jern Sound, High  
Voltage, S & S Sound City,  
8th Avenue Electronics, Manhattan

**OHIO**  
All-tronics, Canton—Play It Again  
Sam, Lakewood  
Stereo Ltd, Zanesville

**PENNSYLVANIA**  
Sound Advice, Doylestown—Studio  
One, Erie—Worldwide Stereo,  
Montgomeryville—Universal  
Discount, Philadelphia  
Sounds Good to Me, Sharon

**UTAH**  
Inkieys, all locations  
Gadgets, Salt Lake City

**WASHINGTON**  
Evergreen Audio, Bremerton  
Stereo Snoope, Tacoma

**WISCONSIN**  
Reimer Photo, Milwaukee

**WYOMING**  
New Music Box, Laramie

**CANADA**  
The CD Bar, Toronto

CIRCLE NO. 164 ON READER SERVICE CARD

MM setting and 0.025 mV with a —76.5-dB noise level at the MC setting. The MM phono-input impedance was 47,000 ohms in parallel with a rather high 380-pico-farad capacitance. The MM phono input overload level was about 135 mV at middle and low frequencies and approximately 94 mV at 20,000 Hz. Like some other phono stages we have tested, this one overloaded in a peculiar fashion at 20,000 Hz: The waveform collapsed suddenly instead of merely clipping or distorting. The collapse took place at such a high level, however, that we would not expect an overload to occur with any likely combination of cartridge and record.

### Comments

As our measurements clearly show, Nikko has not skimped in the design or construction of the IA600. It feels (and is) heavy and solid, and its performance was consistent with those qualities. We were also pleased to find it about as "bullet-proof" as an amplifier can be, although we made no deliberate effort to destroy it in our tests.

The controls operated with a smooth and positive action, although the balance and tone-control detents on our sample were sometimes difficult to feel. All the switches operated without any electrical or acoustic noises, reinforcing the impression of quality conveyed by the amplifier's construction and appearance. As with other products we have seen that have a similar feature, the CD DIRECT mode was not measurably or audibly different from normal operation (at their flat settings the tone controls did not modify the basic amplifier performance in any way we could detect). But given the ambiguity of their center positions, being able to bypass the tone and balance controls might turn out to be a useful feature in this case, especially for highly critical listeners.

Although Nikko has been in the U.S. hi-fi market for many years, the company has been relatively quiet for some time. If the IA600 is typical of its current products, we look forward to seeing some of the others.

Circle 142 on reader service card



# LEAVING A SYMPHONY UNFINISHED SHOULD BE UP TO THE COMPOSER. NOT YOUR TAPE.



Schubert had a pretty good reason for not completing music. He died.

But abrupt endings while taping CDs are not so excusable. Which is why Maxell now offers 100-minute cassettes designed specifically for digital sources. With superior frequency response and noise reduction, they actually rival CDs in sound quality. And with an extra ten minutes of

recording time, they do the same in sound quantity.

Instead of being frustrated by the shortcomings of other tapes, try our new XLII 100 and XLII-S 100. And you may never have to settle for Vivaldi's "Three-And-A-Half Seasons" again.



**maxell**®

© 1989 Maxell Corporation of America, 22-08 Route 208, Fairlawn, N.J. 07410

CIRCLE NO. 25 ON READER SERVICE CARD



A HISTORY OF ARCHITECTURE  
CHRISTIAN COCKAY  
NEW FASHION JAPAN  
ORNAMENTALISM

PIONEER VHS-REX2  
TUNER 101.30  
PIONEER

PIONEER ID-1070  
7:01 00:00  
PIONEER

PIONEER CR-52  
PIONEER

PIONEER CT-100R  
00:00  
PIONEER





WE BRING THE REVOLUTION HOME.™

You know the problem.

You're in the bedroom. The system's in the living room. You want to change a track or adjust the volume. Now what?

**HOW THE PIONEER  
MULTI-ROOM  
REMOTE WORKS.  
SORT OF.**

Introducing Pioneer Multi-Room Remote Control. Now you can do it all from beyond a wall, beyond two walls – in fact, from any room with remote speakers.

At the heart of the system is your Pioneer receiver with Multi-Room Remote and Dolby Pro-Logic. Add a tiny sensor with a Pioneer Smart Remote and you're in control. It's that simple.



Shown here: Pioneer components featuring the VSX9500S receiver.

For more information call 1-(800) 421-1404  
CIRCLE NO. 31 ON READER SERVICE CARD



### CAMBRIDGE SOUNDWORKS AMBIANCE SPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Ambiance is the second speaker designed by Henry Kloss for his Cambridge SoundWorks. Like the first, the four-piece Ensemble, it is sold directly by the manufacturer instead of through dealers. The Ambiance, however, is simply a small two-way system with a 6½-inch long-throw, acoustic-suspension woofer and a 1-inch dome tweeter. Each sealed wooden cabinet measures only 10⅞ x 7⅛ x 5½ inches and weighs 8¾ pounds.

The removable black-metal grille

fits snugly into a slot around the edge of the front panel. The cabinet walls are ¾ inch thick, and the heavy-duty multiway binding posts, which also accept single or dual banana plugs, are recessed into the back panel, which also has a keyhole slot for wall-mounting the speaker.

Cambridge SoundWorks says that the Ambiance outperforms many other speakers of its size and is at least the equal of any of them, regardless of price. Unlike most other small speakers, the Ambiance does not exaggerate its output in the

upper bass, around 100 Hz, at the expense of the lower bass. The company claims that the Ambiance rolls off smoothly in the bass yet has more output around 40 Hz than any other speaker its size.

This performance is said to result from the use of high-quality materials and components, backed by extensive listening tests. To obtain the required bass extension, some efficiency had to be sacrificed (a fundamental tradeoff), but the speaker can be used with almost any amplifier capable of at least 15 watts output. It is ideal for tight quarters, such as a den or a college dorm room, as an extension speaker, or in a surround-sound system.

The Ambiance is available primed so that it can be painted as desired, finished in gunmetal-gray Nextel, or housed in a solid oak cabinet. Prices: \$109 each for the primed and Nextel-finished versions, \$129 each for the oak version; optional metal stands, \$99 a pair. Cambridge SoundWorks, Dept. SR, Suite 102, 154 California St., Newton, MA 02158.

#### *Lab Tests*

No specifications were furnished with our early samples of the Ambiance speakers. The speakers' minimum impedance measured 7.5 ohms at 200 Hz, and the maximum impedance was 30 ohms at the bass-resonance frequency of 80 Hz. Above 500 Hz, the impedance remained between 11 and 18 ohms, and the phase angle of the complex impedance was less than 20 degrees from 250 to 20,000 Hz. These results suggest the speakers should be easy, noncritical loads for any amplifier.

The sensitivity of the speaker was fairly low, producing a sound-pressure level (SPL) of 85 dB at 1 meter with an input of 2.83 volts of pink noise. Total harmonic distortion (THD) was measured with a constant input of 5 volts, equivalent to a 90-dB SPL. From 10 percent at 45 Hz, the distortion dropped smoothly to 3.6 percent at 100 Hz and remained between 0.3 and 1 percent from 200 to 1,000 Hz.

The averaged room response from the two speakers, mounted on 26-inch stands about 30 inches in front of the wall, was relatively





## OUR 5-DISC CD CHANGER GIVES YOU AT LEAST 5 HOURS OF UNINTERRUPTED PLAYING TIME.

At Technics, we firmly believe that magnificent music should bring an audience to their feet in a concert hall. But not in a living room.

That's why we designed our new SL-PC20 5-Disc CD Changer. Thanks to its unique top-loading rotary design, you can change four discs while the fifth keeps playing. So you can keep the music going, nonstop, all night if necessary.

Plus, the SL-PC20 allows you to play any combination of five 3-inch or 5-inch discs in a row. It has a 25-key

wireless remote control. And a high-speed linear access motor.

All together, they allow you to swiftly go from one track to another in a random order, as often as you want. Without ever leaving the comfort of your sofa.

But while your mind may be concentrating on other matters, the Technics CD Changer is always paying close attention to the music. Because its quadruple oversampling digital filters and two separate digital-to-analog converters together help to deliver the cleanest possible sound.

The Technics 5-Disc CD Changer. Because, we think the music from your CD Changer should continue as long as the mood does.

### FREE CD OFFER

Get 2 free CD's plus up to 12 more with a free membership in the BMG Compact Disc Club, when you purchase any Technics CD player between Sept. 15 and Dec. 31, 1989. See your participating Technics dealer for details.

**Technics**  
The science of sound

**Listen to the Technics  
Mica CX Speaker Series at  
one of these fine stores:**

- ALABAMA • Mobile — Hooper
- ALASKA • Anchorage — Magnum Electronics
- ARIZONA • Yuma — Kukuk's Stereo
- ARKANSAS • Blytheville — Mr. Audio • Fayetteville — Stereo One • Texarkana — Tape Village
- CALIFORNIA • Berkeley — Uncle Ralphs • Carlsbad • Chula Vista • Escondido • La Mesa • San Diego — Jacks Sound Centers • Fairfield — Del Mars • Los Angeles — Cosmos • San Jose — Ouemeni • Santa Ana — Main St. Electronics
- COLORADO • Aspen — Henry's Stereo • Glenwood Springs — Music Box
- FLORIDA • Delray Beach — Good Life • Key West — Audio International • West Palm Beach — World Of Sound
- IDAHO • Boise — All American Audio • Boise — Sound Pro • Lewiston — Steiners
- ILLINOIS • Chicago — Hi Fi Hutch • Effingham — Crossroads Electronics • Farmington — World Wide TV
- KANSAS • Garden City — Team Electronics
- KENTUCKY • St. Matthews — Wilder Electronics
- MAINE • Augusta — Pomerleau's • Bangor — The Sound Source
- MASSACHUSETTS • New Bedford — Audiometrics • Worcester — O'Coins
- MICHIGAN • Allen Park — World Wide TV • Brighton — World Wide TV • Petoskey — Puff's of Petoskey • Rochester Hills — Video Systems • Waterford — World Wide TV
- MINNESOTA • Duluth — Mel's • Mankato — Team Electronics • Winona — Amalgamated Audio
- MISSISSIPPI • Jackson — Hooper • Meridian — Hooper • Pascagoula — Hooper
- MISSOURI • Jefferson City — Audio Magic • Osage Beach — Phone Station • Popular Bluff — American Hi Fi • Springfield — Harvey's Home Entertainment • St. Louis — Quality Sight and Sound
- MONTANA • Bozeman — Sound Pro
- NEBRASKA • Norfolk — Mid City Stereo • North Platte — Monte's Sound Systems • Scottsbluff — Panhandle
- NEW HAMPSHIRE • Walpole — Real to Reel
- NEW JERSEY • East Hanover — Tops • Edison — Tops • Secaucus — Tops • Totowa — Sim-O-Rama
- NEW MEXICO • Albuquerque — Baillos
- NEW YORK • Albany — Hippo's • Canandaigua — Hathorne's • Corning, Elmira & Ithaca — Chemung Electronics
- NORTH CAROLINA • Burlington • Eden • Greensboro • High Point • Lexington • Salisbury • Winston Salem — Ed Kelly's
- NORTH DAKOTA • Grand Forks — Team Electronics • Minot — Team Electronics • Williston — Stereo West
- OHIO • Cincinnati — ICB Audio • Fairview Park — Wellman & Griffith, Inc. • Mentor — Mentor TV, Inc. • Royalton — Phil Reddish Supply, Inc. • Toledo — Stereo One
- OREGON • Portland — Brownell Sound
- PENNSYLVANIA • Berwyn — Soundex Electronics • Ephrata — Galens of Ephrata • Erie — Studio One • Greenburg — Stereo Shop • Hazelton — Jannen Systems • Johnstown — East Hills TV & Sporting • Lehighton — Lasermedia • Pottsville — Pamco Enterprises • Smithfield — Reces' Warehouse • State College — HIFH, Inc. • Willow Grove — Soundex Electronics
- SOUTH CAROLINA • Columbia — Norton's
- SOUTH DAKOTA • Rapid City — Team Electronics • Sioux Falls — Gourley's Pro Audio
- TENNESSEE • Memphis — Modern Music • Nashville — Electronic Express
- TEXAS • Austin — A&B TV • Corpus Christi — Audio Video Designs • Houston — Applebaum & Company • Lufkin — Sound Center of Lufkin
- UTAH • Salt Lake City — Gadgets
- VERMONT • Williston — Consumer's Showcase
- VIRGINIA • Charlottesville — Audio World Limited • Collinsville — Bryant Radio Supply • Roanoke — Lee Hartman & Sons, Inc. • Stafford — ORC Electronics • Virginia Beach — FX • Winchester — Sound City
- WASHINGTON • Bellingham — Video Depot
- WISCONSIN • Janesville — Team Electronics of Janesville • Madison — Phillips • Wausau — Sound World of Wausau
- WYOMING • Casper — Jeff's Electronics

**Technics**

One Panasonic Way, Secaucus, NJ 07094

**TEST REPORTS**

smooth and uniform from 100 to 20,000 Hz. The close-miked woofer response showed a broad maximum from 150 to 200 Hz, falling at 12 dB per octave below 100 Hz and at 3 dB per octave from 200 to 1,100 Hz. The composite response curve was within  $\pm 3.5$  dB from 70 to 20,000 Hz. The crossover frequency appeared to be somewhere between 1,100 and 1,500 Hz.

The quasi-anechoic IQS FFT response measurements confirmed the general character of the swept-frequency response measurements. Although there were minor directional effects at various frequencies, the response curves measured on-axis and 45 degrees off-axis coincided well until the frequency exceeded 10,000 Hz, where the divergence increased markedly. The group delay of the system was exceptionally uniform, varying about  $\pm 0.1$  millisecond from 1,000 to beyond 20,000 Hz.

We tested pulse power-handling ability only at 100 Hz, since at higher frequencies the relatively high impedance of the system resulted in amplifier clipping long before the speaker's limits were reached. At 100 Hz, a single-cycle tone burst produced a hard woofer sound (though without any obvious mechanical noises) with an input of 56 watts to the 19-ohm impedance.

*Comments*

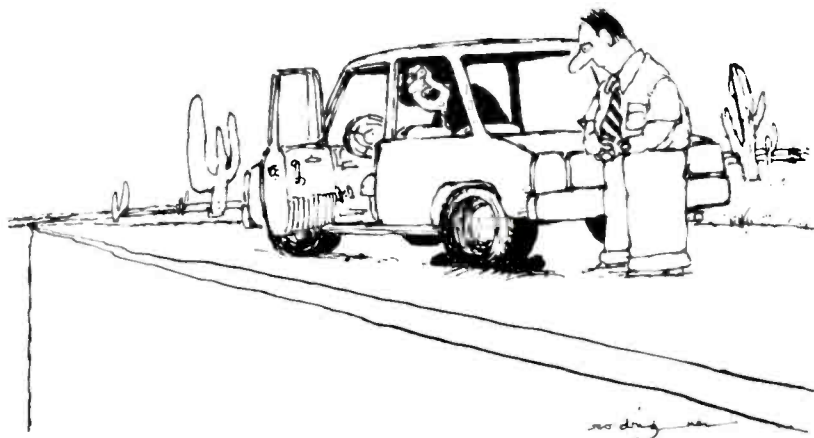
The Cambridge SoundWorks Ambiance speakers fully lived up to

the manufacturer's claims. Not only did they not sound at all like small speakers, but they easily held their own in comparison with some substantially larger and more expensive speakers. Not too long ago, any speaker of this size could be expected to produce a thin, often shrill sound. Its listenability would depend on the user's ability to roll off the excessive highs and to obtain usable bass output without obvious distortion or tubbiness—usually by placing the speaker against a wall or even in a corner.

In sharp contrast, we never felt the need to move the Ambiance speakers any closer to the back wall than about 2 feet, and at no time did we resort to tone controls or equalizers. The speakers sounded beautifully balanced, delivering a full-size sound image with not a hint of its origin in two small boxes. Comparisons with other, larger speakers whose bass extended down to 50 Hz or lower showed, however, that while the Ambiance was distinguished by its overall spectral balance and demonstrated excellent bass for its size, Henry Kloss has not worked a miracle.

Even without miracles, we can say that very few small speakers we have heard can match the overall sound of the Ambiance, and, like its manufacturer, we know of none that surpass it. It provides a lot of good sound from a small, attractive box at a hard-to-beat price.

*Circle 143 on reader service card*



*"... You know something, Richard, you're sick! Removing the spare tire so you can have a place to keep a spare subwoofer!"*





# THE FIRST ROCK GROUP THAT ACTUALLY IMPROVES THE SOUND OF OUR SPEAKERS.



One of the most advanced speakers on the face of the earth is made from the face of the earth.

Presenting the Technics CX Speaker Series. A remarkable 3-way speaker system made from one of nature's most unique sound conductors: mica.

In fact, mica has just the right characteristics for a speaker. It's lightweight yet extremely rigid. 1.5 times more rigid than titanium. Which means no matter what type of music you listen to, our mica speakers can reproduce it with amazing clarity.

More specifically, the pure mica dia-

phragm tweeter and midrange driver cones provide incredible accuracy. And the composite mica/pulp woofer not only delivers a deep, rich bass but helps eliminate the distortion that can accompany it.

What's more, the CX series is available in a bookshelf and two floor-standing models. The latter uses a linear compliance Passive Radiator in the rear of the cabinet to further improve low frequency re-

production and total efficiency.

So, if you appreciate a brilliantly clean sound, listen to the Technics CX Series.

We don't think you've ever heard rock sound like this before.



Technics Mica CX Series

**Technics**  
The science of sound

At Altec Lansing, we think it's time you had a hand in what you hear. That's the idea behind the new Altec 511 Tower, the first loudspeaker that gives you total control of amplification, tonal balance and imaging for each midrange, tweeter, upper bass and woofer. The result is a sound system that lets you mold the music precisely to your taste, so everything from Mozart to Motown will sound exactly the way you want it.

**AN UNHEARD OF  
ADVANCE IN  
AUDIO TECHNOLOGY.**

Five years in the making, this towering achievement lets the discriminating audiophile choose between single, bi, tri or quad amplification and an impressive range of tonal balance levels, all through a simple control panel. So now, you can tell the philharmonic how to conduct itself.

**SPEAKERS  
THAT LISTEN  
TO YOU.**



The remarkable 511 Tower is one of twelve new Altec Lansing speakers, all designed to reproduce sound with unheard-of accuracy.

If the new 511 sounds good, call 1-800-Altec 88 for the dealer nearest you. Then take a pair home and tell them what you want to hear.



**ALTEC  
LANSING**

**LOUDSPEAKERS FOR THE  
WELL TRAINED EAR.**

CIRCLE NO. 80 ON READER SERVICE CARD







### SNELL E/III SPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Snell E/III is a floor-standing, two-way vented speaker system. Its single 8-inch woofer is located just above the center of the speaker panel, with a 1-inch soft-dome tweeter above the woofer. The port is in the rear, near the bottom of the cabinet. The E/III also has a second, rear-firing tweeter, with a 3/4-inch dome, near the top of the back panel. Operating over approximately the same frequency range as the front

tweeter, its function is not to add brightness but to enhance the spaciousness of the sound by flattening the high-frequency end of the speaker's total output through reflection from the rear wall.

The E/III, like other Snell speakers, uses a high-order crossover network with steep slopes, at least 18 dB per octave. The crossover frequency is 2,700 Hz. The tweeter level, adjustable over a limited range by a knob in the back of the cabinet,

is factory balanced to give a system response within 0.5 dB of an original prototype speaker when the control knob is set to a reference mark. The inputs for the woofer and tweeters are brought out to separate pairs of binding-post terminals (which also accept dual banana plugs). The terminals are normally joined by jumper wires. If the jumpers are removed, the system can be biwired (driving the tweeter and woofer through separate wires from a single amplifier) or biamplified (using separate amplifiers for woofers and tweeters).

The specifications of the Snell E/III include a frequency response (in an anechoic environment) within  $\pm 1.75$  dB from 39 to 20,000 Hz through a horizontal angle of  $\pm 25$  degrees relative to the speaker's axis. The nominal system impedance is 6 ohms, and its rated sensitivity is 91-dB sound-pressure level (SPL) at 1 meter (anechoic) with a 1-watt input. The E/III is said to be suitable for use with amplifiers rated between 15 and 150 watts per channel. The cabinet is available finished in matched, hand-sanded and oiled oak or walnut veneers or in black. A black grille cloth, held by a continuous strip of Velcro around the edge, covers the entire front of the speaker. It is removable, but not easily. Dimensions are 13 x 35 x 11 inches, weight less than 50 pounds. Price: \$990 a pair. Snell Acoustics, Inc., Dept. SR, 143 Essex St., Haverhill, MA 01830.

#### *Lab Tests*

The close-miked bass response of the system, after combining measurements made at the woofer cone and the port, was perfectly flat between 70 and 230 Hz, falling off to -5 dB at 28 and 600 Hz. The averaged room response varied only  $\pm 2.5$  dB from 600 to 20,000 Hz. There was some ambiguity in splicing the two curves to form a composite response, which could have been interpreted either as having a 5-dB shelf (level difference) between the very uniform low- and high-frequency responses or as a relatively flat overall response except for a depressed output in the 1,500- to 3,000-Hz range. Since the output at low and middle frequencies is nor-



# VISIONARY.

It leaves an indelible impression on your senses even before you turn it on.

It's sleek. Stylish. Contemporary. It's sculpted brilliance. It's the Elize® Pro-92 Projection Monitor.

This is no mere television. It's a theatre-like experience so ahead of its time, it doesn't invite comparison. The picture? In a word perfect. Images are amazingly bright and sharp. The secret is an advanced lens system that dramatically enhances color reproduction, clarity and detail.

The Elite Projection Monitor. The future never looked so good.

For your nearest Elite dealer, call 1-800-421-1404.

ELITE  
BY PIONEER

© 1989 Pioneer Electronics (USA) Inc., Long Beach, CA

PIONEER

## TEST REPORTS

mally highly dependent on room characteristics and speaker placement, this matter had to be settled by listening and by quasi-anechoic FFT response measurements, which indicated that the overall response was very flat except for a drop of 5 or 6 dB through the upper mid-range.

The tweeter-level adjustment either boosted the output by as much as 2 dB over most of the range from 5,000 to 20,000 Hz or reduced it by as much as 4 to 5 dB through the

*If we had to describe the sound of the Snell E/III in one word, it would be "neutral." Rarely have we heard a speaker with as little coloration as this one, without any obvious emphasis or deficiency.*

same range. We found the best balance to be with the control set either in its "flat" position or at its maximum boost.

The minimum system impedance was 4 ohms at 150 and 10,000 Hz, and the maximum was 18 to 19 ohms at 55 and 1,200 Hz. Impedance also dipped to 4.5 ohms at 30 Hz. Although the system's average impedance was close to its 6-ohm rating, we would prefer to think of the E/III as a 4-ohm speaker. The measured sensitivity was a high 93-dB SPL at 1 meter with a 2.83-volt input of pink noise. With a 2-volt drive level, corresponding to a 90-dB SPL, the bass distortion was about 1.5 percent from 100 to 45 Hz, rising to 5.5 percent at 30 Hz.

The tweeter's horizontal dispersion was good, with less than a 6-dB difference between the output measured on-axis and 45 degrees off-axis up to 10,000 Hz. The rear tweeter's output was essentially flat from 6,000 to 20,000 Hz and sloped downward to -6 dB at 3,000 Hz. The system group delay was very uniform over most of the tweeter range, varying less than 0.2 millisecond overall in the range of 2,000 to 22,000 Hz.

The power-handling ability of the

Snell E/III with single-cycle tone bursts was very good. The woofer cone began to rattle with a 100-Hz input of 1,200 watts into its 4.8-ohm impedance. At 1,000 and 10,000 Hz, the amplifier clipped (at respective outputs of 425 and 1,580 watts) before the speaker's output was significantly distorted.

### Comments

The Snell E/III had an exceptionally neutral sound quality, and the octave-to-octave balance of its output was superb. It never sounded tubby or shrill, nor could it be characterized by any of the other pejorative terms that can be applied to some degree to the sound of most speakers.

These properties are consistent with Snell's stated goal in speaker design: to "deliver exactly what [the speaker] receives without distortion, coloration, or any other changes." We have seen such statements from other speaker manufacturers, but few have been as successful as Snell in achieving such aims in practice.

Everyone has his own criteria for judging speaker sound, and there are probably as many opinions as there are listeners. It was no surprise that side-by-side comparisons be-

tween the Snell E/III and other fine speakers revealed distinct differences between their sounds—but that would be true of any two speakers one might compare. If we had to describe the sound of the E/III in one word, it would be "neutral." Rarely have we heard a speaker with as little tonal coloration as this one. All the frequencies in our test recordings, from the fairly low bass (below 40 Hz) up beyond the limits of human hearing, were present in believable proportions, without any obvious emphasis or deficiency in any particular portion of the audible spectrum.

The most obvious illustration of this neutral quality is the way the E/III reproduced the sound of male voices. The upper-bass heaviness typical of the vast majority of speakers we have heard was totally absent from the sound of the Snell E/III. That particular coloration is perhaps the most common flaw we have encountered in otherwise good speakers, and it was refreshing to find an affordable speaker, with excellent credentials, measurements, and overall sound, that was free of it. All in all, the Snell E/III is a truly outstanding performer. And as a bonus, it looks as good as it sounds.

**Circle 144 on reader service card**



*"Whaddya mean you can't pick up a fingerprint on any of the compact discs? There's no such thing as a compact disc without a fingerprint!"*





## IT EVEN SOUNDS PICTURE PERFECT.

If true perfection is unattainable, they haven't told our engineers.

Case in point. The Elite® combination LaserDisc™/CD player. It is arguably the finest sight-and-sound machine ever created.

For one thing, it's the only LaserDisc player available with digital time base correction — which delivers a picture with unsurpassed brightness and resolution. And it features extraordinary CD

sound, something you won't find on any VCR.

As a CD player, its specifications would impress even the most ardent audiophile. So no matter how you look at it, the Elite CLD-91 makes perfectly good sense.

For your nearest Elite dealer, call 1-800-421-1404.



© 1989 Pioneer Electronics (USA) Inc., Long Beach, CA

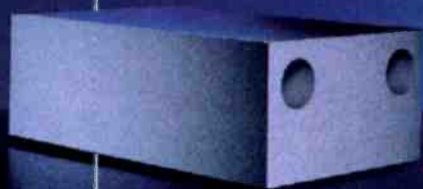
CIRCLE NO. 31 ON READER SERVICE CARD

# SYSTEMS FOR SMALL SPACES

Tight quarters?  
Consider some  
of today's  
sound solutions.

BY IAN G. MASTERS

Bose's Acoustimass SE-5 (\$799) is a small three-piece satellite-subwoofer speaker system. The omnidirectional bass module (rear left) can be hidden almost anywhere in a room, even under a chair or behind a sofa.





**T**HE white-on-white European room with the tasteful tapestries, sleek audio components, and speakers that would seem right at home in a science-fiction movie looks wonderful in the ad. So does the immense, overfurnished condo with the entertainment center that resembles Master Control at CNN. But most of us don't have the luxury of that sort of space—or money—and must put together our hi-fi systems on a somewhat smaller scale.

In truth, audio manufacturers design most of their equipment to fit in an "average" living room, whatever that might be. Although there are no real standards, the great majority of electronic audio components are between 3 and 6 inches high and about 17 inches wide, a width adopted from professional usage, where a 1-inch flange is added on each side for mounting in a standard 19-inch equipment rack. Speakers come in all sorts of sizes and shapes, but most are "bookshelf" size: about 2 cubic feet or a little less.

Such dimensions are modest enough. Even so, there are times when even "normal"-size gear is difficult to accommodate. Many apartments offer little space for stereo equipment; college dorm rooms, mobile homes, and even the average bedroom in a suburban house have still less space. But the appreciation of good sound has little to do with the dimensions of our living spaces. Of course, you could simply switch on your Walkman, clap on the phones, and let it go at that. Fortunately, however, there is no need to give up and settle for inferior audio quality just because you have space limitations; true high-fidelity equipment is available in every sort of configuration. Some careful planning and shopping should enable you to fit the kind of components you want into even the most Lilliputian of living quarters.

### *Fitting It In*

Sometimes it just takes creative arrangement of the system. Before you consider minicomponents—a fairly limited selection compared with the full range of audio equipment—it's worth looking at the space you have with an eye to fitting conventional components into it. For one thing, it may not be necessary to have all of the equipment



within arm's length, or even visible.

Separate power amplifiers, for instance, can be tucked away in closets or behind furniture, as long as there is adequate ventilation. And these need not be the kind of huge power plants we usually associate with the notion of separate amplifiers; several companies offer modest separates suitable both for small-size systems and for concealment. Often these amplifiers are intended primarily for powering extra channels in surround-sound applications, but they work just as well as main amplifiers where high output levels are not required. The PT-50 from Audio Design Associates or the NHT VA-1 would be ideal for such use. The VA-1 is even designed to accept signals from a TV set's speaker or headphone outputs—in fact, it can be driven by any component that has an output-level control, without need of a preamplifier, though you would be restricted to a single music source in that case.

Certain components—especially cassette decks, CD players, and turntables—are best situated within easy reach, but many other parts of a system could be operated entirely by remote control, enabling you to place them high up on a shelf, freeing more accessible space for the things you do have to get at. If you install components more than 2 or 3 feet apart, however, use good, low-capacitance cable to connect them or else various forms of interference, particularly hum, may creep in, and you may experience some loss of high frequencies.

An alternative is to keep the components together but to conceal the whole system—in a closet, perhaps, or under a bed, again making sure there's sufficient ventilation—and run it by remote control. Normally this would require a clear line of sight between your usual listening position and the equipment, but

there are a number of remote extenders on the market that can pick up infrared commands at a convenient place in the listening room and retransmit them to the equipment wherever it may be. You would still have to be able to get at some of the equipment from time to time, to change discs or tapes, say, and this might be a bit inconvenient, but most functions could be handled by the remote control.

An elegant, though pricy, solution to the problem of freeing up shelf space is offered by the Beosystem 4500 from Bang & Olufsen. While hardly a minisystem, it can be mounted on a wall like an elongated picture. The components themselves protrude only a couple of inches from the wall surface—except the turntable, of course, which sticks out about a foot.

### *Combinations*

Another way to conserve space is to seek out components that combine as many functions as possible on a single chassis. The most common of these is the receiver, which combines an AM/FM tuner, a preamplifier section with control functions, and a power amplifier. Most receivers are relatively low-powered, but in small rooms the need for massive output levels is unlikely to arise, particularly if there are neighbors on the other side of that paper-thin wall, so the 30 to 50 watts per channel typical of receivers should be adequate. While many receivers have full-size chassis, there are slimmer ones on the market that might fit your space more easily. In some cases small receivers offer fewer functions than their larger brothers, but their limitations will probably be acceptable; a small system is unlikely to require inputs for more than one or two external signal sources.

**O**THER sorts of combination exist as well. For instance, if you simply must have both tape and CD capabilities, you might look at Teac's tape deck/CD player combination, for use along with a conventional receiver. Alternatively, if you plan to listen chiefly to cassettes, you might consider a "casseiver," which combines a receiver and a cassette deck. These units often look like miniature rack systems but are actually single components, sometimes including a

The remote-controlled Aiwa X-79M, a complete minicomponent system for \$1,220, includes a 40-watt-per-channel integrated amplifier, an AM/FM tuner, a dual-well cassette deck, a six-disc CD changer, a turntable, three-way main speakers, and mini surround speakers.



Using a portable CD player or tape deck with the three-piece Pattern powered speaker system from Atlantic Technology can give you big sound from small components. The satellites and the subwoofer are separately amplified, and the system can be driven by virtually any line-level source as well as by conventional means with a receiver or an external amplifier. Price: \$499.

compact disc player as well. Many provide dual-well cassette mechanisms, with high-speed dubbing in some cases, and matching turntables are often available.

The most elaborate combinations look like giant boomboxes with detachable speakers. These "portable" audio systems are usually anything but, unless you have been pumping iron for some years, but they do offer a lot of flexibility in a small volume. In addition to the radio functions, many include not only a CD player but also dual cassette decks for dubbing. The amplifiers tend to be fairly low-powered, but the wattage may be enough for your situation. If not, virtually all of these systems have line outputs that can be used to drive an external amplifier. Practically all of the full-line audio companies make equipment in this class. Casio has four new ones in its Profound Sound line, increasing step by step in price and size; Aiwa offers a choice of six models. The selection is pretty

broad, so you should plan on doing a lot of shopping around if you decide to go this route.

Also, you should be aware that these all-in-one systems seldom match the performance typical of separate components. The main shortcoming of most, but certainly not all, of these systems is the quality of their speakers. If the one you choose is weak in that respect, make sure that it has outputs for external speakers. The original speakers might still be used if you travel with the system (though only a few such systems actually provide for battery operation).

**R**EPLACING the speakers may not be necessary, if you find supplied ones you like. This applies equally to a conventional boombox with nondetachable speakers: Some sound pretty good, although they are in the minority. If you latch onto one of those, you will have solved your space problem and

will probably save money into the bargain. One feature of many such units is a means of manipulating phase electronically to increase the apparent width of the sound stage. While these circuits vary widely in their effectiveness, the good ones might well add considerably to the listening experience in a small space. Also, some of the most ambitious portable systems incorporate circuitry to enhance bass performance, such as Panasonic's XBS, Hitachi's HPX, and others. Again, these might be beneficial in tight quarters, although many of them just add boom. With the possible exception of the Bose Acoustic Wave Music System, none of these one-piece systems is capable of reproducing low bass.

At the other end of the scale, several audio companies sell what are essentially conventional components housed in cabinets small enough to squeeze into very tight spaces. The 600 Series from Proton, for instance, is a group of separate



Acoustic Research's Powered Partners are two-way speakers with built-in amplification and shielded drivers so they can be placed on top of or near a TV set without degrading the picture. They can also be hung on a pole, mounted on a wall, or clamped to a shelf, and they accept any line-level source. Price: \$400 a pair.



components, enabling you to select only those functions you will use. The lineup includes a 60-watt integrated amplifier, an AM/FM tuner with Schotz noise-reduction circuitry, a CD player, a cassette deck, and a unified remote control.

### Feeding the Signal

Whatever you choose as the core of your system, your next concern will be what to use as signal sources. One very practical device to consider is a portable CD player; virtually all of these have line outputs and are capable of working on AC power. The best of them perform nearly as well as good full-sized players, and you will have the benefit of being able to use the player while you jog or ski as well as at home.

Similarly, it is possible to hook up a portable tape player to your home system, and many now offer such niceties as Dolby noise reduction and line outputs. Good as they are, however, few such portables are a match for their table-top equiva-

lents, so it might be wise to devote some of your precious space to a home-style cassette deck. These come in a variety of sizes, some quite modest.

**M**ANY stereo buyers these days are dispensing entirely with equipment to play vinyl LP's, but if you have a collection of them, you'll need a turntable (unless you can persuade a friend who has one to copy your favorites to cassette). Turntables come in many shapes and sizes, but some of the ones with linear-tracking arms are hardly wider than an LP and only 2 to 3 inches high, and these are ideal for cramped quarters. Make sure the cartridge you buy is the best you can afford, as this will have a profound effect on the overall sound quality.

### Small Boxes, Big Sound

As with any audio system, the most important components are the speakers, but usually these also take

up the most room. Fortunately, the idea that good sound is possible only from large speakers has been false for a long time, but you will have to shop carefully to find really good small ones. The best are compact bookshelf models, such as the Boston Acoustics A-40 or the NHT Model 1, which are comparable to much larger speakers except in deep-bass performance. Most truly miniature units are only barely adequate. Still, the sound of the smallest models from the major manufacturers usually resembles that of their larger relatives, and they are a good place to start looking (and listening).

Tiny speakers usually need a fair amount of power to develop reasonable output levels—sensitivity vs. size is a common tradeoff—but that may not matter in a small room. If it does, a pair of powered speakers, which contain their own amplifiers, may be what you need, and this approach can save you both money and space in the electronics part of



The first portable compact disc player to incorporate digital signal processing (DSP) technology and an eight-times-oversampling digital filter, Sony's D-555 Discman can also be used as a source component in the home when it is connected to a receiver, an integrated amplifier, or powered speakers. Price: \$450.



The remote-controlled A-007 integrated amplifier and D-007 CD player below are half of Luxman's new mid-size L-7 Design Series, which also includes the T-007 AM/FM tuner and K-007 autoreverse cassette deck. All together, the four matching components list for \$2,400.



For those who want to hear but not see their speakers, the a/d/s/ Model 300CC is a two-way in-wall system for \$300 a pair. Colors available on special order include black, light and dark gray, beige, mocha, and white, all with matching grilles and brackets. Standard finish is black textured urethane with a steel grille.



Yamaha's Active Servo Technology keeps the speakers in its 90 Series to a 3-inch depth. The five-piece system shown includes a CD player, integrated amp, tuner, and cassette deck (\$2,500).





your system. Small powered speakers have been available for some years, such as the RoomMates from Bose and the Powered Partners from Acoustic Research; both come in a variety of configurations. Sony offers a range of tiny powered speakers that have the advantage of working from either AC power or batteries, so you can take them with you for listening away from home.

**M**ANY compact speakers, even ones that are well balanced over the range in which they operate, may be fairly weak at the low end. One fairly recent solution to this is the "architectural" loudspeaker, which is built into a wall and uses the wall cavity as part of its enclosure. This is obviously not a solution where you don't own the walls or where there is somebody on the other side who would object to your music. And built-in speakers are really practical only if the areas where they could be installed make sense in terms of speaker/listener positioning. If none of these constraints apply, however, in-wall speakers are a good way to get very good sound without taking up any space at all.

Among the first companies to offer in-wall speakers were a/d/s/ and Sonance, both of which now have a number of models available and have been joined in this category by a large number of other companies. The Canton InWall 9, for example, is a coaxial speaker featuring a 9-inch woofer for good low bass. Polk Audio's AB-7 offers economy, at \$400 a pair, and MB Quart has adapted one of its existing speakers, the Model 280, for in-wall use. Wallspeaker Technologies produces speakers that are not, in fact, very small in terms of volume, but most of the system is hidden behind the wall, with only a small panel showing. Among the other companies that have entered this popular area of late are Boston Acoustics, Infinity, Niles Audio, Luxman, KEF, and Phase Technology.

A number of manufacturers have taken other approaches to the problem of small speakers, and their solutions may be yours as well. Tiny satellites used with small, separate woofer modules are ideal for very small rooms, since you can tuck the bass unit behind a sofa or under a bed or use it as a coffee table. Some of the tiniest three-piece systems come from Bose, whose Acousti-



mass models have both extremely small satellite speakers and modest-size bass units.

Just about as unobtrusive is the Model 1/Octave Bass Module combination from NHT, and Advent offers a system that can also be used outdoors. The ADC Model 3010 satellites and 3015 subwoofer are available either separately or as a package (Model 3025). And for high sensitivity, Cerwin-Vega sells the SAT-6. The four-piece Ensemble from Cambridge SoundWorks includes two separate bass modules to cope with standing-wave problems.

A novel way to deal with space is represented by the Duetto system from Revox, which consists of a single triangular enclosure containing two speakers radiating in opposite directions. This approach to stereo allows the cabinet to be relatively large, for good bass response, but still to occupy a small floor space.

Another route has been taken by Yamaha, whose YST speaker/amplifier combinations are capable of producing remarkably wide-range sound from very small speakers without the use of external subwoofers. A dedicated amplifier with special equalization circuitry is required, but this may make more sense than an extra speaker cabinet in the room. Yamaha now offers several amp/speaker combinations using this technology.

### *The Auto Alternative*

Another approach to investigate might be car stereo speakers, particularly the surface-mount models that come in their own enclosures. These can offer acceptable sound without taking up much space. Most of them are rated at 4 ohms nominal impedance, however, so you will have to make certain the amplifier or receiver you choose is happy with such a load.

In fact, for people with extreme

space constraints, a whole system made up of autosound components might be a reasonable alternative. These days you sacrifice hardly anything in terms of sound quality with car stereo electronics, but the space that the equipment occupies is minimal. If you decide to do this, you'll need a regulated 12-volt power supply, but these are fairly common. Be aware, however, that a car stereo amplifier is likely to draw quite a few amps of current—more than the basic Radio Shack power supply can provide. Car stereo source components combined with powered (AC-powered, that is) speakers could be the answer.

### *On the Table*

Your needs may not be very complicated, on the other hand, in which case a "table-top" stereo system might suffice. The Proton RS-420, for instance, is basically an upscale clock radio that offers an optional extension speaker for stereo listening. Sony's ICF-CS970 is also basically a radio, but in this case it incorporates a pair of speakers in a single enclosure, along with a low-frequency-enhancement system that the company calls Mega Bass. Unlike the Proton, the Sony unit has an input for a signal from the headphone output of a portable tape or CD player. Denon's DT-400 two-piece table-top hi-fi system provides both line inputs and ones that will accept a headphone feed.

**S**OMEWHAT closer to conventional audio components is Yamaha's C10 Unity System, which features not only diminutive electronics but also speakers using the company's YST technology. Luxman, Nakamichi, Bose, and several other manufacturers also offer fine-sounding miniature systems. One of the most elaborate examples of this class of equipment is the Proton AT-3000, which includes not only a pair of small speakers and the amplifiers to drive them but a built-in cassette deck and a CD player as well. The whole thing can be operated from its own remote control.

However you choose to tackle your space problem, you can take heart that there is a lot of very good equipment out there that doesn't take up much room. You may have to look fairly hard to find it, but that's only because it's so small. □

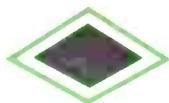




A SPECIAL TEST REPORT

# NAKAMICHI MODEL 1000 DIGITAL AUDIO TAPE DECK

The new standard for tape recording



**Y**EARS ago, back in 1973, a single, startlingly advanced tape recorder—the Nakamichi 1000—in one stroke made the cassette an integral part of the stereo world and established a reference standard against which the entire tape-recorder industry would thereafter be measured.

That same honored model designation now adorns another startlingly advanced tape recorder, a machine that bids fair to make digital audio tape (DAT) an integral part of this generation's stereo experience. Once again the Model 1000's technological innovations and sonic performance set a reference standard. And if its price puts it beyond the reach of all but the most fortunate audiophiles, it should be remembered that the original Nakamichi 1000 cassette deck also cost three to four times as much as its competition—and was worth every penny.

Like its forebear, the new Nakamichi 1000 is the first recorder in its class to offer direct source-vs.-tape monitoring. Its four heads (two write, two read) allow instant comparison between the input signal and

its recorded result. The Nakamichi 1000 is also the first DAT deck to permit digital-to-digital recording of CD's and other DAT's, insuring that their intrinsic sonic qualities will not be compromised by the previously required digital-to-analog (D/A) and analog-to-digital (A/D) conversions. (A recently concluded agreement between the Recording Industry Association of America and the Electronic Industries Association should soon permit this feature to be included in other future DAT recorders.) Of course, direct digital dubbing also requires that the user's CD player have digital as well as the usual analog outputs.

The Nakamichi 1000 Digital Audio Recording System comprises two main units and a full-function wireless remote control. Its internal construction is as battleship-solid as its outer styling is futuristic. Modular plug-in circuit boards are used throughout, which not only permits easy conversion to the higher signal levels of the professional version of the Model 1000 but also facilitates future updating to accommodate any changes in the DAT format as the technology evolves.

BY CRAIG STARK

PHOTO BY ROBERT BUTLER

STEREO REVIEW JANUARY 1990 81

## Laboratory Measurements

### Fast-forward/rewind times (C-120):

high speed	26 seconds
low speed	60 seconds

### Speed error

not measurable

### Wow and flutter

not measurable

### Line input for indicated 0 dB

0.35 volt

### Line output at indicated 0 dB

2.2 volts

### PLAYBACK PERFORMANCE

LEFT RIGHT

(Sony TY-7551 test tape)

#### Frequency response (dB)

1,000 Hz	0.00	0.00
20 Hz	+0.15	+0.10
100 Hz	+0.17	+0.04
10,000 Hz	+0.04	-0.09
20,000 Hz	-0.32	-0.43

#### Signal-to-noise ratios (dB)

unweighted	106.23	108.17
A-weighted	114.89	115.29
CCIR/ARM-weighted	113.82	113.85

#### Crosstalk (dB)

1,000 Hz	102.25	102.06
10,000 Hz	87.81	87.16
-60-dB level	-59.99	-59.97

#### Total harmonic distortion

at 1,000 Hz	0.0017%	0.0017%
-------------	---------	---------

### RECORD-PLAYBACK PERFORMANCE

LEFT RIGHT

#### Frequency response (dB)

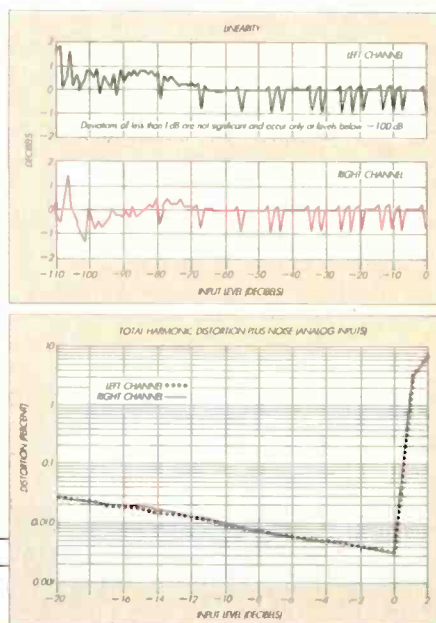
1,000 Hz	0.0	0.0
20 Hz	-0.008	+0.013
100 Hz	+0.005	+0.002
10,000 Hz	-0.236	-0.093
20,000 Hz	-0.906	-0.872

#### Signal-to-noise ratios (dB)

unweighted	93.7	92.8
A-weighted	96.7	96.5
CCIR/ARM-weighted	93.2	93.1

#### Crosstalk (dB)

1,000 Hz	93.5	93.5
10,000 Hz	72.5	71.9
-60-dB level	-59.98	-59.97



## Digital Recording

PRESSING the eject button on the recorder unit opens a vertically hinged door with a slot into which the tiny ( $2\frac{7}{8} \times 2\frac{1}{16} \times \frac{3}{8}$ -inch) DAT cassette is inserted.

Up to 2 hours of continuous recording are possible using C-120 cassettes. (The lower-fidelity half-speed option in the DAT standard is not supported.) The remaining tape in a cassette is visible through a clear window in the door. Also visible, through an adjacent window, is the deck's remarkable helical-scan head assembly, which incorporates several Nakamichi innovations in transport design.

Most DAT transports are based on VCR designs, which position the tape against the rotating head drum by means of a single pair of movable loading pins. In contrast, the Nakamichi F.A.S.T. design (F.A.S.T. stands for Fast Access Stationary Tape Guide Transport) uses a pair of stationary, four-pin tape guides that not only position the tape more precisely, relieving some of the burden normally imposed on the error-correction circuitry, but also reduce the time needed to load the tape to less than 2 seconds.

The shallower tape-wrap angle of the F.A.S.T. mechanism (90 degrees rather than 180 degrees) also enables the deck to use a unique "half-load" tape position at times when audible high-speed cueing is not required. The half-load position permits faster winding speeds with less tape wear than is possible in conventional designs. The direct-drive reel and braking motors are operated by microprocessor-controlled servo circuits. The four heads are made of ferrite (with a sputtered-sensidust film) and have a rated life of 10,000 hours.

The main pushbuttons on the recorder unit control the tape motion and will be familiar to any cassette user. Two fast-winding speeds are provided; the slower one permits audible cueing. A two-speed digital fader facilitates smooth transitions between recorded selections. Conventional memory programming for up to ninety-nine selections is provided through a calculator-style keypad, and there are additional switches for automatic rewind, play, and timer-activated record and play



operations. The setting of the tape/source switch and all other important operating conditions are signaled with LED indicator lights. The deck records and plays back digital sources at sampling rates of 48, 44.1, or 32 kHz (automatically selected to match the source). Analog sources are recorded at the standard 48-kHz sampling frequency.

Less familiar to the cassette user are the full facilities provided in the Nakamichi 1000 recorder unit (and duplicated in the remote control) for locating, writing, and erasing the *start*, *end*, and *skip* codes that are part of the subcode field structure of the digital tape format. These inaudible DAT codes can be written during recording or added later, during editing. Tapes can be digitally marked to skip automatically past bad takes or accidentally recorded FM commercials. Start ID codes can be automatically inserted each time the deck is restarted, or they can be manually inserted at any point, and overall program sequencing can be renumbered at the touch of a button. With the manual editing facilities, the various digital codes can be shifted on the tape in increments as small as 0.15 second, making for very tight electronic "splices."

The recorder unit has two numeric LED readouts. One shows the current program and search numbers, and the other displays either counter units (inches per second), program time, time from the start of the tape, or time remaining on the tape. Both conventional coaxial (RCA-type) and fiber-optic inputs and outputs are provided, and a supplemental pair of rear-panel connectors permits connection and remote control of additional "daisy-chained" DAT machines.

## Digital Processing

**T**HE Model 1000 recorder itself operates entirely in the digital domain, and the signal level is controlled directly by the numbers that represent it. All the D/A and A/D circuitry and connection facilities for the system are therefore located in the companion Model 1000p digital audio processor. The 1000p can be switched between two DAT recorders (it also permits DAT-to-DAT dubbing) and can even be used as a super-high-



The Nakamichi 1000p digital processor has pull-out drawers for its modular circuit boards and connectors to make it easy to update or upgrade the system.

quality external D/A converter for a CD player or other digital source. As with the transport mechanism, here too Nakamichi's no-compromise design philosophy and innovative technology are apparent.

Nakamichi equipment has always reflected a high concern for maintaining the linearity of very low-level signals, signals that others might dismiss as being "down in the noise level." In the digital domain this concern manifests itself in an emphasis on the importance of properly decoding the least significant bits (LSB's) in a digital signal.

In order to insure ultraprecise (low-noise, low-distortion) decoding of all 16 bits in each digital "word," the Model 1000p employs a 20-bit D/A converter with a 20-bit, eight-times-oversampling digital filter. The converter uses two high-precision, 16-bit converter IC's per channel, one for the 14 most significant bits, the other for the remaining 6 bits. To gild the lily, both of these IC's are individually tested on an even higher-precision 22-bit test instrument. The error data from these measurements are then stored in read-only memory chips and fed back into the converter IC's to counteract their own errors!

Similarly, since even the best D/A converters generate some predictable noise "glitches" in the conversion process, Nakamichi developed a Digital Glitch Cancellation Cir-

cuit that generates precisely timed equal and opposite noise pulses to null the glitches out.

At the A/D conversion end, the Model 1000p again employs a unique technique, a "charge comparison" system that avoids the need for conventional sample-and-hold circuits. Nakamichi contends that sample-and-hold circuits inevitably degrade low-level signal linearity, so they are not tolerated in its equipment. (An analogy might be made here to Nakamichi cassette decks, which carefully push the ordinary cassette pressure pad out of the way.) Finally, the A/D converter in the 1000p automatically calibrates each of its 16-bit quantization levels in the first 1.5 seconds after the deck is turned on.

While this description of its circuit innovations may give the impression of technological complexity, the front panel of the Model 1000p processor is remarkably uncluttered and easy to work with. Three pushbuttons select among DAT 1, DAT 2, or SOURCE, and a small SOURCE switch is set to analog or digital as appropriate. Additional switches control DAT-to-DAT dubbing and, for analog sources, provide a choice of using treble pre-emphasis or not. Indicator LED's show the sampling rate in use and whether pre-emphasis is being employed.

No level controls are needed for

digital recording, but left, right, and master record-level controls are provided for analog sources, and the analog outputs have both playback and headphone level controls. Signal levels are displayed on two thirty-two-segment peak-indicating LED arrays, which are calibrated from 0 dB (plus OVER) down to -60 dB. The level display can be switched to hold signal peaks up to 4 seconds or even be turned off.

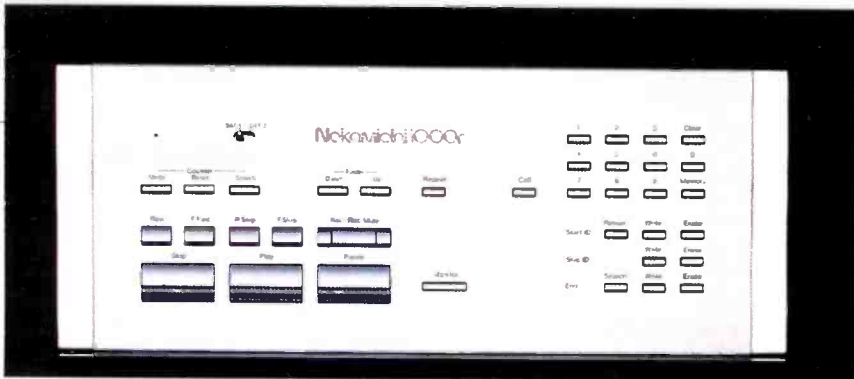
The rear panel of the Model 1000p provides enormous flexibility in making connections to other components. As with the recorder unit, both coaxial and optical connectors are provided for digital signals. For analog equipment, the 1000p provides both professional, balanced-line Cannon connectors and conventional, unbalanced phono plugs. The fixed-level and variable-level analog outputs are switch selectable. As a final touch, the signal ground of the RCA-type connectors is separate from the chassis ground, making it easy to avoid ground loops in professional installations. Two AC convenience outlets and a chassis-ground screw connector are also provided.

The Nakamichi Model 1000 recorder measures 17 $\frac{1}{8}$  inches wide, 14 $\frac{1}{2}$  inches deep, and 5 $\frac{1}{4}$  inches high, and it weighs some 35 pounds. The 1000p processor has the same dimensions but weighs 38 pounds. Price: \$11,000, including the remote control. Nakamichi America Corp., Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502.

## High Performance

**W**E tested the playback frequency response of the Nakamichi Model 1000 with our Sony TY-7551 digital test tape (recorded at a 44.1-kHz sampling rate) and found that neither channel deviated by as much as  $\pm 0.5$  dB over the 20-Hz to 20-kHz range. The overall record-playback response (recording at the 48-kHz sampling frequency used for an analog source, such as our Audio Precision test instrument) across the same spectrum showed a similar uniformity.

We checked total harmonic distortion (THD) both as a function of frequency and (at 1,000 Hz) as a function of level. At 0 dB the distor-



The control layout of the remote unit matches the front panel of the recorder.

tion hovered around 0.003 percent across most of the 20 to 20,000-Hz band, rising to less than 0.01 percent at 20 kHz. More important than such minuscule figures, however, was the deck's distortion behavior as a function of level. As can be seen in the graph on page 83, the distortion declined up to the indicated 0-dB point but thereafter rose very sharply. This behavior is an inherent characteristic of digital recording, for once the maximum signal level (all binary 1's) has been reached, there are no more bits left to represent the signal. Recordists who are accustomed to "running into the red" (being saved from distortion by the deck manufacturer's having calibrated "0 dB" at a very low level) will have to change their approach when setting their recording levels on DAT decks. Fortunately, for digital-to-digital dubbing the "record level" is set by the signal.

Erring on the conservative side when setting record levels is not much of a sacrifice when using the Nakamichi 1000, however, because of its remarkably high signal-to-noise ratio (S/N). On an A-weighted basis we measured a 115-dB S/N for playback only and a 96-dB record-playback S/N. Few straight amplifiers, let alone tape recorders, can match that kind of performance.

Input/output levels were entirely normal for digital audio equipment, and, of course, there was no measurable speed error or wow and flutter. In high-speed rewind the Nakamichi 1000 zipped through a 2-hour (C-120) cartridge in 26 seconds.

## Listening Satisfaction

**I**T'S hard to convey to anyone but another audiophile the combination of awe and sensuous satisfaction that working with an instrument like the Nakamichi 1000 produces. Its operations were silent and smooth, swift but never

rushed. Watching it load and handle a tape was almost hypnotic.

The acid test, of course, lay in source-vs.-tape comparisons of dubs from a wide variety of sources. We alternately hooked up the Model 1000 to the digital output of our CD player (a single cable carries both channels), to its normal (analog) outputs, and to the outputs of our open-reel mastering recorder.

To say the Nakamichi 1000 made audibly perfect dubs is, if anything, an understatement. Apart from hearing a slight click (which was not recorded on the tape) when the source/tape switch was pressed, not one of a whole cadre of audiophiles we brought in for the tests could detect any difference whatever between the original and the copy.

The record-playback performance of the Nakamichi 1000 was so eerily clean that we frequently found ourselves having to stop the deck with the monitor switch in the tape position (thereby killing the sound) just to assure ourselves that we hadn't been listening to the source signal the entire time. In all honesty, we could not be certain that we could consistently detect an audible difference even on CD's dubbed through the *analog* outputs of the player.

This kind of performance does not come cheap, of course. The Nakamichi 1000 costs more than most people's entire hi-fi systems. That was true also of the Nakamichi 1000 cassette deck. Equipment of this caliber is not intended for a large market, and Nakamichi will probably, as in the past, follow the Model 1000 with more popular-price models that do not significantly sacrifice performance. The key, however, is to start at the top, not to try to work your way up to it. That is what Nakamichi has done with the Model 1000 Digital Audio Recording System, and that is why it will long be the standard by which the entire industry's DAT introductions will be judged. □



# FIND THE SPEAKERS

A decorator's dream, the in-wall speaker is no longer  
an audiophile's nightmare.



**T**HERE was a time, not long ago, when loudspeakers were flaunted like great paintings, worthy of prominent display in even the most stylish living rooms. Never mind that the big boxes clashed with the decor and devoured more floor space than a full-length sofa—that was seen as a fact of life, a small price to pay for having great music. And besides, those big speakers *looked* so impressive.

But today there's an entirely new parlor game being played in the trendiest of homes: It's called "find the hidden speakers." No ong-

BY WARREN BERGER



er considered chic on the floor, the big boxes have shrunk and gone into hiding in the walls. Home decorators are opting to fill the void with furniture, art, and other silent objects—though they still want to fill the room with great sound, just as before. That's why high-quality, in-wall speakers are coming out of the woodwork these days.

**T**wo to three years ago, there were only a few companies building in-wall speakers, and demand was limited primarily to commercial applications. But then several high-quality speaker companies, including Polk, KEF, Boston Acoustics, Sonance, and a/d/s/, got behind in-wall technology and upgraded the sound. Their products quickly attracted the interest of a certain upscale, design-conscious demographic group that goes by an overused label I won't repeat here (I'll just say it starts with a "y"). By now, seemingly everybody in the speaker business has jumped into the category with both feet; shoppers can choose from among more than a dozen brands.

What's driving the in-wall boom? First and foremost, it's a matter of interior design. These chameleon-like speakers can blend into any setting and become part of the decor of a room without taking up valuable space. In most cases, the only part of the speaker that's visible is the faceplate, which usually measures no more than 8 x 12 or 6 x 10 inches and mounts flush with the wall. The grilles are clean and contoured, and they can be painted or covered with cloth to match the wall perfectly; sometimes colored or patterned grilles are used to accent a room's design. In short, in-wall speakers are a decorator's dream.

But even more important, they're no longer an audiophile's nightmare. Early in-wall models were little more than modified car stereo speakers; as such, they were out of place in spacious rooms, lacking the necessary imaging and bass capabilities. In the last two years, however, the category has taken several steps forward. The latest in-wall speakers feature sophisticated crossover networks and the kind of high-quality woofers and tweeters found in the better free-standing speakers.

Until recently, the big disadvan-

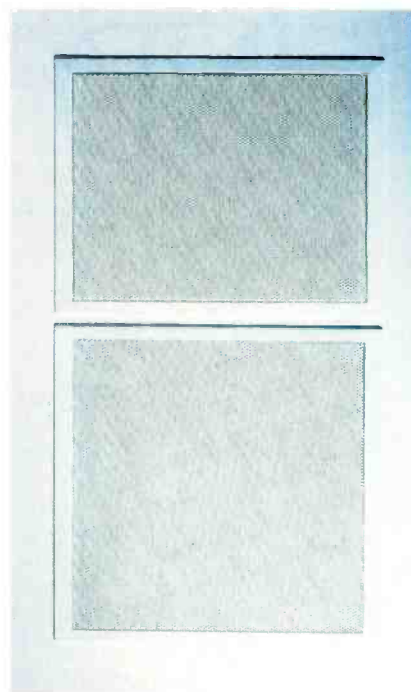
tage of in-wall speakers was that they lacked bass. But companies such as Canton are now putting bigger woofers in their in-wall speakers to beef up the low end. And KEF, Polk, Triad, Sonance, and others have gone a step further, introducing a new wave of three-piece systems that include in-wall subwoofers. A subwoofer in the wall can produce startling results: While you still can't see these in-wall systems, you can *feel* them. They rock the house.

With that added low-end muscle, speaker companies and retailers are seeing a fundamental change—some of the industry folks are actually quite surprised by it—in the way in-wall speakers are being used in homes. "In the beginning, the idea was to use in-wall speakers for background music in kitchens or dens," said Polk Audio's Rob Ain, "but now in-wall speakers are definitely moving into primary listening areas."

While Ain and others readily concede that in-wall speakers still cannot quite match the best self-contained speakers in sound quality, they say the technology is coming close enough to satisfy many listeners, who are now putting speakers into their living-room walls. And we're not just talking about two speakers in the room: In-wall speakers are becoming particularly popular for multispeaker, surround-sound entertainment centers.

The notion of using in-wall systems in the living room is somewhat radical and not necessarily endorsed by audiophiles. Some, such as Wayne Puntel, owner of Cleveland's Audio Craft stores, continue to hold to the position that in-wall speakers are best in secondary applications. Puntel points out that while the speakers themselves have improved, the old obstacles to good sound remain the same: With in-wall designs, speaker placement is dictated by factors other than the ideal listening position, and the wall itself can become a part of the sound process as it vibrates. "There are too many variables that can't be controlled," Puntel noted.

Still, like others who don't recommend in-wall speakers for the living room, Puntel acknowledges that "built-in speakers are great for family rooms and dens," not to mention bathrooms, kitchens, and bed-



**K**EF's CR200F full-range speaker (above, top, \$450 a pair) can work alone or be combined with the CR250SW subwoofer (bottom of photo, \$550). In three-way operation, the audio signal is fed to the subwoofer's crossover network, which has output terminals for the satellites. The subwoofer can be installed anywhere along a wall and still maintain the stereo image.

**D**escribed as providing high-fidelity sound in "impossible" places, the Boston Acoustics Model 350 (previous page) can be mounted flush in walls or any other flat surface. The driver diaphragms are said to be waterproof, allowing the speaker to be used in kitchens, bathrooms, and even boats. Price: \$400 a pair.



**T**riad's System 6 in-wall speakers use the same drivers and polypropylene capacitors as the company's three-piece stand-alone systems. The subwoofer (far right) is powered by its own 70-watt amplifier. Each speaker's fabric grille and aluminum grille frame can be painted. System price: \$600.



**A**xion recommends positioning its two-way AX 1.5 Wallmount speakers at ear level on one wall to achieve the best response. The tweeter was designed for maximum dispersion and linearity to provide a realistic stereo image and sound stage, and the woofer is said to handle a wide dynamic range without distortion. Suggested retail price is \$339 a pair.

**P**olk Audio's AB700's feature 1-inch Polk SL2000T silver-coil dome tweeters and 6½-inch MW6512 trilaminate-polymer woofers. Nominal impedance is 6 ohms. Sensitivity is rated as 90 dB sound-pressure level and maximum output as 114 dB SPL. Price: \$400 a pair.



**T**he a/d/s/ Model 200CC hideaway speaker is available in six colors including white so the case, grille, and mounting brackets can be painted to match the color of a room. The two-way acoustic-suspension system has a 4-inch long-excursion woofer and a 1-inch soft-dome tweeter. Impedance is 4 ohms. Price: \$330 a pair.

rooms. Of course, there are different needs and requirements for different rooms. A system for a family room might need a subwoofer, whereas just a pair of high-quality speakers would do the job in a bedroom or kitchen. A bathroom might call for smaller, less powerful speakers—though they'd have to be moisture-resistant.



As in-wall applications expand, speaker companies are broadening the selection in their lines. Most now have two or three different models at prices ranging from \$200 a pair for the most basic speakers to \$400 or \$500 a pair for high-quality systems. Throw in a subwoofer, and the cost climbs into the \$700 to \$800 range, or about \$1,000 when installation fees are included.

While in-wall speakers all tend to look the same, they're clearly not all created equal. Manufacturers are using a variety of materials and design approaches for the speaker interiors and enclosures, and a lot has changed just in the last year.

Polk, for example, broadened its line for this winter with the AB-300 (2½-inch woofer, ¾-inch tweeter), the AB-700 (6½-inch woofer, 1-inch tweeter), and the AB-800 (two 6½-inch woofers, 1-inch tweeter). The systems all feature trilaminate-polymer bass/midrange drivers and silver-coil, polymer soft-dome tweeters. Available as an option with any system is Polk's new AB-1W, an in-wall subwoofer with two 6½-inch drivers. Boston Acoustics has also added a new speaker to its in-wall selection: the Model 325 in the company's Designer Series. It's smaller than the company's other in-wall models, the 350 and 360, measuring just 6¾ inches square, with a 5¼-inch, copolymer, moisture-resistant woofer.

Triad's Inwall Systems Six and Seven feature 3½- and 5-inch midranges, respectively, and both systems come with a woofer powered by a separate 70-watt bass amplifier. Sonance, which has one of the fullest lines of in-wall speakers, now has two subwoofers designed for in-wall installation, the VCA1 and the PSW2. The VCA1 is a powered system featuring a versatile outboard amplifier; the PSW2 is passive. The company has also updated its So-

nance I speaker (now the Sonance IA) with a 6½-inch polypropylene woofer, and it still carries the original Sonance IV and the miniature M-30 for space-tight bathrooms and kitchens.

KEF's new CR 160 is a two-way system that mounts in either a square or a round frame and features a design that places the tweeter at the apex of the woofer cone. KEF also now offers a flush-mounting 10-inch subwoofer, the CR250SW. Bose's rounded 102-S/E speaker, intended for use with the company's Acoustimass Music System, is designed to be recessed in the ceiling adjacent to a wall, from which the sound is reflected. The Architectural Series from a/d/s/, which already included both a compact in-wall speaker, the 300i/TR3, and the larger C400i, has been expanded to include a passive subwoofer, the SW2, which can fit between floor and ceiling joists.

Among the newcomers to the in-wall scene is Niles Audio, whose Blueprint Series includes three speakers: the Models 100 and 200 have 6½-inch woofers, and the Model 300 has an 8-inch woofer and a soft-dome tweeter. Infinity has also come on board with its Environmental Reference Standard (ERS) series. Three models, the ERS 500, 600, and 800, feature woofer sizes of 5¼, 6½, and 8 inches, respectively; the two larger models include an independent tweeter-level control to allow high-frequency fine-tuning. JBL is offering the Signature Series S-3 and S-4 in-wall speakers, which feature the company's titanium drivers and high-polymer-laminate woofers that measure 5¼ and 6½ inches. Canton's new InWall 9 system boasts a big 9-inch woofer and an aluminum-manganese tweeter in a coaxial design. Luxman's S-505 has an 8-inch woofer with a graphite-impregnated polypropylene cone and a soft-dome tweeter. Axiom's AX 1.5 Wallmount has a 6½-inch woofer and a ¾-inch dome tweeter; the grille measures 13½ inches high and 9½ inches wide. Ambria's C-200 and C-300 feature 5½- and 6-inch woofers, respectively, and soft-dome tweeters. Other newcomers include Fosgate, Audio Concepts, and Gold Sound, which has a full line of 5-, 6-, and 8-inch two-way systems.

Choosing from among all of these brands and models isn't easy. Dealers advise that you request a demonstration: Most stores, if they're serious about in-wall speakers, now have a demo area with speakers actually built into a wall. It's important to keep your room and intended application in mind as you shop. And don't forget to inquire about ease of installation—you may decide you can do it yourself.

Most manufacturers have taken pains to simplify the installation process through clear instructions and well-designed hardware, including easy-to-install mounting brackets. But the job is still not recommended for beginners. If you buy from a specialty audio dealer, you can turn to its custom-installation department, whose staff will know exactly where to put the speakers for the best sound. Professionals also know how to do the job cleanly. The same cannot be said for the average guy with a drill in his hand, who's liable to crack plaster, go through the back of the wall, cut insulation, or sever electrical wiring. A lot of things can happen inside a wall, most of them bad.



If you do decide to install your own in-wall speakers, as about 25 percent of today's buyers do, there are a few points to keep in mind. For wall-mounting a subwoofer, an exterior wall is recommended because it's more rigid than an interior one. Don't put in-wall speakers beside an air duct; the music will travel through the vents, and you'll end up with a "multi-room music system" you never bargained for. And if you are setting up a real multiroom system with in-wall satellites throughout the house, be aware of the impedance load; a secondary amplifier may be needed to feed all of those power-hungry speakers.

When the drilling stops and the dust settles, you should end up with a system that's physically and visually unobtrusive, which is what in-wall audio is all about. Then you can invite a few friends over, crank up the volume, and challenge them to find the speakers. Of course, it may not be as gratifying as showing off a pair of 6-foot-high boxes, but at least you'll have room for the sofa. □



**T**hree models make up Infinity's Environmental Reference Standard series of in-wall speakers. The ERS 800 shown here (\$600 a pair) has a tweeter control that enables the user to fine-tune the system to fit any room. It has an Infinity IMG long-throw woofer and EMIT k tweeter.



**T**he Canton InWall 9 speaker (left, \$600 a pair) was designed so that its drivers and crossover can be removed easily if they require servicing. The coaxial system has a 9-inch woofer and a 1-inch tweeter. The white metal grille can be used as is or painted.



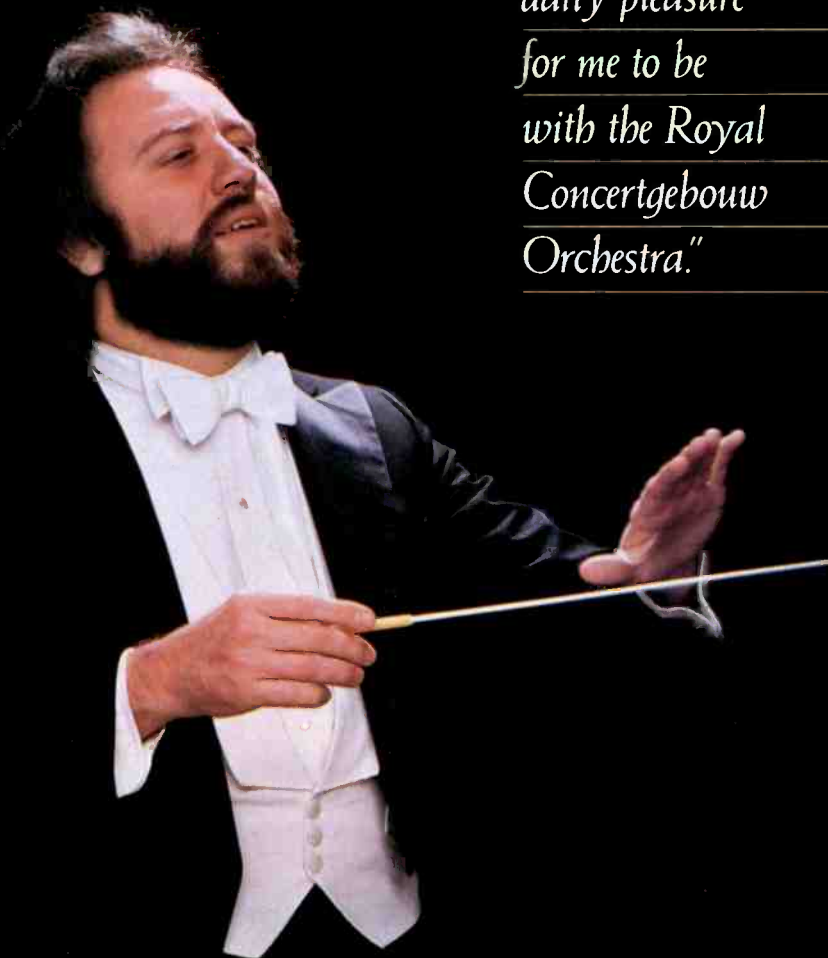
**T**he Model 300 (right, \$460 a pair) in Niles Audio's Blueprint line is sold with mounting brackets for new or existing walls or drop ceilings. Designed for outdoor use also, it is resistant to water and ultraviolet rays. The metal grille comes either in white or a weather-resistant paint.



**S**onance developed the first high-fidelity in-wall speaker in 1981. Its top current speaker, the IV, has a rated frequency response of 35 to 22,000 Hz  $\pm$  2 dB. The two-way system uses an 8½-inch polypropylene-cone woofer and a 1-inch polycarbonate-dome tweeter. Price: \$650 a pair.

# RICCARDO CHAILLY

*"It is such a  
daily pleasure  
for me to be  
with the Royal  
Concertgebouw  
Orchestra."*



*by Roy Hemming*

**M**ORE than a few eyebrows were raised when the great Concertgebouw Orchestra of Amsterdam (now called the Royal Concertgebouw), for the first time in its hundred-year history, broke a proud national tradition and named a non-Dutchman as its new music director beginning with the 1988-1989 season. The choice to follow such world-renowned Dutch conductors and international recording stars as Willem Mengelberg, Eduard van Beinum, and Bernard Haitink turned out to be a young Italian, Riccardo Chailly (pronounced shy-ye).

For the preceding three years, the energetic but soft-spoken, mop-topped, and bearded Chailly, still in his early thirties, had been attracting attention as the conductor of the Berlin Radio Symphony, although he remained best known as an opera conductor in the major European and American houses. He was also well known for daringly zooming around on his motorcycle, until an accident in northern Italy put him in the hospital with painful arm injuries that not only prevented him from conducting for several months but also brought an ultimatum from his wife: Choose between the motorcycle or her. She won.

No one was more surprised by the Amsterdamers' choice than Chailly himself. "I never expected it," he told me in New York soon after the news was announced. "That's the sort of appointment you don't dare dream about at my age. Naturally, I'm thrilled. It's such a fantastic orchestra. I also have to say it is very humbling to be the successor to Bernard Haitink, whom I have always admired so *very* much. I can't help but think, too, of the many deserving conductors who never arrive at such a position. It's a matter of luck, I guess—of the right moment in your career and so many things you can never predict in advance."

Last year, toward the end of his first sixteen-week Amsterdam season, I talked with Chailly again. How did he feel things had gone so far? "I know it sounds banal," he began somewhat apologetically, "but it is such a daily pleasure for me to be with this orchestra. I think we've established a very good relationship. The important thing is to maintain it from week to week, without getting too used to each



other or taking each other for granted."

Any surprises? "I have found in the Netherlands a great love for Italian music," he said, "and many complaints that it isn't performed enough. *That* surprised me." The Royal Concertgebouw Orchestra, of course, has a great reputation for late-Romantic music, with German repertoire heading the list of its best-known recordings. So, as an Italian, Chailly admits he was cautious at first, since he did not want to appear to be "pushing" his native country's music. Actually, his own reputation in the concert hall has been built primarily in German and Russian repertoire, though when it comes to the opera house, his reputation so far is definitely based on Italian works.

A major test came a little over a year ago when, as the Amsterdam orchestra's new music director, Chailly had to lead its hundredth-anniversary concert. The management wanted a big, special, choral work. Chailly suggested the Verdi Requiem. "It was enthusiastically accepted—and it was a huge success," Chailly noted happily. Obviously, in the future he will be programming more works by Italian composers, with no guilt feelings.

**C**HAILLY is openly proud of his Italian roots, but like such compatriot conductors as Claudio Abbado, Giuseppe Sinopoli, Riccardo Muti, and Carlo Maria Giulini, he is no narrow nationalist. Although he traces some of his ancestors to France, he claims no relationship to the celebrated French musicologist Jacques Chailly. But music certainly runs in his family. His father, the composer Luciano Chailly, was for fifteen years artistic director of RAI, the Italian radio and television network, and for five years artistic director of La Scala.

"My father was against the idea of my becoming a conductor," Chailly confessed. "He had been inside the music business for many years, so he knew just how hard it is to have a career as a conductor. But I think I knew from the age of ten that that's what I wanted to be. My father took me to the RAI studios with him one Saturday morning and left me to watch the orchestra rehearse while he went to do some work. I can still feel the shock, the impact of the world of sound I discovered that day—and the way the conductor

shaped the sound. I will never forget it. From that day I knew I would be a conductor."

Young Riccardo started going to all the concerts he could and began listening avidly to some of his father's phonograph records at home: "I would follow the opera recordings with the librettos, and I would even go through the motions of conducting." By the age of twelve, he was also a fanatic record

*"My father took me with him to the RAI studios one morning to watch the orchestra rehearse. I will never forget it. From that day I knew I would be a conductor."*

collector on his own. He still is, with a collection of more than five thousand records and tapes.

As a teenager, Chailly studied piano and percussion—and got his first paying job in music as the drummer in a jazz and rock group in the lake region north of Milan for several summers. "We played a lot of Beatles songs and American music," he said, adding that he still likes jazz.

Meanwhile, he entered the Milan Conservatory to study conducting. He was only fourteen when the conductor Claudio Scimone, on the recommendation of one of Chailly's teachers, invited him to conduct the chamber group *Solisti Veneti* for a performance in Padua. From then on, there was no turning back. Eventually he spent three summers in Siena studying conducting with Franco Ferrari, who also taught Claudio Abbado, Daniel Barenboim, and Zubin Mehta. By nineteen, Chailly was an assistant to Abbado at La Scala, and he continues to look upon Abbado as a major mentor.

Opera would continue to dominate Chailly's career for most of his twenties—including stints in the U.S. with the Chicago Lyric Opera beginning in 1974, the San Francisco Opera in 1977, and New York's Metropolitan Opera in 1982. That same year he made such a successful debut with the Cleveland Orchestra that he was not only invited back for the next several seasons but also

made several widely praised recordings with the Clevelanders for London/Decca. As his guest conducting expanded to include the Los Angeles and New York Philharmonics, he began dividing his time more evenly between opera and the concert hall.

After accepting the post of principal conductor of the Berlin Radio Symphony in 1983 and of the Bologna Opera in 1986, however, Chailly cut back drastically on all guest conducting. He felt it was more important to concentrate on Berlin and Bologna, and on building his repertoire, than to jet everywhere with a few showpiece works as some of his colleagues were doing. He even completely eliminated any American engagements. "It isn't because I haven't been asked or because I don't like America," he stressed. "Quite the contrary. I miss America very much and have wonderful feelings about my time in Cleveland and New York. My wife, in particular, keeps telling me it's been much too long since we've been to America." (That situation should be remedied this September when Chailly is scheduled to lead the Royal Concertgebouw Orchestra on a three-week tour here.)

Is there any conflict between opera and symphony as a personal priority? "Less than there used to be. I did so much opera during the Seventies and early Eighties that I soon felt it was time to concentrate more on symphonic repertoire—especially the Romantic and late-Romantic music that has always fascinated me. Now I have achieved more of a balance and consider opera and symphony parallel loves. At the moment, I do only two new opera productions a year and one opera recording. I am recording much more orchestral repertoire."

**C**HAILLY is especially proud of his recent recording, for London/Decca, of Bruckner's Fourth Symphony with the Concertgebouw. "It's an important record for me as my first Bruckner symphony with this great Bruckner orchestra," he said. As it is, his earlier recordings of Bruckner's Third and Seventh with the Berlin Radio Symphony are among his most acclaimed.

Chailly is clearly still in awe of the sonic qualities of the Amsterdam orchestra and the world-famous hall that has been its home since its founding in 1888 (the Dutch word

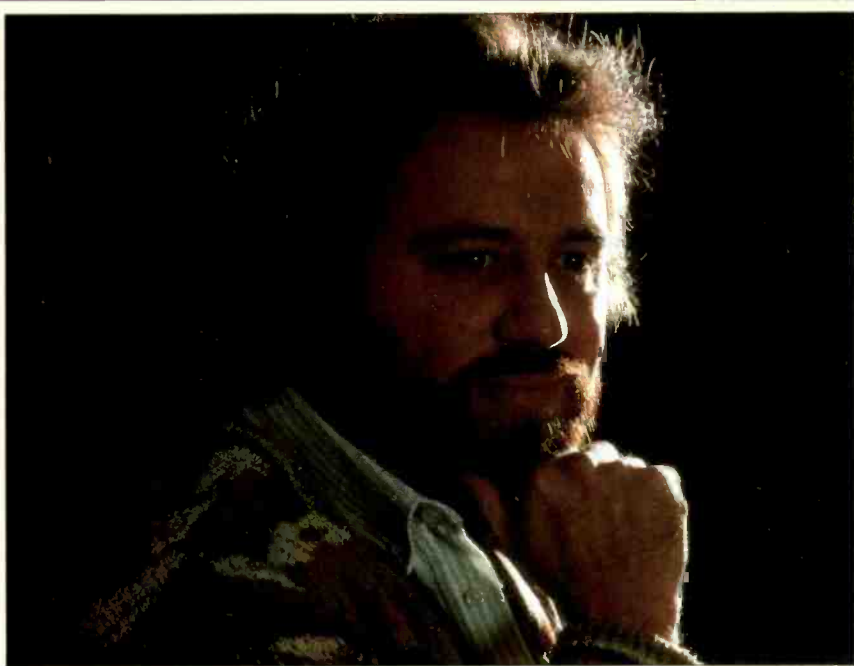
"concertgebouw" means concert hall). "They both have a unique sound," he said, "although I discovered a problem with the hall itself. When it's full, when the audience is there, the sound is marvelous. But for rehearsals, when the hall is empty, there is a big problem with balances. Not all the players can hear each other."

Chailly learned that Mengelberg had been so bothered by the same problem four or five decades ago that he had huge sound-reflecting panels constructed to separate the stage from the rest of the hall during his rehearsals. Chailly arranged for similar panels to be installed, and he is happy with the results. "But I must admit that sometimes for avant-garde music or very fast rhythmical music—such as Stravinsky—the hall is not as congenial as a drier acoustic would be." That's not a problem for recording sessions, Chailly noted: "We do not record on the stage but on a platform that's built over the parterre of the hall itself. The sound is then much more straightforward and easier to control."

Chailly insists that when he made his first appearance as a guest conductor with the Concertgebouw, in January 1985, he did not know that Haitink had given notice he was leaving. "I was completely unaware of what was going on with regard to a search for a new conductor," he said. "I conducted four different programs over a two-week period in 1985 and went on my way. About four months later, I began to hear rumors that I was being considered as one of the candidates for chief conductor. And then it became real."

When Chailly accepted the Amsterdam post, he retained his position with the Bologna Opera, and he let it be known that he would continue with the Berlin Radio Symphony through the end of his contract in 1990. "But when they decided on Vladimir Ashkenazy as their new conductor," Chailly explained, "I agreed to step down a year earlier so that he could start his active relationship with the orchestra sooner."

And Chailly will all the sooner be able to consolidate his own active relationship with his new orchestra. "For the next four years I'll be busy enough—and happily busy enough—with the Concertgebouw in Amsterdam." □



## CHAILLY ON COMPACT DISC: A SELECTIVE CHECKLIST

**Beethoven: Piano Concertos.** Alicia de Larrocha (piano); Berlin Radio Symphony. LONDON 414 391-2 three CD's.

**Brahms: Symphony No. 1, in C Minor; Academic Festival Overture.** Royal Concertgebouw Orchestra. LONDON 421 295-2.

**Bruckner: Symphony No. 3, in D Minor.** Berlin Radio Symphony. LONDON 417 093-2.

**Bruckner: Symphony No. 4, in E Minor ("Romantic").** Royal Concertgebouw Orchestra. LONDON 425 613-2 (rel. February 1990).

**Bruckner: Symphony No. 7, in E Major.** Berlin Radio Symphony. LONDON 414 290-2.

**Dvořák: Symphony No. 9, in E Minor ("From the New World"); Carnival Overture.** Royal Concertgebouw Orchestra. LONDON 421 016-2.

**Franck: Symphonic Variations; Symphony in D Minor.** Jorge Bolet (piano); Royal Concertgebouw Orchestra. LONDON 417 487-2.

**Gershwin: An American in Paris; Cuban Overture; Lullaby; Rhapsody in Blue.** Katia and Marielle Labèque (pianos); Cleveland Orchestra. LONDON 417 326-2.

**Giordano: Andrea Chenier.** Montserrat Caballé, Luciano Pavarotti, Leo Nucci; National Philharmonic Orchestra. LONDON 410 117-2 two CD's.

**Mahler: Symphony No. 10. Schoenberg: Transfigured Night.** Berlin Radio Symphony. LONDON 421 182-2 two CD's.

**Mendelssohn: Symphony No. 2, in B-flat Major ("Lobgesang").** Margaret Price, Siegfried Jerusalem; London Philharmonic Orchestra and Chorus. PHILIPS 416 470-2.

**Mussorgsky/Ravel: Pictures at an Exhibition. Ravel: Boléro. Debussy/Ravel: Sarabande; Danse.** Royal Concertgebouw Orchestra. LONDON 417 611-2.

**Prokofiev: Alexander Nevsky.** Irina Arkipova (mezzo-soprano); Cleveland Orchestra and Chorus. LONDON 410 164-2.

**Puccini: Manon Lescaut.** Kiri Te Kanawa, José Carreras; Orchestra del Teatro Comunale di Bologna. LONDON 421 426-2 two CD's.

**Rossini: Overtures, Vols. 1 and 2.** National Philharmonic. LONDON 400 049-2 and 414 407-2.

**Rossini: Il turco in Italia.** Samuel Ramey, Montserrat Caballé; National Philharmonic Orchestra. CBS M2K 37859 two CD's.

**Tchaikovsky: Manfred Symphony.** Concertgebouw Orchestra. LONDON 421 441-2.

**Tchaikovsky: Symphony No. 5, in E Minor.** Vienna Philharmonic. LONDON 410 232-2.

**Verdi: Macbeth.** Shirley Verrett, Veriano Luchetti; Orchestra del Teatro Comunale di Bologna. LONDON 417 525-2 two CD's.

**Zemlinsky: Symphony No. 2, in B-flat Major; Psalm 23.** Kammerchor Ernst Senff; Berlin Radio Symphony. LONDON 421 644-2.





## FINALLY, YOU DON'T NEED A DUAL INCOME TO AFFORD DUAL WOOFERS.

With the new Advent Heritage loudspeakers, not only do you get cabinets that are handcrafted with natural pecan wood, you also get digital-ready, dual-cone technology at an affordable price.

Two 8-inch, high-excursion woofers work in tandem to produce the low frequencies of a woofer much larger in size; but with much less effort and distortion. What you'll notice is bass that's deep, accurate and tight.

You should also notice our tweeter sits 34 inches above the floor. (The average height of a person's

ears as they relax to their favorite music.) This offers wider dispersion of high frequencies and makes the Advent Heritage less sensitive to room placement. Plus, these speakers have power handling capabilities of 600 watts peak, a feature you'd expect to find only on much higher priced systems.

So, get a pair of Advent Heritage loudspeakers. You won't spend a fortune. It will only sound like you did.

THE HERITAGE BY  
**ADVENT**®

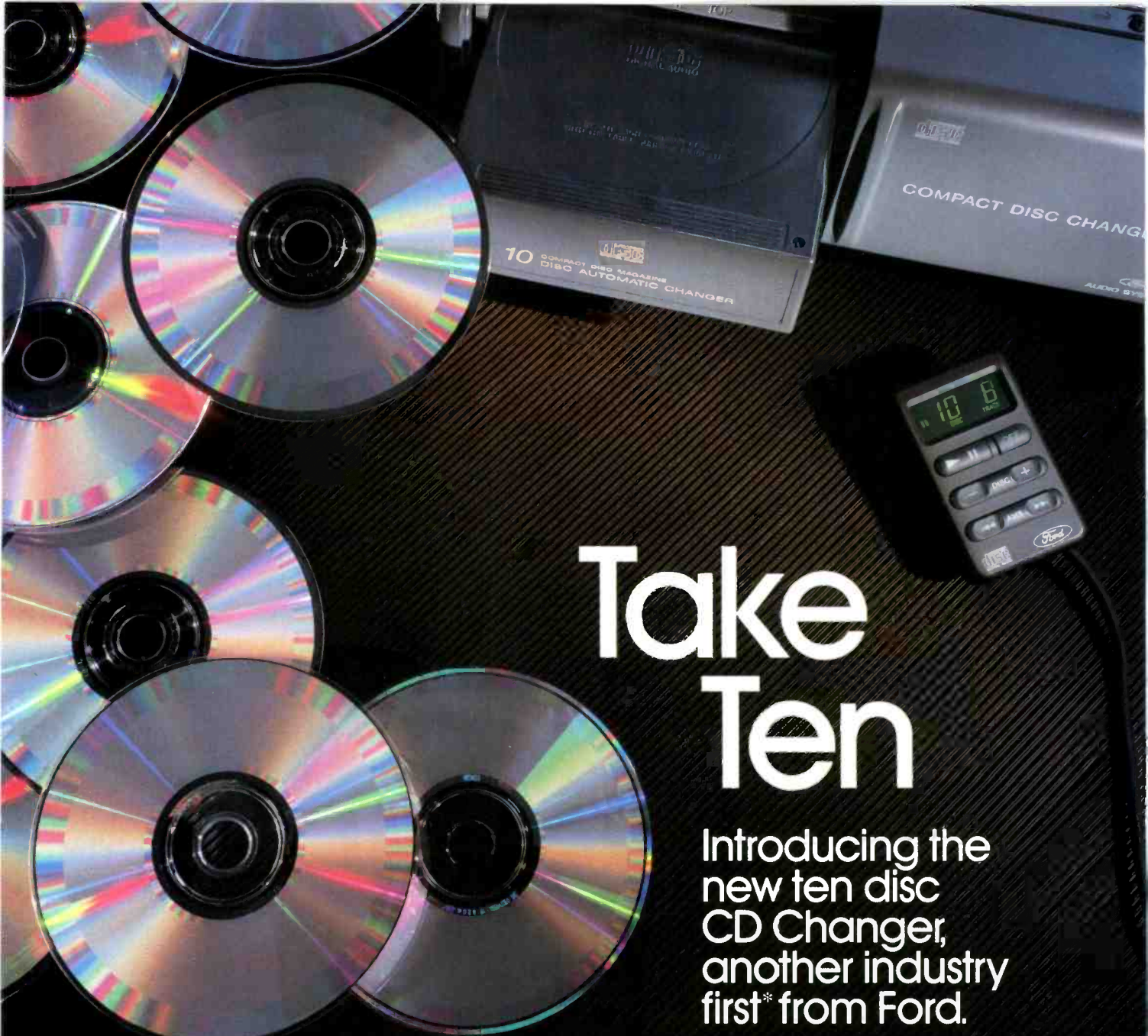
*Sound as it was meant to be heard.*

© 1989 International Jensen Inc.  
Advent is a registered trademark of International Jensen Inc.



CIRCLE NO. 30 ON READER SERVICE CARD





# Take Ten

Introducing the new ten disc CD Changer, another industry first\* from Ford.

Now you can enjoy hours of continuous music without having to load, unload, or store your compact discs while you drive.

This new state-of-the-art system uses interchangeable ten disc magazines in a changer unit that is stored safe and secure in the trunk of your car. And a full-function remote control allows the selection of any track on any disc

at the touch of a button.

The new ten disc CD Changer is compatible with any Ford, Mercury or Lincoln equipped with the optional Ford High Level Audio or Ford JBL Audio system. See your local Ford or Lincoln-Mercury dealer for details.

The new ten disc CD Changer from Ford. We're sure you'll rate it a "perfect 10."

\*First optional dealer-installed CD Changer available from a U.S. automobile manufacturer.



**AUDIO SYSTEMS**  
**The Sound of Quality**



# JAPAN

1989



## A U D I O F A I R



B  
Y  
B  
R  
Y  
A  
N  
H  
A  
R  
R  
E  
L  
L

TOKYO—If a visitor to the 1983 Japan Audio Fair were suddenly whisked forward in time six years to the 1989 fair, he would have a hard time recognizing it. It's not that the fair has changed much, despite the move from the huge Harumi exposition grounds on Tokyo Bay to the smaller Sunshine City convention complex across town. It's that the fair reflects the many changes the Japanese audio industry has gone through in this decade.

The advent of the CD has taken explanations for improvements in fidelity from the physical realm of motors and mechanisms to the mathematical realm of "encoding," "bit density," and "noise shaping." (*Shape noise? Why not just get rid of it!*) And in place of stack after stack of standard-size components in clear-cut categories, there were components in a wide range of colors, sizes, and configurations. It was clear from the 1989 fair that if Japanese audio today is perhaps not as exciting as in years past, it is certainly more diverse than ever.

Sponsored by the Japan Audio Society, the Japan Audio Fair is billed as the world's largest of its

kind. The 1989 event drew nearly 220,000 visitors, including consumers as well as industry and media people from around the world, during its October 4 to 8 run.

More than ever, the fair was dominated by new developments in digital audio. Most interesting in this area was Sony's prototype CD recorder/player, billed as "the ultimate recorder." A magneto-optical device, it records special discs magnetically and plays them back optically with a laser in the same way it plays normal CD's; discs recorded by the machine cannot be played back on an ordinary CD player, however. It looked more like a finished product than a prototype, though it may be well into the Nineties before Sony, or anyone else, puts a deck like this on the market.

### *Bit Wars and MASH*

After 18-bit, 20-bit, and even "45-bit" operation, we're on to 1-bit now. A high-profile example is Matsushita's new MASH-PWM technology. MASH is the unlikely acronym for a new multistage noise-shaping technology for digital-to-analog (D/A) conversion. MASH



was present in the prototype SV-DA10 DAT deck and in a small variety of new products, from the low-price Panasonic SL-PS30 CD player with remote control (¥21,000, or about \$145 at 144 yen to the dollar) to the Technics SL-Z1000 CD player and matching outboard SH-X1000 digital processor (¥400,000, or about \$2,800, each) and even the Technics SV-MD33 DAT portable (¥334,000, or \$2,320), which has balanced input terminals with Cannon connectors. The handsomely styled prototype Panasonic SL-PA10 CD player, however, did not feature MASH as it has no D/A converter, being designed for connection to a "digital" amplifier such as the matching Panasonic SU-MA10 (¥107,000, or \$745), an integrated amp with an internal "MASH 1-bit" D/A converter. It appears that Matsushita intends to put MASH in all its products in the coming years.

**S**ONY also introduced 1-bit D/A conversion technology in the form of its High Density Linear Converter System, which contains what it calls a "pulse D/A converter." Several high-end CD components using this system were displayed, among them the DAS-R1a D/A converter (¥400,000, or \$2,800) and its companion CDP-R1a CD player (¥300,000, or \$2,085), the CDP-R3 CD player (¥300,000), and the CDP-X77ES player (¥180,000, or \$1,250).

### Digital Audio Tape

Drawing strong interest in the DAT category was the new Aiwa HD-X1 portable deck (¥77,000, or \$535), announced earlier in the year. To record analog signals, the HDA-1 analog-to-digital converter (¥22,000, or \$153) is necessary. The HDV-1 video adaptor (¥53,000, or \$368) can be connected to enable the recording of up to 3,600 video stills along with a digital audio soundtrack on a 120-minute DAT cassette. Slightly larger were Hitachi's new DAT-88 portable and JVC's DIN-size KS-D1 car DAT player (¥168,400, or \$1,167), with a large display and direct keypad track selection.

Sony, however, showed the most strength in this area with its impressive collection of professional DAT equipment. The exhibit featured a large table of Sony DAT products, including the TCD-D10, PCM-2000, and PCM-2500 decks.



Among the more striking exhibits at the fair were Matsushita's booth guarded by a mechanical dinosaur; Alpine's New Concept Car with a prototype sound system; and the Bose booth, demonstrating the U.S. firm's strong presence in the Japanese market.



The JVC XD-Z909 was among several prototype DAT decks shown by various manufacturers with SCMS (Serial Copy Management System) circuitry. JVC also showed its XD-Z700 DAT deck (¥128,000, or \$889), with remote control and a "high precision fine tracking mechanism" said to stabilize the signal during recording and playback. Onkyo displayed its prototype DT-1001 DAT deck, while Kenwood's DAT-LZ12 prototype featured four heads to enable monitoring while recording. Denon's GTR-CX prototype featured "ladder form multiple bias D/A lambda" circuitry.

### CD Players

Starting with the small, Sony's new D-350 Discman has a ten-key pad on top of the unit, a large display, and eight-times oversampling. New Yamaha CD players were the CDX-1030 (¥89,800, or \$624), and the CDX-930 (¥69,800, or \$485), both with four three-stage noise-shaping 1-bit D/A converters. Yamaha also displayed the CDX-100 player (¥49,800, or \$346), with eight-times-oversampling digital filters and 18-bit D/A converters.

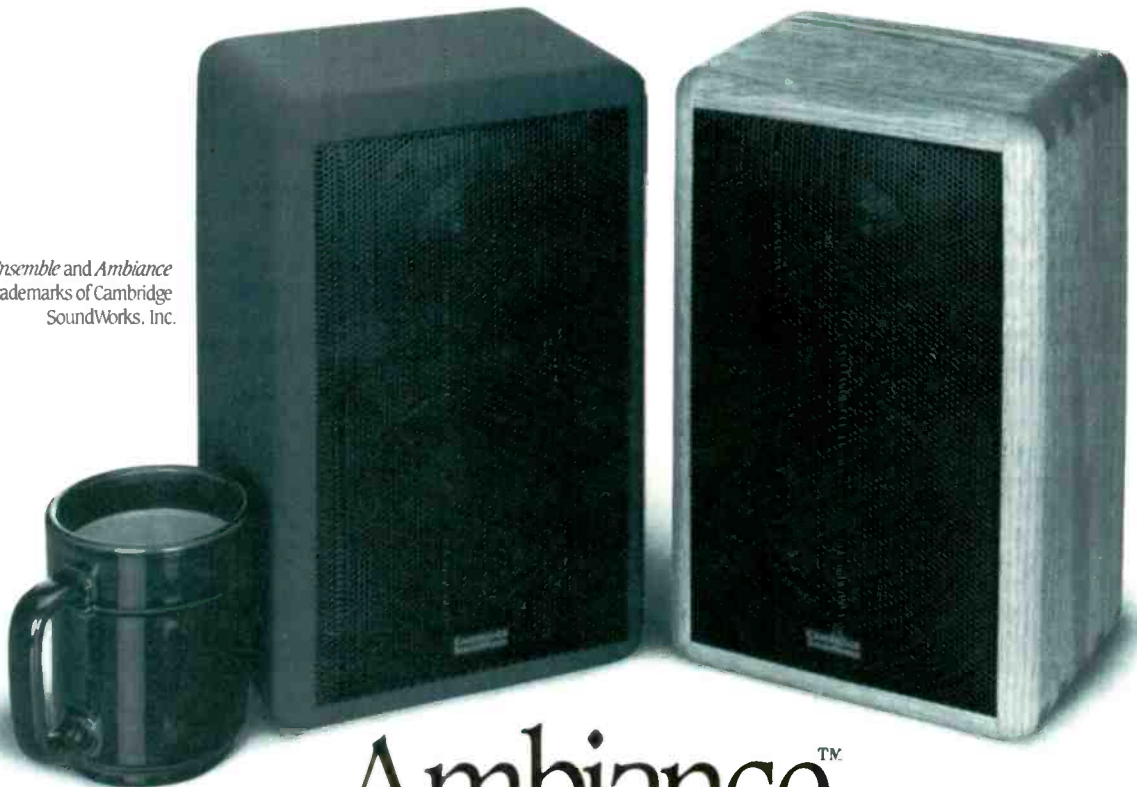
Teac's new CD-player separates, the D/A converter unit and the CD drive unit, are all half the width of standard components, so conceivably a pair could come together as "one" in an audio rack. Shown were the D-500 D/A converter (¥100,000, or \$694) and the P-500 CD drive unit (¥80,000, or \$556); also available on special order were the D-2 D/A converter and P-2 CD drive unit (¥400,000, or about \$2,800, each). Along similar lines, JVC offered the XP-DA1000 D/A converter unit (¥450,000, or \$3,125).

**K**ENWOOD showed CD players with its new DPAC (digital pulse axis control) circuitry, which is said to reduce jitter: the DP-8020 (¥80,000, or \$556), the DP-7020 (¥55,000, or \$382), the DP-6020 (¥45,000, or \$313), and the DP-5020 (¥35,000, or \$243). Its new DP-X9010 (¥73,200, or \$508) is a CD playback drive unit designed for connection to the company's DA-9010 integrated amplifier (¥91,100, or \$633), which has an internal D/A converter.

Pioneer introduced seven new CD players, among them the massive 33½-pound PD-5000 (¥200,000, or \$1,389), with a claimed track-access time of 0.5 second or less, and two



<sup>TM</sup>Ensemble and Ambiance  
are trademarks of Cambridge  
SoundWorks, Inc.



# Ambiance<sup>TM</sup> by Henry Kloss

An ultra-compact speaker that proves high performance, small size and low cost need not be mutually exclusive.

*Ambiance* by Henry Kloss outperforms many, if not most, speakers of its compact dimensions, and is outperformed by none. We think you'll find it an ideal speaker for use in many circumstances, and it is perfect as an extension speaker, in surround-sound systems, and for situations where space is at a premium.



Henry Kloss, creator of the dominant speaker models of the '50s (*Acoustic Research*), '60s (*KLH*), and '70s (*Advent*), brings you Cambridge SoundWorks, a genuinely new kind of speaker company for the '90s.

## Proper engineering vs. over-engineering.

*Ambiance* provides a level of performance that makes it comparable to the costliest

small systems, which can be costly indeed. So-called "mini" speakers have developed a kind of jewel-like cachet, whereby the higher the price per cubic inch, the higher the performance is assumed to be. That this is not so with the application of proper engineering, as opposed to over-engineering, is amply demonstrated by *Ambiance*. *Ambiance* is a two-way acoustic suspension system designed to the same high standards as our *Ensemble*<sup>TM</sup> system, with much the same seamless, well-balanced response. Unlike most speakers of its size, *Ambiance's* response in the 100 Hz region has not been exaggerated at the expense of bass lower down. It has more output in the 40 Hz region than any speaker its size we've encountered. While *no* speaker of *Ambiance's* size can provide the same very low bass and total volume as our *Ensemble* system, it does provide ample weight on the vast majority of recordings. And its high-frequency dispersion permits placing it in a location that acoustically supports low bass (such as on the floor against a wall), without sacrificing treble response.

*Ambiance* can accept more power than most systems its size, and can be used with just about any amplifier designed for home use. While efficiency is moderately low to maximize low frequency performance *Ambiance* can be comfortably powered in many applications by low-cost receivers and amplifiers (a minimum of 15 watts/ch. is recommended). *Ambiance* is available in three finishes: gun-metal gray Nextel (a durable, suede-like finish), primed so that you can paint them, and in solid oak.

## Try Ambiance in your home risk-free for 30 days.

*Ambiance* is available *only* directly from the Cambridge SoundWorks factory, a method of distribution reflected in its unusually low cost (we believe *Ambiance* competes *directly* with "mini" speakers retailing for hundreds of dollars more). *Ambiance* is only \$109 per speaker in Nextel or primed for painting; \$129 in solid oak (shipping extra), and comes with a 30-day money-back guarantee. For literature, expert advice, or to order call 1-800-AKA-HIFI Mon-Sat 9AM-10PM, Sun 9AM-6PM (ET). Canada 1-800-525-4434 Fax: 617-332-9229.

### CAMBRIDGE SOUNDWORKS

Suite 102J 154 California Street, Newton, MA 02158

- Send me more information on *Ambiance*.
- Send me \_\_\_\_\_ (qty.) *Ambiance* spkrs. (Nextel) for \$109 each.\*
- Send me \_\_\_\_\_ (qty.) *Ambiance* spkrs. (Primed) for \$109 each.\*
- Send me \_\_\_\_\_ (qty.) *Ambiance* spkrs. (Oak) for \$129 each.\*

I'm paying by  Check  MC  VISA  AmEx

Acct. Number \_\_\_\_\_ Exp. \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone (Area Code) \_\_\_\_\_ Number \_\_\_\_\_

FOR IMMEDIATE SERVICE: 1-800-AKA-HIFI

We ship worldwide, including APO & FPO.

MA residents add 5% sales tax.

\*Plus freight (\$2-\$12). Delivery time is usually 2-7 days.

dual-tray models, the PD-434 Twin (¥42,800, or \$297) and PD-333 Twin (¥37,800, or \$263), which apparently allow programmed playback from two discs and the convenience of being able to listen to one disc while you are loading another.

Aiwa's new CD players, the XC-717 and XC-515 (no prices yet), feature what the company calls the Pure-C circuit, said to compensate for errors that can result in reading short, shallow pits on a CD. Both are designed for synchro-dubbing with Aiwa's new XK-W828 double cassette deck (¥49,800, or \$346), which has optical quick reverse and recording in both transports. JVC showed a new low-price CD player, the XL-V231 (¥29,800, or \$207), with a motor-driven volume knob adjustable by remote control.

**T**WO of Denon's new CD players, the DCD-1630 (¥79,800, or \$554) and the DCD-1530 (¥59,800, or \$415), featured the company's "real 20-bit" digital filter and "lambda super linear converter" system. Denon also showed the prototype LA-500CX combi-player with five-format capability and jog/shuttle cueing control.

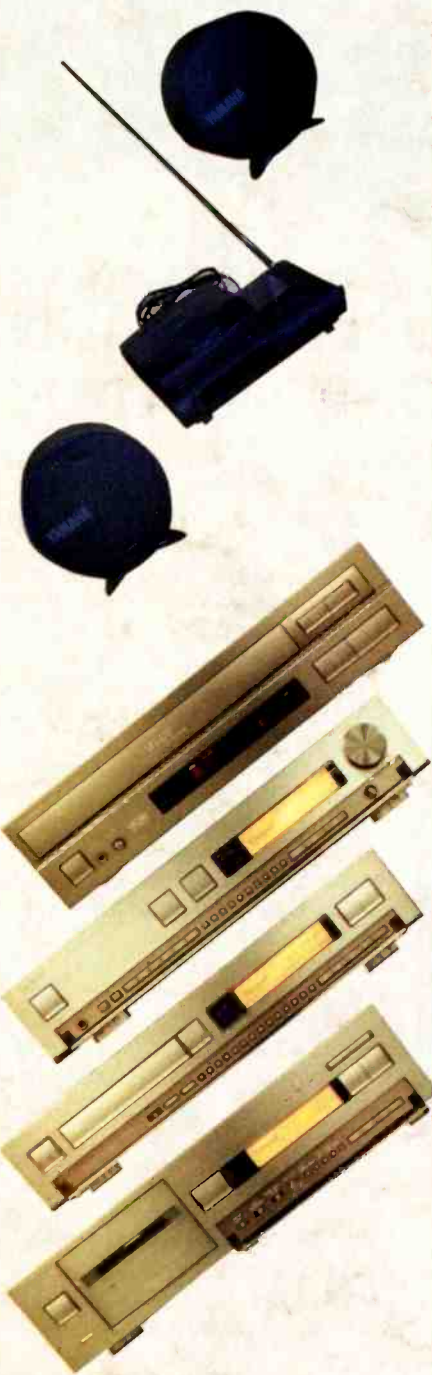
### All Shapes and Sizes

Most noticeable at the fair was the diversity of audio system configurations. There were, for example, some very small "desktop systems," sort of like boomboxes without the box. An attractive execution of this idea was the Yamaha AST-7 Tiffany system (¥49,000, or \$340), which includes a book-size receiver (no output figures given), a twenty-one-mode remote controller the size of a playing card and only 4 millimeters thick, and two round-enclosure speakers with what Yamaha calls Active Servo Technology, which is said to produce stronger, deeper bass (in the U.S., "AST" becomes "YST" for legal reasons).

Moving up on the size scale, there's a new generation of rack systems measuring approximately the width of two cassette wells. The smallest may be the Sony Pixy Personal Component systems, just under 9 inches wide. Finished in matte gray, the Pixy MHC-P77 (¥110,000, or \$764) includes a CD player, a tuner/timer, an integrated amp, a double cassette deck, a remote controller, and a pair of two-way bookshelf speakers. The optional SDP-P77 digital surround processor (¥44,800,



Yamaha's desktop Tiffany AST-7 system included a receiver and two round speakers, shown below with the new CDX-P7 portable CD player. At bottom are the handsome full-size components in Onkyo's new Liverpool series, to be available this spring.



or \$311) has ten presets and Dolby Surround circuitry.

Aiwa's new 11½-inch-wide NST-160 (¥99,800, or \$693), in a textured gray finish, features the company's new Super Turbosonic speaker system, which is said to extend and strengthen bass response by electronically including the speaker within the amplifier's feedback loop. The system also features processing circuitry developed by BBE Sound of the U.S., which is said to offer higher sound definition in the middle and high frequencies.

On the high-end side, Marantz displayed a series of very simply designed, crisply finished 9¾-inch-wide components, including the prototype PH-1 phono-equalizer amp and the DMA-1 mono power amp (¥125,000, or \$868, each), the DAC-1 control amp (¥146,000, or \$1,014), and the DPS-1 digital power supply (¥68,000, or \$472), which has been designed to shut out AC line noise.

Luxman showed a new series of midi components (14 inches wide) with an interesting warm gray-brown finish. The series is called AL Compo and includes the A-007a integrated amp (¥69,000, or \$479), D-007a CD player (¥43,000, or \$299), K-007a double cassette deck (¥59,000, or \$410) with autoreverse, the T-007a AM/FM/TV-sound tuner (¥37,000, or \$257), G-007 digital delay unit (¥59,300, or \$412) with surround sound and seven-band graphic equalizer, P-007 turntable (¥26,500, or \$184), V-007 combi-player (¥110,900, or \$770), and TS-007 satellite broadcast tuner (¥56,300, or \$391).

**I**N full-size system components, Onkyo's new Liverpool series, to be introduced this spring, was one of the most attractive shown at the fair. All the components featured sparsely designed front panels attractively finished in titanium color with gold trim. They included the R-200 receiver (¥68,800, or \$478), the C-200 compact disc player (¥55,000, or \$382), the ML-500 combi-player (¥139,000, or \$965), and the K-200R cassette deck (¥69,000, or \$479).

### Electronics

The recent trend toward including video equipment in high-fidelity audio systems has triggered an avalanche of sound-processing systems, typically for surround sound. Drawing the most attention in this area





# IT'S INCREDIBLE WHAT GOES INTO MAKING A LAMBORGHINI.

The Lamborghini Countach is a rolling monument to the extremes of engineering.

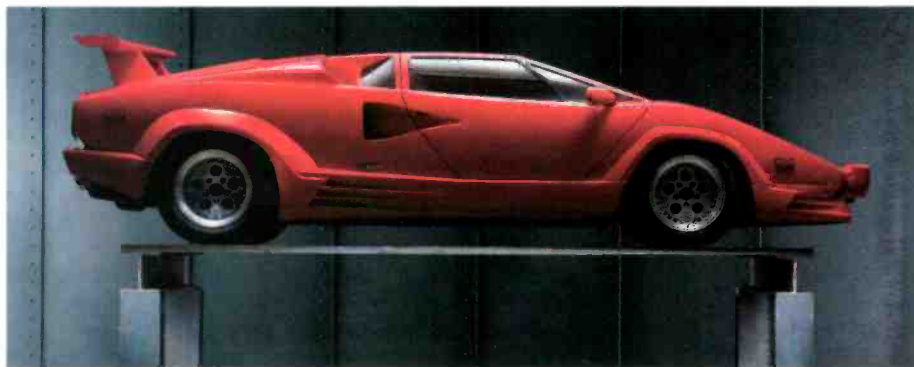
Which is why, inside every new Lamborghini, you'll find an Alpine CD player or cassette deck, an Alpine power amplifier, and Alpine speakers.

It's a music system capable of propelling you to the very limits of performance

with sound that's pure, powerful and intensely "live."

Of course, you don't need to buy a Lamborghini to own an Alpine system. You don't even need an unrestricted credit card limit.

You have only to love high performance and see your Alpine dealer.



For a poster of the 1989 Lamborghini, take this ad and \$2.00 to your Alpine dealer. © 1989 Alpine Electronics of America, Inc., parent corporation of Alpine mobile electronics and Luxman home audio products. 1-800-ALPINE-1

**ALPINE**  
CAR AUDIO SYSTEMS  
CIRCLE NO. 9 ON READER SERVICE CARD

was the release of the Panasonic Home THX sound system, based on Dolby Pro Logic and the Lucasfilm THX system used in theaters. Sold as a package for ¥1.6 million (\$11,111), the system includes a THX Control Center component with remote control, three 100-watt-per-channel stereo power amplifiers, three front speakers, a subwoofer, and two special rear-mount surround speakers. The system was demonstrated with some "geewhiz" film clips from Lucasfilm.

Dolby Pro Logic alone was the choice of several other manufacturers. Kenwood introduced the new KA-V6000 (¥85,000, or \$590), and KA-V4000 (¥65,000, or \$451) audio/video integrated amplifiers with Dolby Pro Logic Surround and full-function "learning" remote controllers. The prototype Denon AVC-3000C audio/video integrated amplifier also featured Dolby Pro Logic Surround, as did the Pioneer SP-7000 digital sound-field processor (¥89,800, or \$624). Pioneer also showed another model, the SP-91D (¥120,000, or \$833), with a "high-performance 50-bit DSP" (digital signal processing) circuit, along with three new audio/video amplifiers, the VSA-930 (¥108,000, or \$750), the VSA-730 (¥79,800, or \$554), and the VSA-530 (¥53,800, or \$374), all of which have multifunction "learning" remote controllers.

**O**UT of the Dolby Pro Logic camp was Yamaha, which displayed its new DSP-107AST digital sound-field processor (¥139,800, or \$971), whose remote controller has more buttons than can be easily counted (some thirty-five of them are said to be "learning keys"). The same DSP technology is incorporated into the new AVX-100AST audio/video integrated amplifier (¥84,800, or \$589), which is rated at 100 watts per main channel and 20 watts for each of three effects channels, all into 6 ohms (EIAJ).

In the basic electronics category, Denon showed the prototype PRA-2000X preamp and its companion POA-3000X power amp with the company's new "MOS-Super Optical A" circuit and BTL balanced inputs. Also on display was Denon's new PMA-8900 integrated amp with built-in "Super Linear" D/A converters, priced at ¥84,800 (\$589); a cosmetically tweaked gold version (PMA-890G) is also available (¥93,800 or \$651).

The Accuphase exhibit highlighted the new P-11 power amplifier (¥230,000, or \$1,597) and matching C-11 preamp (¥220,000, or \$1,528), the DP-11 CD player (¥270,000, or \$1,875), and the T-11 FM tuner (¥120,000, or \$833), all controlled by the immense RC-6 Remote Commander.

The eye-catcher in the Onkyo booth was the new M-510 Grand Integra power amplifier (¥760,000, or \$5,278), with what may be the most massive power meters in the business. Also in the "big is beautiful" category were the Sony TA-NR1 mono power amplifier (¥500,000, or \$3,472), rated at 100 watts into 8 ohms from 20 to 20,000 Hz, and a very impressive-looking pair of Mitsubishi separates: the enormous, 76-pound DA-A9500 power amplifier (¥747,000, or \$5,188), with internal D/A converter and 240 watts per channel, and the DA-P9500 control amplifier, with a rather formidable "intelligent communicator" remote-control panel replete with buttons, a dial, and a large display.

### Speakers

Loudspeakers have traditionally been the area of least strength for the Japanese, though some manufacturers are working to improve their success through the development of new diaphragm materials, outboard processing systems, and port configurations. Or just plain good looks, as many new models are far more attractive than their predecessors. Examples include Onkyo's beautifully finished Scepter 3001 (¥280,000, or \$1,944, a pair) and Q1 (¥35,000, or \$243, a pair), both of which featured round tweeter enclosures mounted on top of the speaker cabinets. There was a gorgeous, deep-lacquer finish on the prototype Technics RX-100 speaker with a "super graphite" flat diaphragm, and Mitsubishi, a favorite of high-end enthusiasts in Japan, showed off its Diatone DS-V5000, a four-way acoustic-suspension system (¥550,000, or \$3,819), and the 2S-3003, a two-way bass-reflex speaker (no price given). Both models feature 12½-inch woofers and are available only by special order.

Perhaps the most interesting-looking Japanese speakers are offered by Sasaki, whose "Clearball" speakers have spherical crystal enclosures. Prices ranged up to ¥460,000 (\$3,194) a pair.

In the realm of outboard speaker processing, Yamaha demonstrated a strong presence. The latest in its Active Servo Technology speakers included the new two-way AST-S10 (¥65,000, or \$451), the three-way, five-driver AST-F100 (¥65,000), and the three-way, four-driver AST-T100 (¥160,000, or \$1,111). All require an add-on processing unit such as the new AST-A5 Active Servo Processing Amplifier (¥30,000, or \$208), which is rated at 80 watts per channel into 6 ohms (EIAJ). Also shown was the AST-SW100 Active Servo Processing Super Woofer (¥59,000, or \$410), which has a built-in 80-watt amplifier.

### Analog Cassette Decks

Almost all manufacturers seemed half-hearted in the category of analog tape decks, with practically no new models priced over ¥90,000 (\$625). In Japan, DAT deck sales have yet to register more than a blip, so it seems that the *anticipation* of DAT's popularity has kept interest away from analog machines. Kenwood showed a line of cassette decks led by the three-head KX-9010 (¥69,400, or \$482), with an automatic tape-calibration system and remote control. The new Yamaha KX-R100 (¥69,800, or \$485), a two-head deck with Dolby HX Pro, boasted a twelve-layer laminated amorphous head said to offer superior high-frequency response. JVC offered two new "independent three-head" decks, the TD-V931 (¥87,000, or \$604) and the TD-V731 (¥69,800, or \$485). Denon showed its new DRR-60 auto-reverse deck (¥49,800, or \$346) and the gold-colored DR-70G, a three-head deck with remote control (¥69,800). Mitsubishi displayed several of its new A & D brand decks, including the three-head GX-Z9100EX (¥110,000, or \$764) and GX-Z6100 (¥69,800), while Technics offered the RS-B755 (¥49,800, or \$346), a three-head deck with remote control.

**M**ORE than anything else I saw, the biggest testimony to the diversity of the 1989 Japan Audio Fair was the new Micro-Seiki APM-2 turntable (¥220,000, or \$1,528) and MA-125 static-balanced tonearm, demonstrated to a room full of hushed audio enthusiasts. Even "old" technology, it seemed to say, can be captivating when it's beautifully executed. □



MIRAGE M-1.  
RAVES FROM  
THE CRITICS.

WE'RE HAPPY TO  
REPORT IT RUNS  
IN THE FAMILY.



The Mirage M-1s have garnered their fair share of raves from the industry. They've invoked such comments as "...I'm completely bonkers over this product..." and "...The M-1 is and will be for many people their absolute reference."

Upon first listen, most people are astonished by their sonic transparency. The speakers virtually seem to disappear. In our view, that's the mark of a good loudspeaker.

We've extended that philosophy to the Mirage 60-Series loudspeakers as well. Each reflects an overall concern for naturalness, genuine musicality and transparency.

Like the M-1s, they're designed for optimum dispersion. The perceived sound stage is dramatically extended without compromising center imaging. The specially-designed woofers reproduce low frequencies with undaunted accuracy.

The mark that Mirage has made on the audiophile world is substantial. From the flagship M-1s to the wide range offered by the Mirage 60-Series, you simply can't do better.

Just give them a listen. You'll hear what we mean.

*For a free booklet of M-1 reviews from seven leading audio publications, write us or see your Mirage dealer.*

**mirage**

AUDIO PRODUCTS INTERNATIONAL CORP.  
3641 McNicoll Ave. Scarborough, Ontario, Canada M1X 1G5 (416) 321-1800  
CIRCLE NO. 32 ON READER SERVICE CARD



They said it was impossible to build an AM/FM multi-play CD controller and cassette deck with a detachable face.



## But Pioneer pulled it off. Introducing the Premier™ KEX-M800.

What's in a name? Everything if it's the new Premier™ KEX-M800.

The world's first car stereo that not only offers you a combination multi-play compact disc player, AM/FM tuner, and cassette deck. It also features an anti-theft detachable face plate to help keep your system safe from prying eyes.

The only thing more exclusive than the KEX-M800 is our dealer network. Premier Installation Specialists are expert craftsmen, so you know your system will be custom installed with the utmost care.

So see your Pioneer Premier dealer. And watch us pull off the impossible.

For your nearest dealer call 1-800-421-1404.

**PREMIER™**

Premier™ Advanced technology from Pioneer. ©1989 Pioneer Electronics (USA) Inc., Long Beach, CA

CIRCLE NO. 31 ON READER SERVICE CARD



*Stereo Review's critics choose the outstanding current releases*

## JANET JACKSON'S "RHYTHM NATION 1814"

**T**HREE years ago, with the release of her album "Control," Janet Jackson gave notice that she was far more than simply Michael Jackson's cute little sister. The propulsive dance tunes and sensual ballads of "Control" established Jackson as a mature and assertive artist who was willing to bend conventional forms to suit her personality. Her new album, "Janet Jackson's Rhythm Nation 1814," represents an even bolder move in that direction.

Working again with producers Jimmy Jam Harris and Terry Lewis, Jackson has fashioned a concept album that addresses such social concerns as racial prejudice, crime, and homelessness through the medium of popular dance music. The effort succeeds because the songs avoid self-conscious, heavyhanded preaching and leave room for Jackson's excursions into playfulness and intimacy. Concept aside, the record succeeds because it offers modern techno-pop music of high quality.

Harris and Lewis are wizards at creating electronic drummers that come across as many-handed monsters of energy, and the set blasts off with an overwhelming burst of rhythmic power. But the technology is employed with extraordinary imagination, consistently serving the music. The songs Jackson sings are immediately captivating and would stand up well even without the gimmickry, but the special effects heighten their drama. The music is still effective when the approach is more subdued, as in the poignant *Livin' in a World (They Didn't Make)*, which addresses the plight of children who are born into a society where adults break all the rules but expect the young to know

the difference between right and wrong.

Though Harris and Lewis exert a strong influence, the magic is supplied by Jackson herself, whose voice and personality dominate the proceedings. She also played a prominent role behind the scenes, participating in the production and writing or co-writing half the material, including two of the very best songs, the bounding, sassy *Escapade* and the rakish, strutting *Black Cat*, which is underscored by biting blues licks and a driving beat. Her sensuality shimmers in the lovely, engaging *Back to Me*, a ballad that segues into the equally romantic *Someday Is Tonight*, both by Jackson and her co-producers.

While the reference to 1814 in the title is unexplained, "Rhythm Nation" is a tour de force that should insure Janet Jackson a leading position among today's popular artists. She comes across as a musical dynamo who not only knows what she wants to say but delivers her messages with a mighty wallop.

*Phyl Garland*

**JANET JACKSON:** *Janet Jackson's Rhythm Nation 1814.* Janet Jackson (vocals); vocal and instrumental accompaniment. *Interlude—Pledge; Rhythm Nation; State of the World; The Knowledge; Miss You Much; Love Will Never Do (Without You); Livin' in a World*

*(They Didn't Make); Alright; Escapade; Black Cat; Lonely; Come Back to Me; Someday Is Tonight; Interlude—Livin' . . . In Complete Darkness.* A&M SP-3920, © CS-3920. © CD-3920 (61 min).

## KARAJAN'S DRAMATIC BRUCKNER

**T**HE monumental Eighth Symphony was the first Bruckner work recorded by the late Herbert von Karajan, in 1958 with the Berlin Philharmonic for EMI. The Bruckner Eighth was also one of the conductor's last recordings, made in November 1988 with the Vienna Philharmonic and now released by Deutsche Grammophon. In between came a memorable complete series of the Bruckner symphonies that Karajan recorded in Berlin for DG: the Ninth in 1968, the Eighth in 1976, and the rest between 1976 and 1982. All of these later Berlin recordings have been acclaimed as masterly, displaying an unerring command of musical architecture and dramatic tension, and all are available on CD.

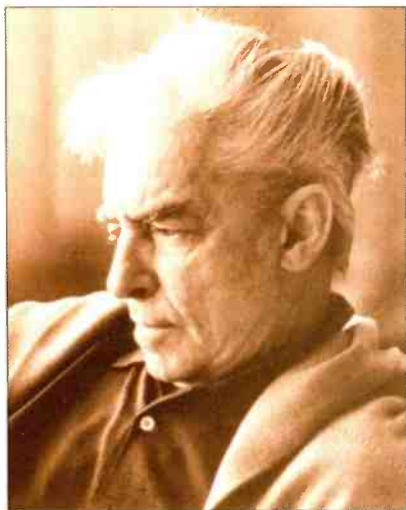
The Vienna performance of the



EDDIE WOLF/A&M RECORDS

## BEST RECORDINGS OF THE MONTH

Eighth was recorded as part of a Karajan series slated for European television. His reading differs little from the craggy and awesome 1976 version. There is more intensity in the climactic episodes than before, but this may be a factor of the recording itself, which makes an even more powerful impact than the earlier one at the bass end of the spectrum. In either version (both of which use the Haas edition, by the way), Karajan's interpretation of



Karajan: powerful Bruckner

the symphony has unsurpassed drama and scope, essential requirements in this work. My only reservation has to do with a desire for more of a windswept quality in the scherzo, where I find both of these readings a shade stolid.

Among digitally recorded Bruckner Eighths, the major rivals to the new Karajan version are those by Bernard Haitink with the Royal Concertgebouw Orchestra on Philips and Carlo Maria Giulini with the Vienna Philharmonic, also on Deutsche Grammophon. Both are less highly charged but certainly convincing on their own terms. For this work, I prefer the Vienna sound to that of the Concertgebouw, especially as captured in this powerful new recording. *David Hall*

**BRUCKNER: *Symphony No. 8, in C Minor*.** Vienna Philharmonic Orchestra. Herbert von Karajan cond. DEUTSCHE GRAMMOPHON © 427 611-2 two CD's (83 min).

## ALL-OUT COUNTRY FROM RODNEY CROWELL

WITH his 1988 breakthrough album, "Diamonds and Dirt," the multitalented Rodney Crowell became the first entertainer in the history of country music to score four consecutive No. 1 *Billboard* singles written, produced, and performed by the same person, all drawn from the same album. Such mainstream performing success was a long time coming for Crowell ("Diamonds and Dirt" was his fifth album release), even though he had been one of the most respected songwriters and producers in the business for at least a decade. This past October, he garnered four nominations in the 1989 Country Music Association awards.

In the follow-up album "Keys to the Highway," again co-produced with Tony Brown, Crowell wisely repeats the all-out country approach that propelled "Diamonds and Dirt" while still demonstrating his ability to write intelligently, effectively, and evocatively in a number of country subgenres and offshoots. As usual, he excels in two particular areas, original rockabilly and heart-wrenching ballads.

Both styles suit the album's conceit—the events that collide and provide keys to the highway of life—as they each leave room for bold, expressive statements of Crowell's reflections on new beginnings, relationships, death, and the healing power of love and self-acceptance. Crowell, whose recent records indicate a maturing and more sharply focused self-image, has never been stronger than in *Things I Wish I'd Said*, one of two songs that address the recent death of his father and the bond that holds them still. As comforting a song about death as has ever been written, it is in essence a love song. The album is dedicated to the memory of the elder Crowell.

Crowell's long suits have always been the descriptive narrative and

the ability to capture complex emotion in simple language. But he also reveals a new facility with sexual urgency in the steamy roadhouse blues *We Gotta Go On Meeting Like This*, an almost comical ode to lust written with his cousin, Larry Willoughby: "They call me dirty, they call you trash/Tween you and me, that's what brings me back," he offers, in uncommonly honest country writing.

Backed by the Dixie Pearls, a hand-picked group of rock-oriented studio musicians he has favored for years, Crowell continues to insist on eloquent, no-nonsense playing and on stretching his limits as an expressive, emotive vocalist. He is reminiscent here, in the best sense, of the young Don Everly.

"Keys to the Highway" may demand more of the listener than "Diamonds and Dirt," since few of the songs are as immediately accessible. It's worth the effort, though. If anyone else is writing mainstream country music with half the heart, head, and soul as Rodney Crowell, he has yet to come forward.

*Alanna Nash*

**RODNEY CROWELL: *Keys to the Highway*.** Rodney Crowell (vocals, acoustic guitar); the Dixie Pearls (instrumentals); Rosanne Cash, Vince Gill (background vocals); vocal and instrumental accompaniment. *My Past Is Present; If Looks Could Kill; Soul Searchin'; Many a Long & Lonesome Highway; We Gotta Go On Meeting Like This; The Faith Is Mine; Tell Me*

Crowell: stretching the limits





# The first CD changer worth listening to for 10 hours straight.



There are surprisingly few activities the human body can endure for 10 hours straight.

Listening to the CD player you see before you, the CDC-610U, is a delightful exception to the norm.

The first 10-disc CD changer capable of capturing both the attention and the imagination of even the most demanding audiophiles.

For hours on end.

Boasting specs and features that are nothing less than sensational.

Like Yamaha's Hi-Bit Technology with advanced 18-bit 4x oversampling digital filters and high-speed D/A conversion.

Direct Track Access,



A sound reason to start collecting magazines — Yamaha's 10-disc magazine, YCM-10 — the handy way to organize your CD collection.

which lets you enjoy virtually instant access to any track on any disc.

Random Programming, which permits programming of an entire evening of music — up to 36 selections — in any order you like.

"Plus One" Memory — a unique little feature that allows you to momentarily interrupt your program to hear another selection.

And as you might expect, quite a bit more.

Stop by your nearest Yamaha Audio Specialist and experience the impressive CDC-610U for yourself.

But be forewarned.

One listen and you could be hearing about it for a long, long time.



Arguably the simplest, most versatile remote control to ever accompany a CD player.

# YAMAHA®

## BEST RECORDINGS OF THE MONTH

*the Truth; Don't Let Your Feet Slow You Down; Now That We're Alone; Things I Wish I'd Said; I Guess We've Been Together for Too Long; You Been on My Mind.* COLUMBIA FC 45242, © FCT 45242. © CK 45242 (41 min).

### PINNOCK LEADS PURCELL'S "DIDO AND AENEAS"

**I**N the summer of 1988 Trevor Pinnock conducted his original-instruments ensemble, the English Concert, with its choir and soloists, in a number of works by Henry Purcell, which they then began recording for Archiv. The first to be issued is the remarkable little opera *Dido and Aeneas* ("little" only in the sense of its being so concise). The performance makes vividly apparent why the première of this work, which occurred three hundred years ago last spring, is regarded as having inaugurated the "golden age" of English music. It is by no means the first successful recording of the opera. Charles Mackerras conducted a fine one on the same label more than twenty years ago, and Raymond Leppard has conducted two very appealing ones since then. But Pinnock's is surely the most effective of the several recordings involving period instruments.

Pinnock's cast is headed by the

*Von Otter: an ideal Dido*



young Swedish mezzo Anne Sofie von Otter, whose voice is ideally suited to the role of Dido and who makes her characterization particularly effective through her sensitive balance of total emotional commitment and a patrician restraint fitting for a queen. All of her associates make similarly distinguished contributions in realizing both the musical and dramatic qualities of their respective roles—of making those qualities, in fact, inseparable. And Pinnock has the measure of the work without question; he keeps it moving with a wonderful sense of flow, and in the charming instrumental dances his players do not rely on the sheer sounds of their instruments to win us over but show the most vivid imaginativeness and spirit.

Simon Standage, who has twice been the violin soloist in recordings of Vivaldi's *Four Seasons* with Pinnock, richly earns solo billing here, if only for his incredible playing in the last of those tiny dances, the Witches' Dance in Act III. This is what we might call total-immersion musical drama: Every number, vocal and instrumental, is a part of a continuous and utterly convincing theatrical flow. Dido's great lament, set forth in truly regal modesty, and the chorus that follows it do not merely conclude the work but resolve its various elements with the impact of a Mahler adagio in microcosm.

The recording itself balances warmth and crispness as appealingly as Von Otter balances the emotional elements of her characterization, and the package includes an especially comprehensive background piece by Curtis Price as well as the full text. (And, by the way, this is the first Deutsche Grammophon CD I've seen with indexing.)

*Richard Freed*

**PURCELL: *Dido and Aeneas*.** Anne Sofie von Otter (mezzo-soprano), Dido; Stephen Varcoe (baritone), Aeneas; Lynne Dawson (soprano), Belinda; Nigel Rogers (tenor), Sorceress. First Sailor; others. Simon Standage (first violin); Trevor Pinnock (harpsichord); Choir of the English Concert; the English Concert, Trevor Pinnock cond. DEUTSCHE GRAMMOPHON/ARCHIV © 427 624-2 (54 min).

### NOW ON CD Compact discs of previously released LP's

#### POPULAR

- **ERNESTINE ANDERSON: *Hello Like Before*.** CONCORD CCD-4031. "A wonderfully relaxed session" (June 1977).
- **CHET BAKER: *My Favorite Songs*.** ENJA/MUSE 2-79600. Recorded at a concert two weeks before Baker's death in Amsterdam in 1988.
- **JEFFERSON AIRPLANE: *Crown of Creation*.** MOBILE FIDELITY MFCD-523. "Abounding in good humor and wit—flawless" (Best of Month, December 1968).
- **MODERN JAZZ QUARTET: *The Complete Last Concert*.** ATLANTIC 81976-2 two CD's. An "eminent exit," recorded November 25, 1974 at Fisher Hall in New York. "by the oldest and classiest jazz act ever" (December 1975).
- **PHIL OCHS: *A Toast to Those Who Are Gone*.** ARCHIVES ALIVE/RHINO R2 70080. Masters and demos, most never before released, of fifteen originals Phil Ochs recorded prior to 1964, compiled by his brother Michael.
- **MUDDY WATERS: *The Chess Box*.** CHESS/MCA CHD3-80002 three CD's. Seventy-two classic performances, including ten previously unreleased, dating from 1947 to 1972.
- **THE YOUNGBLOODS: *Elephant Mountain*.** MOBILE FIDELITY MFCD-792. The band's third album, originally released by RCA in 1969.

#### CLASSICAL

- **BACH: *Brandenburg Concertos*.** K. Richter. ARCHIV 427 143-2 two CD's. "Extremely impressive" (September 1968).
- **DVOŘÁK: *Piano Quintet*.** SCHUMANN: *Piano Quintet*. Schnabel; Pro Aric Quartet. ARABESQUE Z6613. On license from EMI, recorded in 1934.
- **EGK: *Peer Gynt*.** Hermann; Wallberg. ORFED/KOCH 005 822 two CD's. A "colorful and fast-moving" operatic account of the Ibsen classic by a twentieth-century master (November 1983).
- **ZINKA MILANOV: *In Memoriam*.** Milanov. LEGATO BIM 709-2 two CD's. A "Biographies in Music" release commemorating the much-beloved soprano.
- **RAMEAU: *Works for Harpsichord*.** Gilbert. ARCHIV 427 176-2 two CD's. "Impeccable" (April 1978).
- **R. STRAUSS: *Salome*.** Caballé. Milnes; Leinsdorf. RCA 6644-2-RG two CD's. "Completely satisfactory" (Best of Month, November 1969).



# "McIntosh . . . no other transistor amplifier is capable of reproducing as well."

"All the sounds, even those different one from another, remain separated and distinctive. There results a sensation of contrast, precision, and uncommon clarity.

. . . A close analysis of different frequencies reveals an extremely deep bass, very rich in spatial detail . . . The upper bass region is very linear testifying to an extraordinary richness of information. The very structured mid-range contributes enormously to listening pleasure.

The feeling of power is never refuted and instead of stunning the listener, the 7270 recreates an audio environment of a majesty that no other transistor amplifier is capable of reproducing as well." Need we say more?

—REVUE DU SON, foremost French stereo magazine.

For a copy of the REVUE DU SON and information on the McIntosh MC 7270 Amplifier and other McIntosh products write:  
MCINTOSH LABORATORY INC.  
P.O. Box 96 EAST SIDE STATION, DEPT. A47  
BINGHAMTON, NY 13904-0096



CIRCLE NO 29 ON READER SERVICE CARD

# THE PERFECT HARMONY.





# PRICE AND PERFORMANCE.



Introducing three slick new performers from Blaupunkt. Finally, legendary performance without a legendary price tag. That's the Blaupunkt difference. Just feast your eyes on our three latest innovations. The Phoenix and Boston cassette/receiver combinations and the QL6500 speakers. Compare the features. Then visit a Blaupunkt dealer and compare the performance. Once you do, you'll see there's no comparison.

The Phoenix SOR 29 (\$279.95) Quick release removable chassis  Auto reverse cassette deck  CPS cassette program search  AM/FM stereo with 20 presets  TS travel store with 5 presets  True 4-channel preamp-out  Separate bass/treble  Loudness  Noise reduction system  Flex-Fader  Code Protection with flashing LED  Multifunction display  15 watts total power.

The Boston SOR 49 (\$299.95)  High power 50 watts  Auto reverse cassette deck  AM/FM stereo with 24 presets  TS travel store with 6 presets  True 4-channel preamp-out  Separate bass/treble  Flex-Fader  Code Protection with flashing LED  Multifunction display.

QL6500 Speakers (\$179.95)  6.5-inch Coaxial  Quartz polypropylene cone  Altanium tweeter for optimum high frequency response  50-20,000 Hz overall frequency response  100 watts max  90 dB sensitivity.

For the Blaupunkt dealer nearest you, call 1-800-237-7999.

 **BLAUPUNKT**  
BOSCH Group  
*The difference is pronounced.™*



# Music made Beautiful



Sonance makes music more beautiful with "Architectural Audio" Custom in-wall stereo speakers and controls that blend unobtrusively into your home's most discriminating decor.

All Sonance speakers and controls can be painted or cloth covered to aesthetically match any room's delicate design. Precision flush mounting insures excellent high fidelity response and consistent decorative perfection.

To experience "Architectural Audio" we invite you to call your local Custom Audio/Video Specialist.



32992 CALLE PERFECTO, SAN JUAN CAPISTRANO  
CALIFORNIA 92675 (714) 661-558  
Outside CA (800) 582-7777 A (714) 240-4995

Canadian Distributor: Aralex Acoustics Ltd., 33 W. 8th Ave.  
Vancouver, B.C. V5Y 1M6 (604) 873-4475

Sonance Products include Five variations of Speakers,  
One Passive & One Active Subwoofer, a Speaker Distribution System,  
and Five different Volume Controls & A/B Selectors.  
(All Built-In Products fit in "2x4" wall)



Discs and tapes reviewed by  
Chris Albertson, Phyl Garland,  
Ron Givens, Roy Hemming,  
Alanna Nash, Parke  
Puterbaugh, Steve Simels

**ANYTHING GOES** (Cole Porter). Kim Criswell, Frederica von Stade, Cris Groenendaal, Jack Gilford, Bruce Hubbard, others (vocals); Ambrosian Chorus; London Symphony Orchestra, John McGlenn cond. EMI/ANGEL © 4DS-49848, © CDC-49848 (74 min).

Performance: *Something special*  
Recording: *Bright and vivid*

From the opening measures of the overture here, it's spine-tinglingly clear how exciting any number of vintage albums of Broadway shows would have sounded if CD technology had come along a few decades earlier than it did. But thanks to such dedicated conductors as John McGlenn, we can have vivid, authentic, superbly recorded re-creations—as with his recent *Show Boat* and now Cole Porter's hit musical of 1934, *Anything Goes*. Unlike the recent Lincoln Center revival in New York (and several others in the last decades, plus two movie versions), this *Anything Goes* sticks strictly to the original score, with no interpolations of songs from other Porter shows. McGlenn does, however, reinstate (in their proper positions) two topnotch numbers that were dropped during the 1934 pre-Broadway tryouts: *Buddy Beware* and *What a Joy to Be Young*. He also includes, at the end of the recording, three other songs that were cut during rehearsals, including *Kate the Great*, which Ethel Merman refused to sing because its "dirty" lyrics (they seem mild today) would offend her mother—Porter got even by giving her *Katie Went to Haiti* for 1939's *DuBarry Was a Lady*. The details about all of this, as well as a guide to the arrangements used for each song (some are Robert Russell Bennett's surviving originals, others are conscientiously researched reconstructions), are provided in the superbly thorough liner notes.

Frederica von Stade, in the secondary role of the ingenue, Hope, sings gorgeously and unaffectedly. Her *All Through the Night* duet with Cris Groenendaal and her solo *What a Joy*

## EXPLANATION OF SYMBOLS:

- = DIGITALLY RECORDED L.P.
- Ⓢ = TAPE CASSETTE
- Ⓢ = COMPACT DISC (TIMINGS ARE TO NEAREST MINUTE)

## DYLAN'S VISION

**T**HROUGHOUT the Eighties the born-again Bob Dylan has been wandering across a land he barely recognizes like a pilgrim without a compass. Though some believe that the religious fundamentalism so despised by his critics and old fans passed from his music early in the decade, the fact is that he simply gave it another form, burying his message in metaphor. The 1986 boxed retrospective "Biograph" helped to redirect attention to the Dylan of old, but there were no comforting neoclassic strains of mid-Sixties "Blonde on Blonde" to be heard in his contemporary works, and his voice has remained censorious and morally aghast.

Essentially, the message remains the same in his new album, "Oh Mercy," but in myriad subtle ways Dylan has reclaimed his status as an artist and visionary. Daniel Lanois's sympathetic and coherent production is pared down and spare, providing a haunting backdrop for Dylan's gruffly nuanced vocals. It's not so much what's been put in as what's left out that gives "Oh Mercy" its quiet strength. Though it opens with an attention-grabbing burst of power, *Political World*, which recalls *Subterranean Homesick Blues* in its rapid-fire fusillade of images, it quiets down to a ballad-paced, conversational simmer by the fourth number, *Ring Them Bells*. In many songs there's little more than Dylan's guitar and Lanois's dobro, perhaps flavored with a discreet dash of keyboards or a recessed rhythm section, to compete with the singer's raspy, unvarnished voice.

But the secret ingredient in "Oh Mercy" is humility, and that is Dylan's own doing. In *Most of the Time* and *What Good Am I?* he is remarkably candid about confessing his own doubts and shortcomings. He follows these two songs with *Disease of Conceit*, his diagnosis of the illness afflicting humanity today. *What Was It You Wanted* and *Shooting Star* close the album as postscripts addressed to Dylan's followers and critics, exploring the complex relationship between artist and audience with wary suspicion and resigned acceptance of the inevitable.

"Oh Mercy" asks difficult and even unanswerable questions—about the ultimate worth of the self, about the expectations we have of each other, and about the world at large as it cracks upon its very foundations. Dylan doesn't use the album as a pulpit from which to advocate a reflexive acceptance of Christianity, although a hard reckoning to come and the promise of salvation still appear to be very much



articles of faith with him. Instead, as he relates parables (*Man in the Long Black Coat*, a shadowy metaphor for temptation in its many guises) and makes observations (*Everything Is Broken*, a catalog of a soul and a world in disrepair, set to a bluesy, swinging beat), he enjoins you to draw your own conclusions.

The implicit acknowledgment that there are no absolute verdicts to be handed down by a mere mortal in this troubled world is the most encouraging quality of "Oh Mercy." As a fresh start, the album also promises that Bob Dylan's star will continue to burn brightly in the Nineties. Parke Puterbaugh

**BOB DYLAN: *Oh Mercy*.** Bob Dylan (vocals, guitar, harmonica); instrumental accompaniment. *Political World*; *Where Teardrops Fall*; *Everything Is Broken*; *Ring Them Bells*; *Man in the Long Black Coat*; *Most of the Time*; *What Good Am I?*; *Disease of Conceit*; *What Was It You Wanted*; *Shooting Star*. COLUMBIA OC 45281. © OCT 45281, © CK 45281 (39 min).

## STRAIGHT AEROSMITH



From left, Brad Whitford, Joe Perry, Steven Tyler, Joey Kramer, and Tom Hamilton

**S**EX, drugs, and rock-and-roll, pop culture's unholy trinity, are often lumped together, but giving up the second of them has intensified Aerosmith's desire to excel at the other two. The band's powerful, drug-free performances in 1987's "Permanent Vacation" and their new album, "Pump," give the lie to the myth that cocaine and fast drugs have anything to do with inspiring fiery rock-and-roll. Just compare these latest records with those Aerosmith cut during nearly a decade of life in the fast lane—from "Draw the Line" to "Done with Mirrors," a fairly dreadful run of albums. For all intents and purposes, "Permanent Vacation" picked up where "Rocks," their last great album of the Seventies, left off, and "Pump" moves them another step forward.

Perhaps egged on by younger competition such as Guns n' Roses, with whom they toured, Aerosmith rocks harder than ever in "Pump." The cover of the album, a suggestive picture of one truck mounted on top of another—dare I call it auto-eroticism?—is an apt metaphor for the raunchy rocking within. It's a very lean and sinewy band of survivors that shakes the rafters with songs such as *Young Lust*, *F.I.N.E.*, *My Girl*, and the kinky hit *Love in an Elevator*, with the added voices of tour manager Bob Dowd and horn player Bruce Fairbairn. At the same time, Aerosmith manages to work in a lot of baroque, left-field touches—everything from horns and strings to sitars and exotic African instruments—without detracting from the band's guitar-driven, adrenalin-fueled whomp. You can tell these guys are bouncing off the walls with energy and ideas—sort of a rediscovered lust for life not uncommon in

those who have conquered their addictions—and "Pump" does just that, for nearly fifty minutes.

Along the way, Aerosmith slips a few public-service announcements into the program. *Monkey on My Back* is a plain-spoken account of addiction ("You best believe I had it all and I blew it," screams Steven Tyler) that beats back the monkey with a solid shot of slide-guitar-driven blues-rock. *Janie's Got a Gun* is an unflinching account of child abuse and the worst-case scenario that unfolds when such abominations go unnoticed or unpunished. Finally, in *Voodoo Medicine Man*, Aerosmith interpolates a Zulu tribal chant into a raging number about the widening gap between man and nature—and nature's indignant response to one too many environmental affronts.

The audacity of the arrangement is reminiscent of *Continental Drift*, from the Rolling Stones' "Steel Wheels" album, which also works the music of a far-flung culture (the Jujoukan pipe players of Morocco) into a rock song. Isn't Aerosmith, when you get down to it, America's answer to the Stones? And isn't it somehow fitting that both bands are delivering knockout punches after years of foundering? Parke Puterbaugh

**AEROSMITH:** *Pump*. Steven Tyler (vocals, keyboards, harmonica); Joe Perry, Brad Whitford (guitars); Tom Hamilton (bass); Joey Kramer (drums); vocal and instrumental accompaniment. *Young Lust*; *F.I.N.E.*; *Love in an Elevator*; *Monkey on My Back*; *Janie's Got a Gun*; *The Other Side*; *My Girl*; *Don't Get Mad, Get Even*; *Voodoo Medicine Man*; *What It Takes*. GEFLEN GHS 24254, © MSG 24254, © 24254-2 (48 min).

to *Be Young* are the album's unequivocal highlights. Groenendaal is splendid as Billy, the leading man, but Jack Gilford just doesn't have enough voice left to do justice to Moonface Martin's numbers. In the keystone role of Reno Sweeney, the one that was once Mer-man's, Kim Criswell sings with verve and clarity, but also with tones that too often become strident and whiny.

McGlinn is the clear star of this production, holding everything together with a winning blend of lightheaded snap, dash, and genuine lilt. Despite the somewhat uneven casting, his *Anything Goes* again sets a high standard for new recordings of American musical-theater classics. R.H.

**RODNEY CROWELL:** *Keys to the Highway* (see Best of the Month, page 104)

**MELISSA ETHERIDGE:** *Brave and Crazy*. Melissa Etheridge (vocals, guitar); other musicians. *No Souvenirs*; *Brave and Crazy*; *You Used to Love to Dance*; *You Can Sleep While I Drive*; and five others. ISLAND 91285-1, © 91285-4, © 91285-2 (48 min).

Performance: *Gritty*  
Recording: *Good*

Melissa Etheridge makes folk-rock, with the emphasis on the rock. She may strum an acoustic guitar, and she may write songs filled with literate references, but she's a rocker at heart. She belts out her words from deep in the diaphragm, with her jaw thrust out, growling and moaning in a husky voice that portrays a swaggering, macho way of looking at life.

Unfortunately, Etheridge's attitude gets in the way of her music. She moves back and forth between sensitive longing and headlong consumption without ever stopping in between. Her singing is bipolar, too, which explains the basic structure of nearly all her songs: soft expectancy in the verses and hard pounding in the choruses. These are power ballads of a sort, but she doesn't always successfully empower them.

Taken in small doses, Etheridge is quite effective. Over the course of an entire album, however, the repetitiveness and narrowness of her music get a little tiresome. She'll sound great in the car, but will you want to take her home? R.G.

**EURYTHMICS:** *We Too Are One*. Eurhythmic (vocals and instrumentals); other musicians. *We Two Are One*; *The King & Queen of America*; *(My My) Baby's Gonna Cry*; *Don't Ask Me Why*; *Angel*; and five others. ARISTA AL-8606, © AC-8606, © ARCD-8606 (48 min).

Performance: *Typical*  
Recording: *Quite good*

Annie Lennox and Dave Stewart have settled into a comfortable groove some-



HELP US HELP YOU!

# PARTICIPATE IN THE STEREO REVIEW BUYER POLL

Stereo Review wants to know more about our readers. How much equipment you buy (and how often), how much you spend on it, what sort of product features you like. That will help us create a better, more informative magazine, specially geared to your tastes and preferences.

To gather this important information, we've created the Stereo Review Buyer Poll. And we need your help to make it work.

If you've bought any equipment within the past 30 days, we'd like you to participate (see instructions below). We'll use the information you give us to keep manufacturers up to date on the buying habits of stereo enthusiasts—the most knowledgeable group of audio buyers in the country. And in the long run, that will mean better service for you.

## HOW TO PARTICIPATE

You can participate in the Stereo Review Buyer Poll by sending in the Reader Service Card appearing next to this page. We've provided space for you to list any equipment purchased in the past 30 days. Any kind of audio/video equipment qualifies.

For example:

### Home Audio Components

- Amplifier
- Receiver/Tuner
- Speakers
- Turntable
- Cassette Deck
- Equalizer
- CD player

### Portable Stereo

- Portable Cassette Player
- Portable CD Player
- Headphones

### Car Stereo

- Tuner
- Cassette Deck
- Speakers

### Home Video

- VCR
- Camcorder
- Videodisc Player
- Stereo TV

Fill in the type of equipment, manufacturer, model number, and price you paid. Include all the equipment you bought this month. Then print your name and address and drop it in the mail (we pay the postage). It's that simple!

**Free Information Service** ★★ ★

Get free literature on stereo products featured in this issue. Simply fill out your name and address, circle the number on the card that corresponds to the key number at the bottom of the advertisements and mail this card today.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64  
 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96  
 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128  
 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160

**STEREO REVIEW BUYER POLL**

1. In the past 30 days, have you purchased any audio or video equipment or accessories?  
 A.  YES B.  NO → Thank You

2. Which type(s) of equipment did you purchase in the past 30 days?  
 A.  Home audio B.  Portable stereo  
 C.  Car stereo D.  Video

3. In the space below, please write in the type (speakers, car CD player, stereo VCR, etc.), the make, the model number and the price paid for each item purchased in the past 30 days.

TYPE	MAKE	MODEL	PRICE PAID
Car stereo	Kenwood	KR-5923	\$379.00
Speakers	Kenwood	BS3-10	\$150.00
car stereo/cassette deck	Kenwood	KT-9372 (4)	\$1699.00

Indicate if you'd like to subscribe to STEREO REVIEW (you'll save 50% off our regular subscription rate).  
 Please send me 12 issues of STEREO REVIEW for \$5.99 and bill me. (Full year subscription price \$11.99)

PLEASE PRINT CLEARLY.

NAME: STEVEN NELSON

ADDRESS: 158 LORRAINE AVENUE

CITY: NEW ROCHELLE STATE: NEW YORK ZIP: 10554

(Zip code must be included to insure delivery.)  
 Void after October 31, 1987.

## LOOK FOR THE BUYER POLL EVERY MONTH

The Stereo Review Buyer Poll will appear in every issue—just check the Table of Contents for that month's location. You can participate in any month in which you purchased audio/video equipment. Of course, even if you don't join our Poll, you can still send in the Reader Service card to get information about products advertised in that month's issue.

We hope you'll participate regularly in the Stereo Review Buyer Poll. Your answers are important to us—and you'll find the resulting benefits important to you.

Thanks for helping us out!

# Stereo Review

# INTRODUCING OHM'S FULL

At Last.

Speakers designed for the way you listen to music.

Speakers that provide a fully-balanced, 3-dimensional stereo image no matter where you sit or stand in the room. Speakers that deliver exceptional overall sound reproduction. Speakers you can afford.

Speakers you'll love.

## THE CONCEPT

Instruments recorded left stay left...

We started with a basic premise: most people don't (or at least don't want to) sit glued to one spot for hours just to listen to their favorite music.

Yet for years, these same people have accepted the tyranny of the "sweet spot." Move a little to the left or right and the stereo balance is destroyed. Move even more and you might as well not have stereo at all. It's been one of the most persistent and troublesome barriers standing between listeners and their music.

We've eliminated it.

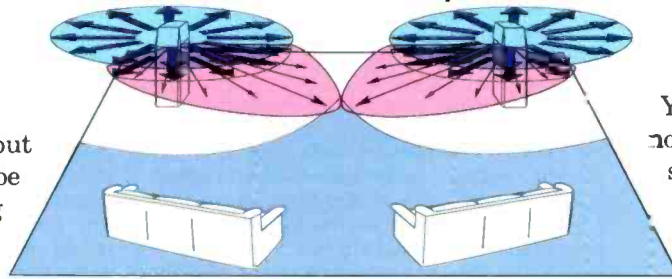
Ohm FRS Series  
\$450 to \$1,400 per pair





# ROOM STEREO™

## Controlled Directivity



Balanced 3D Stereo Image Enjoyed Throughout The Room

## THE TECHNIQUE

We've engineered the output at the highest frequencies to be louder along an axis pointing diagonally across the listening area and softer directly in front of the speaker. The technique is called "Controlled Directivity" (see illustration). The results are simply spectacular as a perfectly balanced, 3-dimensional stereo image fills the entire room.

In addition, we use time and phase aligned drivers to ensure that first-arrival sounds reach each ear simultaneously, without any confusing out-of-phase sounds.

Our speakers are also designed to respect the low and mid frequency tonal characteristics of each and every real-world source, resulting in extremely sharp, accurate imaging.

No other speakers available today incorporate all three of these essential techniques. That's why only Ohm speakers can create a true, 3-dimensional sound stage throughout a room.

You expect the best technology from Ohm. We make sure you get it.

## THE OHM LINE

From the new, compact FRS 5 to the top-of-the-line Walsh 5, the Ohm speakers pictured on these pages offer a selection designed to deliver the performance you want at a price you can afford.

Unbeatable quality and value ideally suited to the way you live and listen: that's Ohm.

## THE COMMITMENT

For over 18 years, Ohm Acoustics, Inc. has dedicated itself to making Full Room Stereo

and 3-dimensional sound a reality. Only such dedication could have created technology this unique, a line of speakers this impressive, and sound reproduction that is as close to the real world as you can possibly get.

...those recorded right, stay right. No matter where you move in the room.

## THE TECHNOLOGY

Here is just some of the proven, advanced technology you'll find in our Full Room Stereo speakers:



Coherent Audio Monitors  
\$300 to \$575 a pair



Ohm Sound Cylinders  
\$650 to \$1,200 a pair



Ohm XO Series  
\$750 to \$7,100 a pair

■ High performance, Ferrofluid-cooled tweeters mounted off the main baffle board to eliminate distortion.

■ A patented Sub-Bass Activator Circuit that enhances the already deep bass response of the acoustically coupled sub-woofer while also reducing bass distortion.

■ Patented Coherent Line Source (CLS) drivers that use the inverted cone configuration proven best for producing the controlled directivity essential for Full Room Stereo.



241 Taaffe Place, Brooklyn, NY 11205

## You'll find Ohm products at the following locations:

ABC Warehouse, FEDCO, Hammond Electronics, Highland Super Stores, McDuff Electronics, Macy's (Northeast), Sight in Sound, Video Concepts, West Coast Sound and many selected independent dealers. Call 718-783-1111 for other locations.

# MARY CHAPIN CARPENTER



**O**F all the changes country music has endured in the past decade, the latest has been the total revamping of the image of the "girl singer," so named because large package tours or syndicated television shows usually featured, to break up the monotony, one female performer. The Wilburn Brothers had Loretta Lynn, and Porter Wagoner had Dolly Parton. Nobody had very many of them, however, because record companies figured women did most of the buying, and most women wanted to listen to men.

It took the million-selling status of Tammy Wynette to disprove that theory, but female country-music singers have still been expected to toe a certain line, to be sweet, submissive, and deferential to men, to wear calico or gingham whenever possible, to feel at home posing in front of a bale of hay or a wagon wheel, whether or not they grew up on a farm.

A number of such women have tried to assert their independence through the years—Loretta Lynn with such songs as *The Pill*, Reba McEntire with her outspoken interviews, and K.T. Oslin with her word portraits of sassy, vulnerable women, her fusion of country, blues, and Broadway, and her stalwart refusal to act coquettish at forty-seven.

Now comes another kind of Eighties lady, one Mary Chapin Carpenter, who lives not in Nashville but in Washington, D.C., and whose accomplishments include earning a B.A. in American Civilization at Brown University. Even as recently as ten years ago, anybody hoping for a career in country music kept such things as university degrees squarely under their Stetsons so as not

to frighten the horses. Too much education was somehow considered "inauthentic."

Today, however, Mary Chapin Carpenter is being received with open arms. And with very good reason. Her second CBS album, "State of the Heart," like her first, "Hometown Girl," reveals a songwriter of uncommon wisdom, clarity, and craft. Unlike millions before her, she has figured out how to write music that is both commercial and intelligent, universal yet intensely personal.

Carpenter's forte is a style that mixes folk, country, blues, and jazz—with heavy emphasis on folk—and at times her husky, sturdy voice brings to mind the vocal and melodic fashions of such diverse artists as Rosanne Cash, Emmylou Harris, Nanci Griffith, and Suzanne Vega. But her real drawing card, like Griffith's and Vega's, is the poetic nature of her lyrics. In a voice that belies a trace of genteel Southernness, she sings poignantly of the loneliness and anger of a middle-aged woman abandoned by a married lover (*Goodbye Again*) and, in a most difficult concept to pull off, of the years and loves and events marked by the fading and fraying of a favorite old frock (*This Shirt*). She manages to duplicate the narrative craftsmanship of Harry Chapin (no relation) without his cloying, overwrought emotionalism.

All of the songs here are, in fact, songs of the heart, songs that speak of love and loss with, as Carpenter says, as much humor as melancholy. But Carpenter, the solo romantic of old, is now accompanied by a band that rocks out plenty when needed, employing a chicken-pickin' electric guitar for the country-rock of *Too Tired*, a randy song about giving in to wrong-headed romance.

"Randiness," of course, or at least a woman's sexuality, was something the "girl singer" of years past couldn't touch with a ten-foot or even an eleven-foot pole. Tammy got a lot closer, as did K.T. But chances are it's Mary Chapin Carpenter who will acquaint country audiences with a full range of a woman's emotion—or just a human's, for that matter. Girl singers never sounded as articulate as she does in "State of the Heart." Or, come to think of it, as good. *Alanna Nash*

**MARY CHAPIN CARPENTER:** *State of the Heart*. Mary Chapin Carpenter (vocals, acoustic guitar); vocal and instrumental accompaniment. *How Do; Something of a Dreamer; Never Had It So Good; Read My Lips; This Shirt; Quittin' Time; Down in Mary's Land; Goodbye Again; Too Tired; Slow Country Dance; It Don't Bring You*. COLUMBIA FC 44228, © FCT 44228, © CK 44228 (38 min).

where between rock and soul. It's the dominant mode in "We Too Are One," their eighth album as Eurythmics, and it's the hybrid that's brought their recent commercial success. Stewart provides the rock, and Lennox delivers the soul.

Sometimes that soul comes on ice. Lennox always treads the fine line between passion and disdain. In the title cut, she's warm and embracing, in (*My My*) *Baby's Gonna Cry* she's cool and distancing, in *Don't Ask Why* she's cold and cruel. Lennox's voice soothes at the bottom of her range, but at the top it cuts like a whip.

"We Too Are One" takes an occasional side trip from romance. *The King & Queen of America* is a stiff jab at vacant American attitudes, and *Sylvia* tells the melodramatic story of a young woman whose life is a downward spiral unto death. But the most powerful track in the album is *Angel*, a quiet dirge about the death of a dear one. It doesn't seek to explain so much as describe grief and loss. The song is all the more powerful for its lack of answers.

"We Too Are One" doesn't represent any bold new developments. Instead, it reaffirms the talent and ability of one of rock's most captivating duos. *R.G.*

**JANET JACKSON:** *Janet Jackson's Rhythm Nation 1814* (see Best of the Month, page 103)

**ZIGGY MARLEY AND THE MELODY MAKERS:** *One Bright Day*. Ziggy Marley and the Melody Makers (vocals and instrumentals); instrumental accompaniment. *Black My Story (Not History); One Bright Day; Who Will Be There; When the Lights Gone Out; All Love*; and five others. VIRGIN 91256-1, © 91256-4, © 91256-2 (41 min).

Performance: *Bob Marley lives*  
Recording: *Very good*

There is something eerily familiar about the music of Ziggy Marley and the Melody Makers, which probably stems from the fact that these four kids are children of the late Bob Marley, who was so responsible for bringing international recognition to Jamaican reggae. Their music is just as compelling as his, but they have taken a bold step into the mainstream by employing the sort of modern production that will make their politically informed lyrics more palatable to a broad audience. The bottom is heavier, the sound crisper and clearer than in Bob Marley's records. "One Bright Day" is an amazingly rich and rewarding album that conveys the essential charm of authentic reggae without sacrificing its integrity. *P.G.*

**MAZE FEATURING FRANKIE BEVERLY:** *Silky Soul*. Frankie Beverly (lead vocals, keyboards, drum programming); Maze (vocals and instrumentals). *Silky Soul; Can't Get Over You; Just Us; Somebody Else's Arms; Love's*



# Everybody Wants My RoomMate®...

6/4  
FROM DAY ONE  
I KNEW I'D FOUND  
THE PERFECT  
ROOMMATE.



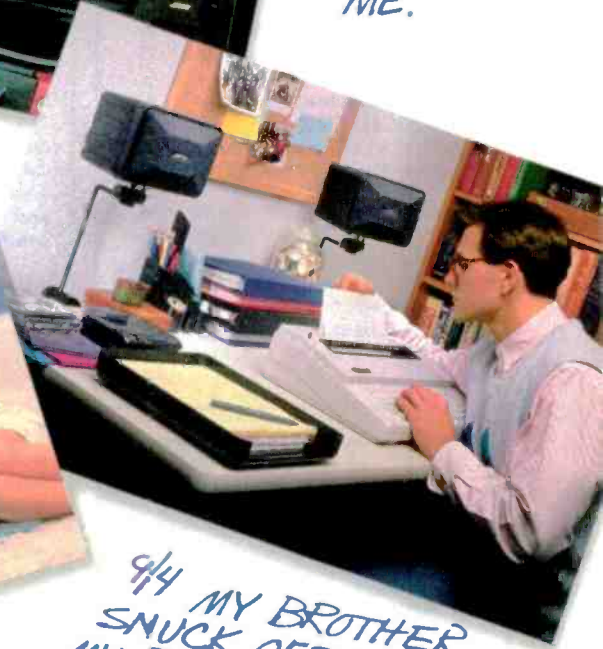
7/1  
MY  
GIRLFRIEND  
AGREED.  
SHE WANTED  
MY ROOMMATE  
MORE THAN  
ME.



8/15  
EVEN MY  
ROOMMATE  
WANTED  
MY ROOMMATE.



9/4 MY BROTHER  
SNUCK OFF WITH  
MY ROOMMATE  
TO COLLEGE.



## The Bose® RoomMate® II portable powered speaker system: high performance stereo for home and beyond.

Imagine having a rugged, go-anywhere sound system that fills your room—and your life—with high performance sound. That's the Bose RoomMate II speaker system!

Clear highs. Rich mid-range. Deep, powerful bass. All in a package small enough to go where you do.

At the heart of the system is a 4 1/2" Bose Helical Voice Coil driver delivering unmatched accuracy, efficiency, and reliability. Other features include a built-in amplifier and active equalizer for true high fidelity and aerodynamically tuned ports for impressive bass.

Since the system is already powered, you don't need an external amplifier. Just plug it into a portable CD player and you'll have all the stereo you need. And with

custom mounting accessories, you can put it in the most improbable places!

### Stereo to go!

Headed to the lake? The beach? The mountains? Pack the RoomMate II system in its optional PC-1 powercase, and enjoy music for up to 12 hours at full volume! Then recharge it overnight. For music on the road or in the boat, simply plug in the car adapter.

"If music is important in your life, sooner or later you will own a Bose system."

For more information, call: 1-800-444-BOSE.



**BOSE**  
Roommate II

© Copyright 1989 Bose Corporation,  
The Mountain, Framingham, MA 01701-9168, USA  
(508) 879-7330 FAX: (508) 872-6541  
Bose products are distributed worldwide.

# TOTAL HARMONIC DISTORTION

by Charles Rodrigues!

This handsome, 128-page paperback—with 118 classic cartoons, a foreword by William Livingstone, and an illustrated autobiographical sketch by Rodrigues himself—is only \$7.95. Enjoy your favorites again, catch the gems you missed, and share the laughs with friends!

**Makes a great gift!**

**TO ORDER:** Send check or money order for \$7.95 per copy, plus \$1.50 for postage & handling to:

Perfectbound Press  
Suite 4118 P  
1120 Avenue of the Americas  
New York, NY 10036

Type or print mailing address with order. New York State residents add 65¢ sales tax per copy. **Outside U.S.:** add \$1.75 postage & handling for first copy and 50¢ for each additional copy (U.S. bank funds only). *Allow six to eight weeks for U.S. delivery, longer outside U.S.*

**FREE** (def. club)  
A DIFFERENT KIND  
OF RECORD CLUB

**TREMENDOUS SAVINGS INCLUDING COMPACT DISCS...**

on every record and tape in print—  
no "agree-to-purchase" obligation of any kind.

**DISCOUNTS OF 20% TO 73%**  
off mfg. suggested list... special catalog  
features hundreds of titles and artists.

**MOST LABELS AVAILABLE**  
including most imports through special custom  
ordering service—guarantees satisfaction

**SCHWANN CATALOG**  
lists thousands of titles.

**DISCOUNT DIVIDEND COUPONS**  
redeemable immediately for extra discounts.

**NEWSLETTERS**  
informational news and happenings in the  
world of music... special super sale listings.

**DISCOUNT NEEDLE GUIDE**  
most mfg. replacements available.

**QUICK SERVICE**  
same day shipping on many orders...  
rarely later than the next several days.

**100% IRON-CLAD GUARANTEES**  
on all products and services—your total  
satisfaction is unconditionally guaranteed

Discount Music Club is a no-obligation membership club that guarantees tremendous discounts on all stereo records, tapes and CD's and let you buy what you want...when you want...or not at all if you choose.

These are just a few of the money-saving reasons to write for free details. You can't lose so why not fill out and mail the coupon below for immediate information.

DISCOUNT MUSIC CLUB, INC. 009-0190  
481 Main Street, New Rochelle, N.Y. 10801

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

CIRCLE NO. 71 ON READER SERVICE CARD

on the Run; and three others. WARNER BROS. 25802-1, © 25802-4, © 25802-2 (45 min).

Performance: *Smooth balladeer*  
Recording: *Very good*

The West Coast-based vocal-instrumental group called Maze has been on a sabbatical from recording for the past three years, so this release should come as good news to fans of Frankie Beverly, who not only sings all the lead vocals and plays keyboards but also writes just about all their music. He's a smooth balladeer who can spice his music with tasteful percussive effects when he chooses. He likes to get into a mellow groove and ride it out, which is what he does here. No song is quite as compelling as the group's all-time hit, *Southern Girls*, with its laid-back, folksy charm, but two songs stand out for rhythmic enticement as well as for the sermons tucked into their lyrics—*Change Our Ways* and *Mandela*, both of which address current concerns yet have a catchy beat. Best of all, though, this set once again "features" Beverly singing, and playing, with firm conviction and solid musicality. *P.G.*

**REBA MCENTIRE: *Reba Live*.** Reba McEntire (vocals); vocal and instrumental accompaniment. *So, So, So Long; One Promise Too Late; Let the Music Lift You Up; Little Rock; New Fool at an Old Game; Somebody Up There Likes Me; San Antonio Rose*; and twelve others. MCA © MCAC2-8034, © MCAD2-8034 (72 min).

Performance: *Goin' for it*  
Recording: *Excellent remote*

Several years ago, Reba McEntire, arguably the finest female country singer since Patsy Cline, traded in her hard-country sound for a middle-of-the-road mishmash (*Sunday Kind of Love, Respect, Whoever's in New England*) in a quest to reach the widest possible audience. Here, in an album compiled from concerts recorded before California audiences, McEntire, ably supported by a vigorous and muscular road band, skillfully blends the cowgirl material of old with the new, uptown Reba. Fiddler Glen Duncan and saxophonist Joe McGlohn add backbone to several songs that turned flaccid in the studio renditions, and while the program gets overlong with the addition of a medley of country's most stalwart tunes, the vocal and emotional results are largely satisfying.

McEntire rattles the rafters to show off her formidable technical skills. Occasionally, however, she goes way round the bend. She has an annoying tendency to overdo the trills and embellishments, and there's a wretchedly excessive *a cappella* version of Cline's signature tune, *Sweet Dreams*. If the latter indiscretion sends you lurching for the fast-forward button, you might also skip the singer's between-song prattle, which

is predictable, bland, and incessantly self-promoting. As a singer, McEntire generally has the timing—and the instincts—of a cobra. As pacer of her concerts (and lately of her career), she obviously needs new advisors. *A.N.*

**STEPHANIE MILLS: *Home*.** Stephanie Mills (vocals); vocal and instrumental accompaniment. *Something in the Way (You Make Me Feel); Real Love; Home; So Good, So Right; Comfort of a Man*; and four others. MCA MCA-6312, © MCAC-6312. © MCAD-6312 (48 min).

Performance: *Great first half*  
Recording: *Very good*

When Stephanie Mills is at her best, she can sing with such passion and power that the listener is swept up by a tide of emotion. There are many such moments in her new album, notably in the title tune, *Home*. This is the song Mills sang as a teenager on Broadway playing Dorothy in *The Wiz*. Back then, on stage, she could bring tears to the eyes with that song. Here the effect is even more profound, for she has dedicated the song and the album to the memory of Charlie Smalls, who wrote the music for *The Wiz*, including *Home*, and Ken Harper, her friend and producer. The result is no longer just a youngster interpreting a piece of music but a woman expressing the anguish and pain of life in a cry from the heart, and the backing by the all-male gospel group Take 6 greatly enhances the overwhelming impact of her performance.

There are other fine moments in the first half of this album. For instance, when Mills sings about the power of love in *So Good, So Right*, you can feel it in the bottom of your soul. But skip the second half. The four "party" songs it offers are pretty humdrum in spite of the stepped-up tempo. *P.G.*

**WILLIE NELSON: *A Horse Called Music*.** Willie Nelson (vocals, guitar); vocal and instrumental accompaniment. *Nothing I Can Do About It Now; The Highway; I Never Cared for You; If I Were a Painting; Spirit; There You Are; Mr. Record Man*; and three others. COLUMBIA FC 45046, © FCT 45046. © CK 45046 (35 min).

Performance: *Coasting*  
Recording: *Muddy*

After thirty albums, any artist is bound to let down occasionally, but Willie Nelson has been doing too much of that in the last decade, recording double albums in a weekend and taking too little care with song selection and pacing. In "A Horse Called Music," Nelson teams with his producer of twenty-five years ago, Fred Foster, who dug out a terrific, lyrical title tune and a couple of offbeat, engaging supporting songs that Nelson sings with more feeling than usual. But too much of the material seems like leftovers, including a reprise of one of Nel-



# Anyway you look at it, or listen to it.

## Proton's 600 Series Stands Apart.

Sculpted for dramatic impact, and designed for ease of use, Proton's 600 Series components fit elegantly into any environment. Seldom used controls are concealed, yet revealed at the touch of a button. Cables, hidden by rear panel covers, disappear into the pedestal of this sleek, free-standing unit.

And naturally, the sound is pure Proton. With high performance technologies like Dynamic Power on Demand™ (DPD), the new Schotz II tuner circuitry and the exclusive Aphex® Aural Exciter™, 600 Series components provide absolute clarity and realistic reproduction for incomparable listening pleasure.

The series includes the AM-656 Integrated Amplifier, the AT-670 Tuner, the AV-646 AM/FM Receiver, the AD-630 Auto Reverse Cassette Deck, the AC-620 Compact Disc Player and the matching AB-600 pedestal. Each component can be controlled with the versatile AH-681 remote, which also controls select Proton video products.

Proton's new 600 Series. A rewarding investment for the discerning listener. From every point of view.



For a free brochure and the Proton retailer nearest you, call (800) 772-0172. In California, (800) 428-1006. Or write to 5630 Cerritos Ave., Cypress, CA. 90630.

**PROTON**®

CLEARLY THE BEST

Aphex and Aural Exciter are trademarks of Aphex Systems, Ltd.  
600 Series industrial design—Reinhold Weiss Design, Inc., Chicago.  
CIRCLE NO. 93 ON READER SERVICE CARD



The future of automotive audio is here today,  
with the Delco/Bose® Gold Series music system.

Developed specifically for Corvette®, the Gold Series music system is designed to match the unique acoustic environment of the car itself. Using a "systems approach", it is engineered as an active and integral part of the vehicle.

The Delco/Bose Gold Series music system incorporates state-of-the-art acoustic technology with great ease of use. A powerful digital switching amplifier in each enclosure lets you play at full volume with no distortion. Active equalization networks, tuned enclosures and new speakers work in harmony to totally surround

passengers with an unparalleled sensory experience—filled with full, rich bass and wide dynamic range. The new Delco/Bose Gold Series music system also features Delco Electronics' Advanced Electronically Tuned Radio to offer the best of both music worlds—compact disc player and cassette tape deck—a combination we believe provides an experience that approaches the realism of a live musical performance.

Experience the new Delco/Bose Gold Series music system at your nearest Chevrolet dealer. Ask for it. And you'll be a part of tomorrow, today.

**Delco** **BOSE**  
GOLD SERIES



son's earliest successes, *Mr. Record Man*, and many of the production values seem dated and haphazard.

Best known for his work with Roy Orbison, Dolly Parton, and Kris Kristofferson early in their careers, Foster is fond of majestic, weepy strings and a liberal use of reverb—arrangements and studio techniques that diminish rather than enhance Nelson's sparse style and which Nelson has railed against for most of his Columbia career. In addition, the program is uniformly slow and melancholy in mood and lacks real focus, especially since Foster never seems fit to showcase Nelson or his long-time road band in stretch-out instrumental solos or to present the band as part of Nelson's true ensemble style. And, to add insult to injury, the overall sound is muted. All of this points to one thing: Like many other first-rate musicians seduced by the trappings of fame, Nelson is paying too little attention to the things that matter. Outlaw nonchalance is one thing, but formulaic recording is quite another. *A.N.*

**THE TEMPTATIONS: *Special*.** The Temptations (vocals); instrumental accompaniment. *Friends; Special; All I Want from You; She's Better Than Money; One Step at a Time; Fill Me Up;* and three others. MOTOWN MOT 6275, © MOTC-6275, © MOTD-6275 (44 min).

Performance: *The real thing*  
Recording: *Satisfactory*

It's easy to take the Temptations for granted—they've been around for so long. But how many groups could maintain such a consistent level of popularity as to survive for nearly thirty years and fifty albums? "*Special*" bears witness to the group's durability. There's nothing really new on the album, but why should there have to be? The group's staples—superb male ensemble singing crowned by leads that are both spirited and sensitive—are in the best tradition of soul. There's a good mix of ballads and midtempo dance tunes, the outstanding tracks being the lushly arranged title song, the whimsical *She's Better Than Money*, the lyrical *One Step at a Time*, and the gospel-influenced *Soul to Soul*, which concludes the set. Long live the Temps! *P.G.*

**TEN YEARS AFTER: *About Time*.** Alvin Lee (vocals, guitar); Chick Churchill (keyboards); Leo Lyons (bass); Ric Lee (drums). *Highway of Love; Let's Shake It Up; I Get All Shook Up; Victim of Circumstance; Going to Chicago;* and six others. CHRYSALIS F1-21722, © F4-21722, © F2-21722 (54 min).

Performance: *Perfunctory*  
Recording: *Good*

This reunion thing has gotten out of hand. The rock-and-roll equivalent of golf's popular senior circuit is unfolding before our very eyes. Only problem is,

## THE WORLD ACCORDING TO YOUNG

**W**E already know that Neil Young is a genius. He's proved that over and over again during the course of more than twenty years and more than twenty albums. It shouldn't surprise us that his new "Freedom" is a great album. And it *is* a great album, even for Neil Young.

In a sense, "Freedom" is Young's State of the Union address, and it's part rant and part dirge. He's unhappy about injustice, poverty, crime, drugs, pollution, hypocritical politicians, and mindless citizens. He takes aim at President Bush in the blistering *Rockin' in the Free World*. An acoustic, folksy treatment of the song opens the album; a no-holds-barred reprise closes it. "We got a thousand points of light/For the homeless man," Young sings at the end. "We got a kinder, gentler machine-gun hand." Life in these United States is getting worse, says Young, and nothing is being done. He hasn't been this angry since *Ohio*.

On the personal level, things seem nearly as bad. Young adds two bleak entries to his romantic oeuvre, *Hangin' on a Limb* and *The Ways of Love*. He seems to be saying in the latter that love is hard, if not impossible. You don't get it as much as steal it from someone else. Enjoy it while you can, because it doesn't last. *Hangin' on a Limb* offers a glimmer of hope: "And though their love was hangin' on a limb/She taught him how to dance." The sweetness of the track, to which guest artist Linda Ronstadt contributes warm backing vocals, is undercut by Young, whose singing is so enervated that you begin to question his will to see the song through.

No one has portrayed the horror of drugs with as much feeling and depressing intelligence as Young. But he has never before taken us this far into the terror of addiction. In *No More* he piles desperation upon desperation in a string of simple junkie plaints: "Where did the magic go?/I searched high and low/I can't find it no more/. . . No more, no more, no more." There is a puzzled quality to the song, a mournful, relentless stupidity.

The music in "Freedom" has a familiar quality. The energized acoustic-guitar playing—with sweet, country-folk accents—harks back to "After the Gold Rush," and the blend of Young's warbly voice and pedal-steel guitar was first captured on disc during his days with Buffalo Springfield. His electric-guitar work has always been muscular, as well as lyrical, and often risky. Here, at times, he makes it deliberately ugly. In *Don't Cry*, for instance, his guitar sounds like a gunshot and industrial noise. And his nasty version of the clas-



sic *On Broadway*, with new verses on the current sleaziness of the Great White Way, ends with a stinging solo—guitar notes like tracer bullets.

"Freedom" isn't simply a journey into the musical past. Young has recast his varied musical talents to say something about the way we are now. He is full to bursting with life, as bleak and depressing as some of it may be, and he must raise his voice. He must be heard. *Ron Givens*

**NEIL YOUNG: *Freedom*.** Neil Young (vocals, guitar); Linda Ronstadt (backing vocals); other musicians. *Rockin' in the Free World; Crime in the City (Sixty to Zero Part 1); Don't Cry; Hangin' on a Limb; Eldorado; The Ways of Love; Someday; On Broadway; Wrecking Ball; No More; Too Far Gone; Rockin' in the Free World*. REPRIS 25899-1, © 25899-4, © 25899-2 (61 min).

## SONGSTYLES OF THE RICH & FAMOUS

CONSIDER the compact disc. A marvel of modern technology, it is the result of hundreds of thousands of scientific man-power hours and countless dollars for research and development. Truly a monument to man's ingenuity and genius, it represents on every level—intellectual, aesthetic, whatever—the finest, most noble impulses and accomplishments of the human species.

Like . . . William Shatner singing *Mr. Tambourine Man*?

Well, yeah. Which is why it's such a thrill to hail the CD release of Rhino's "Golden Throats: The Great Celebrity Sing-Off." Because in this one gleaming, five-inch package, science, art, and commerce have come together in a transcendent collision of the ridiculous and the sublime. It proves, whether by accident or design, that even in the latter half of the twentieth century (once described by Isaac Bashevis Singer as "a complete flop"), the ideal of the Renaissance man is alive and well.



Yes, Renaissance men (and women, to be sure) are the very *raison d'être* of "Golden Throats." For you can find—when, as Alan Funt would say, you least expect it—great thespian talents, artists who've enriched our lives with their portrayals of Gomer Pyle, Sgt. Joe Friday, and *Family Affair*'s Mr. French, artists who refuse to rest on their hard-earned laurels. Here, risking much—not for crass commercial gain, but because they must—they bring their skill and inspiration to bear on the Muse of Song.

For these selfless offerings, of course, mere mortals can only give thanks before listening, awestruck, to the recorded results. Breathes there a music lover who will not thrill to the very idea, let alone the reality, of Joel Grey (father of *Dirty Dancing*'s Jennifer Grey) negotiating the haunting chord changes of Cream's *White Room*, and in

a big-band arrangement to boot? Is there out there a sentient mammalian so soulless as to be unresponsive to the Byronic nonbalance of Sebastian Cabot's virtuoso recitative of Bob Dylan's *It Ain't Me, Babe*? Could even the stoniest-hearted among us audition Jack Webb's "This is the city"-styled performance of *Try a Little Tenderness* without shedding a silent, solitary tear-drop? Like, get real, dude.

There will be, sad to say, those who decry "Golden Throats" in the sure and certain knowledge that Allan (*The Closing of the American Mind*) Bloom was right and Western civilization is doomed to the dustbin of history. Lonely, loveless, and probably physically unattractive, these bitter dweebs will note Mae West's *Twist and Shout* (superior, even, to the Rodney Dangerfield version), Eddie Albert's *Blowin' in the Wind* (featuring the very same band that backed Dylan in "Blonde on Blonde"), or Leonard Nimoy's virile baritone rendering of John Fogerty's *Proud Mary* and, if pressed, respond only with a scornful "Huh?!" Such people, it goes without saying, are to be avoided, for they will someday borrow money from you that they have no intention of repaying.

But that's another story. So, returning to the CD at hand, let us close by praising Rhino's usual superb digital remastering, by offering our condolences to my friend Greg, who nearly had a religious experience and drove his car off the side of I-95 on hearing Golden Throat Shatner contemplating *Lucy in the Sky with Diamonds*, and by thanking whatever gods we recognize that such a digital experience is available at better record stores at popular prices. And let us contemplate the myriad wonders awaiting us when the visionaries at Rhino offer us an even greater celebrity anthology, one sure to include excerpts from "The Robert Mitchum Calypso Album," the *Brady Bunch* kids' *American Pie*, and (oh joy!) Ted Knight's *Hi Guys*.

And people say that life is not worth living. *Steve Simels*

**GOLDEN THROATS: *The Great Celebrity Sing-Off*.** Leonard Nimoy: *Proud Mary*; *If I Had a Hammer*. Sebastian Cabot: *It Ain't Me, Babe*; *Like a Rolling Stone*. Eddie Albert: *Blowin' in the Wind*. William Shatner: *Lucy in the Sky with Diamonds*; *Mr. Tambourine Man*. Noel Harrison: *A Whiter Shade of Pale*. Frankie Randall: *I Can See for Miles*. Jack Webb: *Try a Little Tenderness*. Mae West: *Twist and Shout*. Andy Griffith: *House of the Rising Sun*. Jim Nabors: *You Are the Sunshine of My Life*. Joel Grey: *White Room*. RHINO R1 70187, © R4 70187, © R2 70187 (40 min).

for every Palmer or Nicklaus there are ten other elder duffers whose swing is rusty and whose drives don't carry as far as they used to. A case in point is Ten Years After. Their blues jams lack the frenetic fire they had twenty years ago, and they seem disinclined to express their more experimental side the way they did in an interesting string of albums on the Deram label way back when. "About Time" is an album of static grooves, conservative playing, and stale songwriting, all floating around a few misbegotten attempts to target the contemporary Top 40. Ten Years After should have reviewed their incendiary performance at Woodstock before embarking on this cautious, enervated, and ultimately pointless reunion. *P.P.*

**RANDY TRAVIS: *No Holdin' Back*.** Randy Travis (vocals); vocal and instrumental accompaniment. *Mining for Coal*; *Singing the Blues*; *When Your World Was Turning for Me*; *He Walked on Water*; *No Stoppin' Us Now*; and five others. WARNER BROS. 25988-1, © 25988-4, © 25988-2 (32 min).

Performance: *Gotta have songs*  
Recording: *Very nice*

Apart from his sonorous baritone and his flawless reading of emotional conflict, what distinguished Randy Travis's first three albums was a plethora of remarkable songs—*On the Other Hand*, *Diggin' Up Bones*, *Too Gone Too Long*, *Forever and Ever, Amen*, and *Deeper Than the Holler*, to name a few. For Travis's fourth album, however, producer Kyle Lehning slacked off on his song-finding duties. The opener, *Mining for Coal*, has a nice melodic twist, but the sentiment is hardly new. *He Walked on Water*, a touching tribute to a memorable great-grandfather, never takes the idea far enough. *It's Just a Matter of Time*, a gaudy remake of the old Brook Benton hit (guest-produced by Richard Perry), is all wrong for this Carolina country boy. And *Have a Nice Rest of Your Life*, with its mock-angry spoken recitation, is beneath Travis's dignity. There are several high spots, namely the jaunty *Card Carryin' Fool* and the perfect, believable innocence of *Somewhere in My Broken Heart*. But two songs do not an album make, no matter how well Travis infuses them with earnest, puppy-dog likability or how well Lehning dresses them up. As veteran tunesmith Harlan Howard likes to say, songs are everything, something that newcomers Clint Black and Ricky Van Shelton know well.

Last October, at the prestigious Country Music Association awards, Travis walked away without a prize. The competition is far keener now than it was just four years ago, when he recorded his purist's delight, "Storms of Life." Without more such solid efforts to back him up, that slight may simply be the way of things to come. *A.N.*





—Leonard Feather, Celebrated Jazz Critic for the L.A. Times, Washington Post News Service and Author of many books including "The Jazz Years—Earwitness to an Era."

# "BBE made my audio system sound better than I ever dreamed possible!"

"Listening to music has been my vocation and avocation for a lifetime. I've spent countless hours sitting in front of bandstands while some of the world's greatest musicians mesmerized me with their artistry.

"Listening to recorded music, of course, falls short of the delights of listening to a live performance. I was therefore skeptical when told that BBE could make a dramatic improvement to virtually all audio systems and I had to hear it for myself.

"I was amazed at how much better the BBE 1002 made my music system sound! There was a presence, a *being there* sense of excitement. The rich textures of the instrumental sounds, the subtle nuances and details in the music come through with clarity and authenticity.

"BBE is clearly one of the most important advances in the electronic reproduction of music to come along in my lifetime. Bravo, BBE! Encore!"

### The Great Professional Music Magazines Love BBE

"The difference in processed audio and non-processed audio is like the difference between high-fidelity speakers with and without pillows placed in front of them."

—Radio World

"There was no doubt the BBE processor added more spatial quality, more transients and more clean highs. This is the first black box that actually helped make my

music sound the way that I *knew* it should. The effect is shattering!"

—Music Technology

### BBE Really Fits In

Measuring 16½" x 9" x 1¾", BBE fits perfectly into your audio rack. Then just plug it into your wall socket and standard tape loop.

### Full Money-Back Guarantee

If you're not completely satisfied with the BBE 1002, return it within 30 days. We'll refund your money. No questions asked.

### Full Warranty

All BBE products are backed by a full year's warranty on all parts and labor—and by our reputation for innovation and leadership in the audio and electronics industries.

### Easy to Order

- It's as easy as one, two, or three.
1. Call us. Toll free. 1-800-233-8346. In California, 1-800-558-3963.
  2. Or, complete and send us the coupon at right.
  3. Or, if you're in New York, New Jersey, Connecticut, Pennsylvania, Delaware, Maryland, District of Columbia, Atlanta, Houston, New Orleans, Birmingham, Miami or Dallas, pick up your BBE 1002 in any **MACY'S** audio department.



5500 Bolsa Ave., Suite 245, Huntington Beach, CA 92649, (714) 897-6766. (800) 233-8346. In California, (800) 558-3963. In Canada, contact Daymen Audio, 3241 Kennedy Road, #22, Scarborough, Ontario M1V2J9 or call (416) 291-9644. BBE is a trademark of BBE Sound, Inc.

Send me \_\_\_\_\_ BBE 1002 unit(s) at \$189 each (U.S. currency only, California residents add applicable tax. Price includes UPS ground shipping charges. For UPS overnight shipping, add \$18. For UPS 2nd day shipping, add \$8.50. Canadian residents: please write or call for additional information.)

Enclosed is a check for \$ \_\_\_\_\_  
Or please charge to my:  
 Visa  MasterCard  
 American Express

Card #

Exp. Date

Signature

Name (print)

Address

City/State/Zip

Area Code/Phone No. (To facilitate shipping)

5500 Bolsa Ave., Suite 245, Huntington Beach, CA 92649, (714) 897-6766. (800) 233-8346. In California, (800) 558-3963.

**MILES DAVIS:** *Aura*. Miles Davis (trumpet); orchestra. *Aura—Intro; White; Yellow; Orange; Red; Green; Blue; Electric Red; Indigo; Violet*. COLUMBIA C2X 45332 two LP's, © CTX 45332 one cassette, © CK 45332 one CD (66 min).

Performance: *Shining*  
Recording: *Excellent*

I have not liked much of Miles Davis's output in recent years, but my quarrel is less with the way he plays and more with the environment he chooses. The souped-up, mediocre bands to which he lends an occasional toot. When the sound of his horn surfaces from these electronic brews, it often reflects the brilliance he still possesses, but we get only occasional flashes of it. If you share my disappointment, and long to hear the Davis of old, the Davis who blossomed with Gil Evans in the pre-"Bitches Brew" days, listen to "Aura," which finds the enigmatic trumpeter in top form backed by a large orchestra of mostly European musicians.

*Aura* is an extended composition written as a tribute to Davis by Danish trumpeter Palle Mikkelborg. It was recorded in Copenhagen in 1984, when Davis visited Denmark to receive that year's Sonning Music Prize, an honor previously awarded Igor Stravinsky, Leonard Bernstein, and Isaac Stern. Mikkelborg has been a devoted Davis fan since he first heard the trumpeter's 1953 quartet recording of *When Lights Are Low*, and he harbors equal enthusiasm for arranger Gil Evans. Not surprisingly, *Aura* is quite Evansesque, but its colorful, ethereal weave is also the fabric from which Davis's recordings were made in his early electronic period. It is a broad, stunningly beautiful tapestry that should not have had to wait five years for release. (One must wonder why a work of this scope and significance is so poorly packaged on LP. In that format, both discs are stuffed into a jacket meant for one.) C.A.

**SCOTT HAMILTON:** *Scott Hamilton Plays Ballads*. Scott Hamilton (tenor saxophone); John Bunch (trumpet); Billy Pierce (piano); Chris Flory (guitar); Phil Flanigan (bass); Chuck Riggs (drums). *I'll Only Miss Her When I Think of Her; Dream Dancing; Round Midnight; Two Eighteen; Laura; Maybe September; In a Sentimental Mood*; and two others (four others on CD). CONCORD CJ-386, © CJ-386-C, © CCD-4386 (56 min).

Performance: *Mellow*  
Recording: *Very good*

Scott Hamilton made his entrance in the Seventies, a kid, stuck in time, breathing into our ears the polished sounds of Ben Webster, Chu Berry, and

Coleman Hawkins. Now he's a firmly established keeper of the flame whose music might bring a nostalgic tear to the eyes of some and open the eyes of others. It is one thing to hear a Hawkins or Webster recording, quite another to have this music flow your way from a bandstand; I'm sure Hamilton has opened the ears of many young listeners to great jazz of the past, demonstrating in his most eloquent way how it continues to be relevant.

From first oozing note to last, the music in this album is as mellow as music can get. Accompanied by only a four-piece rhythm section led by pianist John Bunch, Hamilton gently caresses nine ballads, including Monk's *Round Midnight* and his own *Two Eighteen*, and the CD includes two additional tracks, including a superb rendition of *Body and Soul*. It takes courage—not to mention artistic self-confidence—for any tenor saxophonist to approach the latter since Coleman Hawkins staked an undisputed claim to it fifty years ago, but Hamilton does it his own way, far better than he did in one of his earliest albums. In fact, he has grown impressively as an artist, and this album is a pleasant proof of that. C.A.

**ANDRÉ PREVIN:** *After Hours*. André Previn (piano); Joe Pass (guitar); Ray Brown (bass). *There'll Never Be Another You; I Only Have Eyes for You; What Am I Here For; Limehouse Blues; All the Things You Are; Honeysuckle Rose*; and five others. TELARC © CD-83302 (66 min).

Performance: *Swinging*  
Recording: *Excellent*

André Previn came to the U.S. at the age of ten, with a classical-music background, but he first made his mark in jazz. His Fifties albums on the Contemporary label are still sought-after items, and so they should be. But now he is better known in this country as the former music director of the Houston, London, and Pittsburgh Symphony Orchestras and the Los Angeles Philharmonic. He also enjoys an international reputation as a piano soloist in the classical field, but his love for jazz has never faded, as he amply demonstrates in this album, which marks his return to jazz after some twenty-five years.

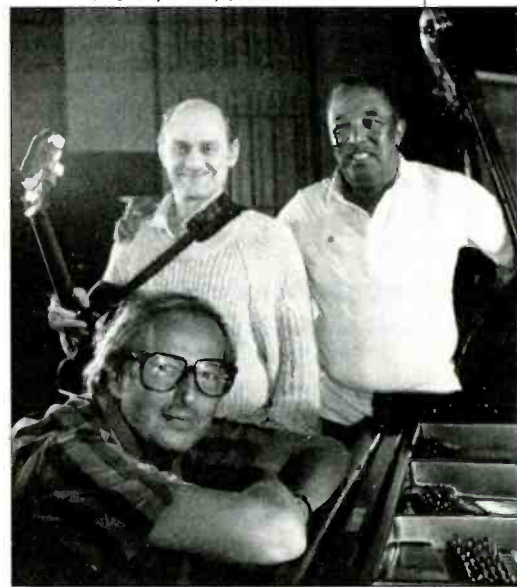
Here he is joined by guitarist Joe Pass and bassist Ray Brown, two outstanding players who make "After Hours" as much theirs as it is Previn's. The result is an extraordinarily unified effort that clearly proves the pianist's ongoing ability to contribute meaningfully to jazz. The entire album is a treat, a swinging study in elegant improvisational interplay—and the playing time is an hour and six minutes, which makes it a real bargain. C.A.

**RUDY SMITH TRIO/ANESE HADEED QUARTET:** *Jazz 'n' Steel from Trinidad and Tobago*. Rudy Smith (double tenor pans); Anese Hadeed (tenor pan); Raf Robertson (piano); Niels Prastholm (bass); Ole Steenberg (drums); other musicians. *There Will Never Be Another You; Blues for Rasta Prasta; Israel; Now Is the Time*; and four others. DELOS © DE 4013 (57 min).

Performance: *Interesting*  
Recording: *Good*

The first conversion of a steel drum into a musical instrument took place some fifty years ago, and Trinidadians have been pounding the pans ever since. This album, though, presents the steel drum in an altogether different musical environment, that is, as a jazz instrument. All but one of the eight selections are played by the Rudy Smith Trio, which blends the leader's double tenor pans with bass and drums played by Niels Prastholm and Ole Steenberg, both of whom I presume are Scandinavian. The resulting sound is interesting and, at times, quite engaging, but the limited octave range of Smith's instrument is an all too obvious barrier. Anese Hadeed, a protégé of Smith's, spans close to three octaves with his "oversized" tenor pan, and the difference is striking, if you'll pardon the pun. The presence of a pianist gives Hadeed an added advantage, but his main asset is his elaborate pan. Hadeed's single contribution to the album, a twelve-minute live performance of *Carnival '72*, is its highlight, but there's a certain charm in all this music. It wouldn't be a bad idea to have the two leaders combine their talents in a jazz setting. C.A.

*Previn, Pass, and Brown*



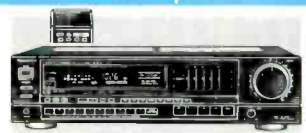
TOM ZIMBEROFF/TELARC





# This Month's Super Specials!

## Receiver Specials



### Technics SA-R177 Stereo Receiver

- 40-watts per channel • 5-band graphic equalizer • 32-key unified Audio/Video Remote Control • Quartz tuner with 24 station presets
- 2-PCR inputs

Our Low Price **\$219<sup>95</sup>** (TEC SAR177)

- Scott RS-250**  
• 25-watts/ch, 16-presets, digital-tuner . . . **\$99<sup>95</sup>**
- Scott RS-500**  
• 50-watts/ch, 16-presets, remote, EQ . . . **\$159<sup>95</sup>**
- Teac AG-55**  
• 55-watts/ch, remote, 7-band equalizer . . . **\$189<sup>95</sup>**
- Teac AG-75**  
• 75-watts/ch, remote, Matrix-Surround . . . **\$249<sup>95</sup>**
- Technics SAR-530**  
• 100-watts/ch, remote, Surround sound . . . **\$499<sup>95</sup>**
- Tandberg 3080A**  
• 80-watts/ch, 16-presets, "Audiophile" . . . **\$899<sup>95</sup>**

## Amplifiers & Tuners



### Sherwood AM-7040 Stereo Power Amplifier

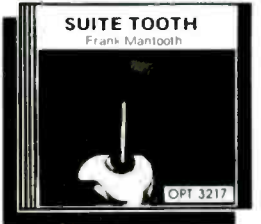
- 200-watts per channel • Variable and fixed inputs • High-speed MOSFET output stage
- Two power transformers • Relay protection
- 125db signal-to-noise ratio

Our Low Price **\$399<sup>95</sup>** (SHE AM7040)

- Sherwood AI-1110**  
• 50-watts/ch integrated amplifier . . . **\$139<sup>95</sup>**
- Sherwood TD-7010R**  
• AM/FM quartz synthesized tuner . . . **\$149<sup>95</sup>**
- Sherwood AP-7020**  
• Pre-amplifier with direct switch . . . **\$249<sup>95</sup>**
- Nikko Beta 400**  
• Pre-amplifier, CD-direct, 19" rack mt. . . **\$299<sup>95</sup>**
- Sherwood DS-7000**  
• Cassette deck, dolo B/C & HX-Pro . . . **\$299<sup>95</sup>**
- Nikko A-400**  
• 120-watts/ch power amplifier, 19" rack mt. **\$399<sup>95</sup>**

## LP, Cassette and Compact Disc Specials

### Great Jazz From Optimism



11<sup>99</sup> Per CD 5<sup>99</sup> Cassette

Also Available From Optimism For 11.99 Per CD • 5.99 Per LP or Cassette

- ALEXANDER ZONJIC: When It Is Real (OPT 3102)
- LESLIE DRAYTON: Unfinished Business (Sorry No LP) (OPT 320B)
- KIM PENNYL: Pennyl Sketches #2 (Sorry No LP) (OPT 3223)
- MAX GROOVE: Midnight Run (Sorry No LP) (OPT 3216)
- PETER KATER: Two Hearts (OPT 4001)
- ALPHONSE MOUZON: Love Fantasy (OPT 6001)
- ALPHONSE MOUZON: Early Spring (OPT 6002)
- ALPHONSE MOUZON: Morning Sun (OPT 6004)

## Compact Disc Players



### Teac PD-265 Remote Compact Disc Player

- 16-bit D/A converter • 16-selection random memory • 2-way repeat • 4-digit LED display
- 3-beam laser pickup • 3" CD compatible
- Remote control

Our Low Price **\$149<sup>95</sup>** (TEA PD265)

- Scott DA-970**  
• 15-track programming, Index search . . . **\$119<sup>95</sup>**
- Technics SLP-101**  
• 4X-oversampling, music matrix . . . **\$164<sup>95</sup>**
- Teac PD-480**  
• 18-bit, 8X-oversampling, remote control . . . **\$199<sup>95</sup>**
- JVC XLD-411**  
• 18-bit, 4X-sampling, 32-track programming **CALL**
- Technics SLP-222**  
• 18-bit, 4X-oversampling, remote . . . **\$229<sup>95</sup>**
- Teac AD-5**  
• Combination CD and cassette deck . . . **\$299<sup>95</sup>**

## Compact Disc Changers



### Technics SL-PC30 Rotary 5-Disc CD Changer

- Front-loading rotary platter permits disc changes during play • 4X oversampling • Dual D/A • 36-step memory • Wireless remote
- 4-way repeat • Disc skip key

Our Low Price **\$299<sup>95</sup>** (TEC SLPC30)

- Magnavox CDB-486**  
• 6-disc magazine, remote, 16-bit . . . **\$199<sup>95</sup>**
- Teac PD-700M**  
• 6-disc magazine, 32-track programming . . . **\$229<sup>95</sup>**
- Technics SLP-PC10**  
• 5-disc rotary changer, 4X-sampling . . . **\$239<sup>95</sup>**
- Magnavox CDB-586**  
• 6-disc magazine, 4X-sampling, remote . . . **\$249<sup>95</sup>**
- Technics SLP-PC20**  
• 5-disc rotary changer, remote . . . **\$269<sup>95</sup>**
- JVC XLM-701**  
• 6-disc magazine & single play drawer . . . **CALL**

## Cassette Deck Specials



### Teac V-670 3-Head Stereo Cassette Deck

- Hear your actual recording as you are making it • 2-motor logic transport • Dolby B & C plus HX Pro extension for top quality recordings • Fine bias • Black finish

Our Low Price **\$249<sup>95</sup>** (TEA V670)

- Teac V-250**  
• Dolby B, auto stop, one-touch recording . . . **\$79<sup>95</sup>**
- Teac V-285CHX**  
• Dolby B/C & HX-Pro, bias fine tuning . . . **\$99<sup>95</sup>**
- Teac R-445**  
• Auto-reverse, dolo B/C, soft-touch . . . **\$124<sup>95</sup>**
- Teac R-455CHX**  
• Auto-reverse, dolo B/C & HX-Pro . . . **\$149<sup>95</sup>**
- Teac V-570**  
• 2-Motors, dolo B/C & HX-Pro, bias-adjust . . . **\$169<sup>95</sup>**
- Fastex X-26**  
• 4-Track cassette deck, 6-input channels . . . **\$449<sup>95</sup>**

## Double Cassette Decks



### Teac W-660R Double Auto-Reverse Cassette Deck

- High-speed dubbing • Dolby B and C noise reduction • Memory play/search/dubbing
- Real-time auto-reverse • Continuous play
- Full logic control • Black finish

Our Low Price **\$269<sup>95</sup>** (TEA W660R)

- Scott DD-660**  
• Dolby B, hi-speed dubbing, soft-touch . . . **\$99<sup>95</sup>**
- Teac W-370C**  
• Dolby B/C, continuous play, bias-adjust . . . **\$109<sup>95</sup>**
- Technics RS-TR155**  
• Dolby B, series play, leather-touch . . . **\$179<sup>95</sup>**
- Technics RS-TR255**  
• Dolby B & C, series play, leather touch . . . **\$189<sup>95</sup>**
- Teac W-450R**  
• Dolby B/C & HX-Pro, continuous play . . . **\$189<sup>95</sup>**
- Teac RS-TR355**  
• Twin auto-reverse, dolo B/C & HX-Pro . . . **\$269<sup>95</sup>**

## Home Speaker Specials



### Technics SB-L56 3-Way Linear Phase Speaker System

- Bass-reflex bookshelf loudspeakers • 10-inch woofer • 4-inch midrange • 2.5-inch tweeter
- Detachable front grill • 120 watts maximum input power

Our Low Price **\$129<sup>95</sup>** Pair (TEC SBL56)

- Technics SBL-36**  
• 10" 2-way bass-reflex speakers . . . pair **\$99<sup>95</sup>**
- Technics SBL-76**  
• 12" 3-way bass-reflex speakers . . . pair **\$149<sup>95</sup>**
- Pinnacle PMS+**  
• 5.25" 2-way, re-ventilated port . . . pair **\$149<sup>95</sup>**
- Technics SBL-96**  
• 15" 3-way bass-reflex speakers . . . pair **\$199<sup>95</sup>**
- Bose RM-2 RoomMate**  
• Amplified mini-speakers, black . . . pair **\$299<sup>95</sup>**
- Bose AM5 Acoustimass System**  
• Acoustimass subwoofer & two modules . . . **\$749<sup>95</sup>**

## Turntable Specials



### Technics SL-J33 Direct-Drive Programmable Turntable

- Quartz locked drive system • LP jacket size
- 8-step random access programming • Auto disc size selection • Record detector
- Accepts P-mount cartridge

Our Low Price **\$179<sup>95</sup>** (TEC SLJ33K)

- Scott PS-60C**  
• Semi-auto, belt drive, includes cartridge . . . **\$59<sup>95</sup>**
- Dual CS-2110A**  
• Semi-auto, belt drive, standard-mount . . . **\$79<sup>95</sup>**
- Technics SL8D-22K**  
• Semi-auto, belt drive, P-mount . . . **\$94<sup>95</sup>**
- Gemini DJ6-1300**  
• Manual, direct-drive, standard-mount . . . **\$169<sup>95</sup>**
- Gemini XL-1800Q**  
• Manual, direct drive, standard-mount . . . **\$299<sup>95</sup>**
- Dual CS-5000/X3MC**  
• Semi auto table with Ortolon cartridge . . . **\$449<sup>95</sup>**

## Phono Cartridges



### Shure V-15 Type V-MR Deluxe Micro Ridge Phono Cartridge

- Micro ridge stylus tip • Excellent trackability
- Dynamic stabilizer • Side-guard stylus protection • Duo-point alignment gauge • Top rolled design

Our Low Price **\$129<sup>95</sup>** (SHU V15-VMR)

- Stanton SOOAL**  
• Spherical stylus, standard mount . . . **\$19<sup>95</sup>**
- Technics EPCP-153S**  
• Spherical stylus, P-mount . . . **\$19<sup>95</sup>**
- Audio Technica AT-231LP**  
• Linear-contact, universal-mount . . . **\$39<sup>95</sup>**
- Shure M-111HE**  
• Hyperelliptical-stylus, standard mount . . . **\$49<sup>95</sup>**
- Stanton 680CEL**  
• Elliptical-stylus, standard-mount . . . **\$54<sup>95</sup>**
- Audio Technica AT-14OML**  
• Microline stylus, standard mount . . . **\$69<sup>95</sup>**

## Audio Add-Ons



### Terk FM-9500 Indoor FM Electronic Antenna

- Perfect for the apartment or office • Modern high tech style • 24-dB's of gain
- Omnidirectional pickup • LED display • One year warranty • Black finish

Our Low Price **\$39<sup>95</sup>** (TRK 9500)

- Audioquest Feet**  
• Sorbothane isolation feet . . . 4-Pack **\$34<sup>95</sup>**
- Memorex CP-8**  
• Universal programmable remote control . . . **\$69<sup>95</sup>**
- Terk 9600**  
• Electronic FM antenna, upto 30db gain . . . **\$79<sup>95</sup>**
- Parsec ARC**  
• AM/FM electronic antenna, upto 32db gain **\$149<sup>95</sup>**
- Russound SDA4**  
• Speaker switcher, upto 4 pairs with volume . . . **\$179<sup>95</sup>**
- Niles SVCA**  
• Speaker switcher, upto 4 pairs, 2-amps . . . **\$249<sup>95</sup>**

Copyright 1990 J&R Music World

CIRCLE NO. 39 ON READER SERVICE CARD

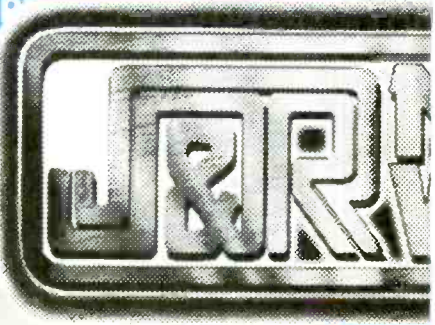
J&R Music World, Dept. SRO190, 59-50 Queens-Midtown Expressway, Maspeth, Queens, NY 11378



ORDER TOLL-FREE **1-800-221-8180** Outside U.S.A. Call: 1-718-417-3737  
 Mail Order Hours: Monday To Friday 9 AM to 8 PM, Saturday 9 AM to 6 PM, Sunday 10 AM to 4 PM  
 Dealer & Institutional Inquiries Call Toll-Free 1-800-221-3191 — In New York 1-718-417-3747







This Month's

Video Recorder Specials

**Panasonic PV-2900**  
**VHS HQ Video Cassette Recorder**  
 • On-screen display • 155-channel cable ready tuner • One-touch recording • 1-month/4-event timer • 38-function remote control • Audio/video muting system  
 Our Low Price **\$299<sup>95</sup>** (PAN PV2900)

**Samsung VR-3309**  
 • VHS 23-function remote control . . . **\$229<sup>95</sup>**

**RCA VR-290**  
 • 2-head VHS, on-screen programming . . . **\$249<sup>95</sup>**

**Panasonic PV-4920**  
 • 4-heads, bar-code, unified remote . . . **\$349<sup>95</sup>**

**General Electric VG-79080**  
 • 4-heads, MTS-tuner, 44-function remote **\$429<sup>95</sup>**

**RCA VR-640HF**  
 • SuperVHS, 4-heads, MTS/SAP tuner . . . **\$499<sup>95</sup>**

**JVC HRD-750U**  
 • 4-heads, Hi-Fi, MTS, on-screen, remote . . . **\$499<sup>95</sup>**

Video Recorder Specials

**Panasonic PV-4960**  
**4-Head Hi-Fi Video Cassette Recorder**  
 • Outstanding special effects • Omnisearch • Flying erase head • Synchro edit • 1-month/8-event programmable • Unified remote control  
 Our Low Price **\$499<sup>95</sup>** (PAN PV4960)

**Toshiba MP-200**  
 • Hi-Fi player, remote, headphone jack . . . **\$299<sup>95</sup>**

**Panasonic PV-4860**  
 • VHS Hi-Fi video recorder, 4-heads . . . **\$399<sup>95</sup>**

**Panasonic PV-54864**  
 • SuperVHS, 4-heads, MTS, Hi-Fi . . . **\$599<sup>95</sup>**

**RCA VR-695HF**  
 • SuperVHS, Hi-Fi, 4-heads, digital effects **\$699<sup>95</sup>**

**Toshiba SV-970**  
 • SuperVHS, Hi-Fi, 4-heads, digital effects . . . **CALL**

**JVC HRS-10000U**  
 • Pro SuperVHS, 4-heads, MTS, editing . . . **CALL**

Camcorders & Televisions

**Panasonic PV-460**  
**E.I.S. VHS HQ Camcorder**  
 • Electronic Image Stabilization • High-speed shutter (1/1000th, 1/500th, 1/250th sec.) • 10x power zoom with macro • Flying erase head • Auto date/time generator  
 Our Low Price **\$1099<sup>95</sup>** (PAN PV460)

**Samsung TB0570**  
 • Portable 5" B & W TV & AM/FM radio . . . **\$79<sup>95</sup>**

**Casio TV-810**  
 • 2" color LCD TV, built-in backlight . . . **\$149<sup>95</sup>**

**Sony KV-13TR20**  
 • 13" color TV/Monitor, remote, black . . . **\$299<sup>95</sup>**

**JVC GR-40U**  
 • VHS-C camcorder, digital superimposer **\$799<sup>95</sup>**

**Panasonic PV-500**  
 • VHS camcorder, flying erase head . . . **\$879<sup>95</sup>**

**Sony CCD-F70**  
 • 8mm camcorder, 4-page superimposer **CALL**

Video Add-Ons

**JVC JX-S900**  
**A/V Selector**  
 • 7-video inputs & outputs • 2-monitor outputs • 5-video on all input & output jacks • Remote control • Y/C separator circuit • Dual operation allows operation of 2-signal paths  
 Our Low Price **\$649<sup>95</sup>** (JVC JXS900)

**Unimat LX-750**  
 • 150-watt AC video light, 15ft cord . . . **\$49<sup>95</sup>**

**Recolor V-623**  
 • Stereo TV decoder, MTS/SAP & cable . . . **\$49<sup>95</sup>**

**Vidcraft Detailer 101**  
 • Image enhancer, spill-screen . . . **\$69<sup>95</sup>**

**JVC JX5-100**  
 • Audio/Video switcher, 4in and 2-out . . . **\$99<sup>95</sup>**

**Azden WM5-Pro**  
 • Wireless microphone for camcorders . . . **\$199<sup>95</sup>**

**Videonics Direct-Edit+**  
 • Home editing system with graphics . . . **CALL**

Car Stereo Specials

**Sherwood XR-2304**  
**Digital AM/FM Cassette Car Stereo**  
 • 18-PM/12-AM presets • Auto preset memory • Seek/scan tuning • Auto-reverse • 20-watts per channel • Bass & treble • Touch tone buttons • Fader control • DIN chassis  
 Our Low Price **\$128<sup>88</sup>** (SHE XR2304)

**Sherwood SCA-2100**  
 • 64-watts per channel car amplifier . . . **\$109<sup>95</sup>**

**Sherwood SCP-1002**  
 • 120-watts/channel amp, sub-bass EQ . . . **\$179<sup>95</sup>**

**Panasonic CA-H05**  
 • Removable AM/FM cassette car stereo **\$168<sup>88</sup>**

**Clarion 9770RT**  
 • Removable AM/FM cassette, doly NR **\$228<sup>88</sup>**

**Visonik Odin**  
 • 75-watts per channel power amplifier . . . **\$249<sup>95</sup>**

**Visonik Boltar**  
 • 200-watts per channel power amplifier **\$399<sup>95</sup>**

Phones/Answer Machines

**PhoneMate 7210**  
**Telephone Answering Machine**  
 • One touch operation • Message time/date stamp • Beepless remote • Remote turn-on • Digitally recorded greeting • Call screening • Toll-saver • Battery back-up  
 Our Low Price **\$85<sup>55</sup>** (PM 7210)

**Panasonic KXT-1000**  
 • Remote control answering machine . . . **\$55<sup>49</sup>**

**Code-A-Phone 2710**  
 • 10-function remote answering machine . . . **\$57<sup>77</sup>**

**Code-A-Phone 2690**  
 • Telephone & remote answering machine **\$108<sup>88</sup>**

**Panasonic KXT-2432**  
 • Phone, answer machine, speaker/phone **\$129<sup>95</sup>**

**AT&T 5310**  
 • Cordless phone, 99 memory and in-come **\$148<sup>88</sup>**

**PhoneMate 9750**  
 • 2-line answering machine, conference . . . **\$155<sup>49</sup>**

Compact Disc Specials

Mobile Fidelity Presents  
 Ultradisc  
 Featuring 24 Karat Gold Bonding

ORIGINAL MASTER RECORDING

**Darkside of The Moon**

**23<sup>99</sup>** Per CD

Also Available On Ultradisc  
 From Mobile Fidelity For 23.99 Per CD

- JAZZ SAMPLER: (MOB 501)
- CLASSICAL SAMPLER: (MOB 502)
- JOE JACKSON: Will Power (MOB 503)
- POWER & THE MAJESTY: Vol 1 (MOB 504)
- SUPERTRAMP: Crime Of The Century (MOB 505)
- DAVID GRISMAN: Hot Dawg (MOB 506)
- BLIND FAITH: Blind Faith (MOB 507)
- A VERY SPECIAL CHRISTMAS: (MOB 508)
- HUEY LEWIS & THE NEWS: Sports (MOB 509)
- JETHRO TULL: Thick As A Brick (MOB 510)
- THE POLICE: Synchronicity (MOB 511)
- THE MOODY BLUES: Days Of Future Past (MOB 512)
- STEELY DAN: Aja (MOB 515)
- ELTON JOHN: Madman Across The Water (MOB 516)
- PINK FLOYD: Meddle (MOB 518)
- CAT STEVENS: Tea For The Tillerman (MOB 519)
- DEF LEPPARD: Pyromania (MOB 520)
- JOHN KLEMMER: Touch (MOB 522)
- JETHRO TULL: Stand Up (MOB 524)
- JEFFERSON AIRPLANE: Crown Of Creation (MOB 523)

Calculators & Databanks

**Psion Organizer LZ**  
**32K Pocket Computer**  
 • Incredible hand-held organizer • Phone, address, & notebook • Diary program • Alarm clock & calendar • Calculator • Unlimited memory capabilities with optional accessories  
 Our Low Price **\$229<sup>95</sup>** (PSN LZ)

**Royal CBC-80**  
 • Solar powered checkbook calculator . . . **\$16<sup>95</sup>**

**Selectronics 8000C**  
 • 8K databank, 20-character LCD display **\$18<sup>88</sup>**

**Hewlett Packard HP-14B**  
 • Financial calculator, 110-functions . . . **\$59<sup>95</sup>**

**Casio FX-7500G**  
 • Folding graphics calculator, 8-line display **\$84<sup>95</sup>**

**Sharp Wizard**  
 • Electronic organizer, 32K memory . . . **\$229<sup>95</sup>**

**Alari Portfolio**  
 • 128K pocket computer/databank . . . **\$399<sup>95</sup>**

Spellers & Translators

**Franklin WM-1100 "Wordmaster"**  
**Electronic Dictionary**  
 • Spells 80K words • Thesaurus with over 35K words & 470K synonyms • 3-line, 80-character display • Includes Hangman, Anagrams, Jumble, Deduction, Dice & Scrobbie  
 Our Low Price **\$109<sup>95</sup>** (FRA WM1100)

**Selectronics WF-220**  
 • 100K word vocabulary word checker . . . **\$44<sup>95</sup>**

**Seiko TR-1400**  
 • Spanish/English 80K word translator . . . **\$69<sup>95</sup>**

**Franklin PT-44**  
 • 80K word spell checker, phonetic spelling **\$79<sup>95</sup>**

**Selectronics WF-225**  
 • Compact-size 100K word spell checker . . . **\$89<sup>95</sup>**

**Hexaglot**  
 • Translates 6-languages, 6800-words . . . **\$119<sup>95</sup>**

**Franklin WM-4000**  
 • 83K word spell checker & thesaurus . . . **\$299<sup>95</sup>**

Typewriters/Word Processors

**Panasonic KX-W1000**  
**Portable Word Processor**  
 • 50K memory • 80 X 14 adjustable LCD • 63K word spell-check • Thesaurus with 45K words & 500K synonyms • 353K 3.5" disk drive • Mail-merge • Spreadsheet  
 Our Low Price **\$449<sup>95</sup>** (PAN KXW1000)

**Panasonic KX-8320**  
 • Typewriter, 3300-character text memory **\$134<sup>95</sup>**

**Smith Corona XD-4600**  
 • Typewriter, 7K text memory, 50K speller **\$169<sup>95</sup>**

**Brother AX-26**  
 • Typewriter, 12K memory, 60K speller . . . **\$229<sup>95</sup>**

**Smith Corona PWP-2000**  
 • Portable word processor, mail merge . . . **\$359<sup>95</sup>**

**Brother WP-75**  
 • Word processor, 70K speller, printer **\$499<sup>95</sup>**

**Smith Corona PWP-7000LT**  
 • Laptop word processor with printer . . . **\$579<sup>95</sup>**

Facsimile Machines

**Canon Faxphone 23**  
**Personal Facsimile Machine**  
 • Auto paper cutter • 80 auto speed-dialing numbers • 15-sheet auto document feeder • G-3 compatibility • 12-seconds per page • Memory reception up to 7-pages  
 Our Low Price **\$959<sup>95</sup>** (CAN FAX23)

**Murata M-900**  
 • G-3, 5-page auto document feeder . . . **\$549<sup>95</sup>**

**Sharp UX-110**  
 • G-3, 5-page auto feeder, 16-grey tones **\$599<sup>95</sup>**

**Epson FAX-1000**  
 • G-3, 8-grey tones, auto paper cutter . . . **\$759<sup>95</sup>**

**Panasonic KXF-120**  
 • G-2 & 3, 5-page feeder, 110ft memory **\$799<sup>95</sup>**

**Brother FAX-200**  
 • G-3, auto paper cutter, 5-page feeder **\$849<sup>95</sup>**

**Canon FAX-35**  
 • G-3, 64-grey tones, 5-page feeder . . . **\$999<sup>95</sup>**



ORDER TOLL-FREE **1-800-221-8180**  
 Mail Order Hours: Monday To Friday 8 AM to 8 PM, Saturday 9 AM to 6 PM, Sunday 10 AM to 4 PM  
 Dealer & Institutional Inquiries Call Toll-Free 1-800-221-3191 — In New York 1-718-417-3747  
 J&R Music World, Dept. SRO190, 59-50 Queens-Midtown Expressway, Maspeth, Queens, NY 11378

Outside U.S.A. Call:  
 1-718-417-3737





# MUSIC WORLD

## Super Specials!

### VHS Video Movies

MGM/UA  
"CONSUMER'S CHOICE"



Your Choice **18<sup>95</sup> Each**

#### Also Available...

- Blackboard Jungle (1955 Sidney Poitier) • Boys Town (1938 Spencer Tracy) • Dr. Jekyll and Mr. Hyde (1932 Fredric March) • How to Murder Your Wife (1965 Jack Lemmon) • Julius Caesar (1953 Marlon Brando) • The Killing (1956 Sterling Hayden) • King Solomon's Mines (1950 Stewart Granger) • Lust For Life (1956 Kirk Douglas) • Moulin Rouge (1952 Jose Ferrer) • Sweet Bird of Youth (1961 Paul Newman)

### Equalizer Specials



#### ADC SS-525X

- Custom tailor your sound the professional way
- Automatic analyzer equalizes room for precise, flat response
- 12-bands/channel
- Microphone
- Pink noise
- Wireless remote

Our Low Price **\$359<sup>95</sup>** (ADC SS525X)

- Technics SH-8017 • 7 bands per channel, input selector . . . \$64<sup>95</sup>
- AudioSource EQ-811 • 10-bands/ch. LED spectrum analyzer . . . \$99<sup>95</sup>
- ADC SS-100SL • 10-bands/ch. real time analyzer display . . . \$99<sup>95</sup>
- Technics SH-8058 • 7-bands/ch. 6-preset curve memories . . . \$179<sup>95</sup>
- ADC SS-325X • 12-bands/ch. real-time analyzer . . . \$279<sup>95</sup>
- AudioSource EQ-10 • Computerized remote control equalizer . . . \$349<sup>95</sup>

### DJ Equipment



#### Atus AM100

- Inputs for two turntables, two line level inputs
- Mic input
- Talkover mic switch
- Monitor system for cueing
- Master bass & treble controls
- VU meters display output

Our Low Price **\$99<sup>95</sup>** (ATU AM100)

- Gemini Flashformer • Creates scratch effects for records . . . \$89<sup>95</sup>
- Gemini MX-3300 • Mixer, 3-pano inputs, 19" rack mount . . . \$139<sup>95</sup>
- Gemini MB-360 • Speaker, 12" woofer & 4" X 10" horn each . . . \$149<sup>95</sup>
- Atus AM-300E • Mixer/Preamp. w/delay, rack-mount . . . \$199<sup>95</sup>
- Gemini MX-5400SE • Mixer with sound effects, rack-mount . . . \$209<sup>95</sup>
- We Carry A Complete Selection of Disco Lights . . . \$CALL

### Portable CD Players



#### Technics SL-XP6

- Ultra compact
- 4X oversampling
- 3-way power supply
- Includes rechargeable Ni-Cad batteries
- 3 play modes
- Includes headphones & carrying case

Our Low Price **\$259<sup>95</sup>** (TEC SLXP6)

- Sony D-2 • Hi-speed music search, 3-way repeat . . . \$159<sup>95</sup>
- Technics SL-XP2 • 4X sampling, wired remote, XBS . . . \$189<sup>95</sup>
- Toshiba XR-9437 • AM/FM/CD player, rechargeable . . . \$229<sup>95</sup>
- Sony D-15 • 22-track programming, rechargeable . . . \$229<sup>95</sup>
- Sony DT-4 • AM/FM/CD player, 16-track programming . . . \$239<sup>95</sup>
- Toshiba XR-9458 • 16-track programming, rechargeable . . . \$249<sup>95</sup>

### Audio Accessories



#### Recoton W-100

- Eliminate the need for room-to-room wires
- Enjoy true stereo anywhere you choose
- Speakers plug into convenient wall AC outlets anywhere

Our Low Price **\$168<sup>95</sup>** (REC W100)

- TDK HD-01 • Portable cassette head demagnetizer . . . \$9<sup>95</sup>
- Discwasher CD • CD radial cleaner and cleaning fluid . . . \$9<sup>95</sup>
- Recoton CD-20 • Portable CD player to car stereo adaptor . . . \$14<sup>88</sup>
- Discwasher Diskit • Record care system with organizer . . . \$22<sup>88</sup>
- AudioSource LLC-1 • Compact disc player lens cleaner . . . \$24<sup>95</sup>
- Sony RM-P700E • Universal A/V programmable remote . . . \$68<sup>88</sup>

### Headphone Specials



#### Sennheiser HD-50

- Digital ready
- Mini size
- Ultra-lightweight dynamic open-air design
- Frequency response: 18-20kHz
- 4-foot cable with mini-plug & 1/4" adaptor

Our Low Price **\$299<sup>95</sup>** (SEN HD50)

- Azden DM-90 • Digital-ready monitor design . . . \$59<sup>95</sup>
- Sony MDR-CD6 • Sealed ear design, digital-ready . . . \$79<sup>95</sup>
- Koss JCK/200 • Cordless closed ear, digital-ready . . . \$108<sup>88</sup>
- Sony MDR-IF5K • Cordless digital-ready, uni-match plug . . . \$158<sup>88</sup>
- Beyer DT-990 • Audiophile open design, digital-ready . . . \$189<sup>95</sup>
- Beyer IR5-690 • Cordless monitor design, digital-ready . . . \$359<sup>95</sup>

### Blank Audio/Video Tape



#### Maxell XLII-90

- Purchase one Maxell XLII-90 high bias tape & for the price of a second XLII-90, receive an XLII-100 instead
- The new tape is an improved formula & longer length

Our Low Price **\$3<sup>88</sup>** (MAX XLII90/100)

- Denon HD6/100 • High bias 100-minute cassettes . . . 2-Pack \$3<sup>99</sup>
- TDK SAX-90 • High bias 90-minute cassettes . . . 10-Pack \$19<sup>95</sup>
- Sony UXPRO-90 • High bias 90-minute cassettes . . . 10-Pack \$21<sup>88</sup>
- Maxell XLII-100 • High bias 100-minute cassette . . . 10-Pack \$25<sup>88</sup>
- Maxell T-120HGX GOLD • High grade video tape . . . 10-Pack \$35<sup>88</sup>
- Scotch T-160EG+ • High grade 8 hour video tape . . . 10-Pack \$44<sup>44</sup>

### Musical Instruments



#### Casio DH-100

- Amazing "Digital woodwind" performance with 6-preset tones
- Midi output
- Portamento effect
- Built-in speaker
- Breath sensitive
- Key response
- Requires 5 AA batteries

Our Low Price **\$88<sup>95</sup>** (CAS DK100)

- Yamaha DD-5 • Digital drum set, 4-touch sensitive pads . . . \$88<sup>88</sup>
- Yamaha PSS-480 • 49 mid-size keys, 100 sounds & rhythms . . . \$88<sup>88</sup>
- Yamaha PSS-280 • 49 mid-size keys, 100 preset voices . . . \$99<sup>95</sup>
- Casio SK-100 • 49 mid-size keys, program sampling . . . \$99<sup>95</sup>
- Casio MT-520 • 49 mid-size keys, drum pad, 12-voices . . . \$118<sup>88</sup>
- Yamaha PSS-380 • 49 mid-size keys, 100 voices & rhythms . . . \$129<sup>95</sup>

### Personal Stereos



#### Sony WM-AF604

- AM/FM stereo tuner
- Mega-bass system
- Auto-reverse
- Dolby B
- Includes lightweight headphones
- Rechargeable battery and charger
- Requires 2 X AA batteries

Our Low Price **\$129<sup>95</sup>** (SON WMAF604)

- Toshiba KT-4019 • AM/FM cassette, automatic shut-off . . . \$29<sup>95</sup>
- Toshiba RP-33 • Super-small, AM/FM stereo radio . . . \$49<sup>95</sup>
- Panasonic RQV-150 • AM/FM auto-rev cassette, 3-band EQ . . . \$49<sup>95</sup>
- Sony WMA-53 • Water-resistant auto-rev cassette player . . . \$59<sup>95</sup>
- Panasonic RQV-175 • AM/FM auto-rev cassette, XBS, dolby . . . \$89<sup>95</sup>
- Sony WMF-73 • Water-resistant AM/FM cassette, dolby . . . \$99<sup>95</sup>

### Portable Audio



#### Sony CFS-D960

- Water resistant
- Variable mega-bass
- Auto-reverse playback
- Music search
- Auto shut off
- Includes AC adaptor
- Requires 6 X D batteries

Our Low Price **\$129<sup>95</sup>** (SON CFS960)

- Panasonic RXFS-400 • Compact-size AM/FM cassette, auto-stop . . . \$49<sup>95</sup>
- Panasonic RXCT-800 • 3-Piece AM/FM dual-cassette . . . \$89<sup>95</sup>
- Sony CFD-60 • AM/FM cassette, CD-player, dubbing . . . \$179<sup>95</sup>
- JVC PCV-77 • 3-Piece AM/FM dual-cassette, Hyperbass . . . \$199<sup>95</sup>
- Panasonic RX-DT50 • AM/FM dual-cassette, CD-player . . . \$229<sup>95</sup>
- JVC RCX-510 • AM/FM cassette, CD-player, Hyperbass . . . \$299<sup>95</sup>



### FREE CATALOGUE

For a FREE catalogue call toll-free 800-426-6027, or Write: J&R Music World Department SRO190 59-50 Queens-Midtown Expressway Maspeth, NY 11378.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Copyright 1990 J&R Music World

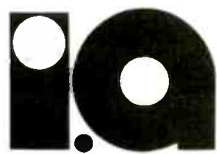
CIRCLE NO. 39 ON READER SERVICE CARD

TO ORDER BY MAIL: SEND MONEY ORDER, CERTIFIED OR CASHIER'S CHECK, MASTERCARD, VISA, AMERICAN EXPRESS or DISCOVER CARD (include Interbank No. expiration date and signature), TO: J&R MUSIC WORLD, DEPT. SRO190, 59-50 QUEENS-MIDTOWN EXPRESSWAY, MASPETH, QUEENS, NY 11378. Personal and business checks must clear our Authorization Center, before processing. Shipping, Handling & Insurance Charge is 5% of Total Order with a \$4.95 minimum. (Canadian Orders Add 15% Shipping, with a \$9.95 minimum charge.) For shipments by air, please double these charges. \$25 MINIMUM ORDER. DO NOT SEND CASH. SORRY, NO C.O.D.'s. NEW YORK RESIDENTS PLEASE ADD SALES TAX. ALL MERCHANDISE SHIPPED BRAND NEW, FACTORY FRESH, AND 100% GUARANTEED.





SAVE MONEY, TIME AND FREIGHT ON FAMOUS BRAND STEREO EQUIPMENT



**Illinois audio** (800) 621-8042 / (312) 664-0020  
12 E. DELAWARE PLACE • CHICAGO, IL 60611

**LOUDSPEAKERS**

**TECHNICS SBL-36**  
Powerful  
Loudspeaker System  
• Linear Phase 2-Way  
System • Large Diam. 10"  
Woofer • Anti-resonance  
cabinet • Attractive  
Woodgrain Finish  
**CALL FOR PRICE**

**E.P.I. CD55**  
3-Way Speaker  
System

• 12" Bass Driver • Wide  
Frequency Response  
• Constant Dispersion  
Design • Specially De-  
signed High Efficiency  
Cabinet  
List \$250.00 ea.  
**SALE: \$99.00 ea.**

**TECHNICS SBS407**  
3-Way Speaker  
System

• 12" Woofer • Horn Super  
Tweeter • High Heat Resis-  
tance • Efficiency Bass  
Reflex Design • Heavy  
Duty Anti-Resonance  
Cabinet  
**CALL FOR PRICE**

**JENSEN 3120**

• 12" 3-Way 12" low  
frequency driver • 150  
Watts peak power! 60  
watts continuous  
• Barton hickory finish  
List \$139.95 ea.  
**SALE: \$74.95 ea.**

**PORTABLES**

**SONY WM-AF57**  
AM/FM Stereo Radio  
Cassette Player

• Dolby B NR • Auto  
reverse with direction  
and mode selectors  
• Variable Mega Bass  
• Ultra-light MDR  
headphones  
List \$94.95  
**SALE: \$62.95**

**SONY WM-AF604**  
Sony Super Walkman

• AM/FM Stereo Cassette  
Player • X-tra Small Size  
• Auto Reverse • Quick  
Charger • Dolby B NR  
List \$169.95  
**SALE: \$116.95**

**SONY D-25**  
Discman Portable  
CD Player

• Ultra Small & Light Wt.  
• 21-Track Random Music-  
Sensor • 4-Repeat Modes  
• Ultrinear Converter  
w/Digital Filter  
**CALL FOR PRICE**

**AUTO**

**SONY ES-S92**

6" x 9" 2-Way Car Speakers  
• Co-Axial • Hi-Power • Oval Shape  
• 80 Watts Max Power Handling  
List \$79.95 **SALE: \$39.95**



**SHERWOOD CRD350**  
Car Stereo with Cassette Deck

• AM Stereo/FM Stereo Receiver • Full Logic  
Controlled • Dolby B/C NR • Auto Re-  
verse • Built-In Amp w/Balance & Fader  
• Local/Dist. Switch • Preset Scan • Clock  
• Security Cover  
List \$329.95 **SALE: \$179.00**

**CASSETTE DECKS**



**TEAC V-285CHX**  
Stereo Cassette Deck

• Dolby B & C & HX PRO NR • Bias Fine Tuning  
• Full Auto Stop Mech. • Metal Tape Com-  
patible • 3-Pos. Tape Select • 3-Digit Tape  
Counter  
List \$149.95 **SALE: \$99.95**



**TEAC R455X**  
Auto Reverse Cassette Deck

• Bi-Directional record playback • Auto  
reverse • Repeat • Dolby B & C NR • HX Pro  
• Timer Rec. Play  
List \$219.95 **SALE: \$139.95**



**TECHNICS RS-TR555**  
Double Quick Auto Reverse  
Cassette Deck

• Auto Reverse on both tape decks • 24 hour  
contin. playback • Hi speed editing • Synchro  
start & stop & mute • Dolby<sup>TM</sup> HX Pro  
**CALL FOR PRICE**



**TEAC W660R**  
Double Auto Reverse  
Cassette Deck

• Dolby B & C • One touch high speed  
dubbing • Continuous Play • Memory  
play/search dubbing • Full logic control  
List \$519.00 **SALE: \$289.95**

**RECEIVERS**



**TECHNICS SA-160**  
Quartz Synthesizer  
AM/FM Stereo Receiver

• 80 Watt (40x2) • 24 preset station file  
• 5 Band Graphic Equalizer  
List \$209.95 **SALE: \$147.95**



**TECHNICS SAR377**  
Quartz Synthesized  
Remote Controlled Receiver

• AM / FM Stereo Receiver • 160 Watts  
(80 RMSx2) • Full Remote Control • 24  
Presets • 7-Band EQ w/ Spectrum Analyzer  
• 4 Aud. Inputs plus 2 Aud. Vid. Inputs  
• Station File  
**CALL FOR PRICE**



**JVC RX-701VBK**  
Surround Sound Receiver

• AM / FM Stereo Digital Receiver • 160  
Watts (80x2) • Dolby Surround Sound  
• Built-In Synthesizer-Tuner • 40 Memory  
Presets • 7-Band EQ • 2 PR. Speaker  
Connections  
**CALL FOR PRICE**



**JVC RX-901VBK**  
Remote Controlled Receiver

• 200 Watts (100x2) • Dolby<sup>TM</sup> Pro-logic  
with adjustable digital delay • 3 Video In-  
puts • Programm. 7 band EQ • Dig. Synth.  
Tuner • 80 presets • Preset Scan  
**CALL FOR PRICE**

**CD PLAYERS**



**SHERWOOD CD-1162R**  
Remote Control Compact Disc Player

• Full function remote control with 10 key  
pad • 3 beam laser • 2X oversampling  
• 4 way repeat function  
List \$269.95 **SALE: \$129.95**



**TECHNICS SL-P555**  
Programmable Compact Disc  
Player with Remote Control

• 4X oversampling • 18 bit • 4-DACS (2 per  
channel) • Peak Level Search • Optical  
Digital Output • 20 track programming  
• 31 Key Remote w/ volume  
List \$409.95 **SALE: \$279.95**



**TEAC PD-700M**  
6-Disc CD Changer with Remote

• 4X oversampling • 16 bits • 2 DA Convertors  
• 32 track random programming  
• 10 key remote  
List \$499.95 **SALE: \$249.95**



**TECHNICS SL-PC20**  
Rotary Compact Disc Changer

• Change discs during play with top-loading,  
5-disc rotary design • Completely pro-  
grammable • repeat and random play for 5  
discs • Multi-function, 25 key wireless  
remote control • Quadruple oversampling  
• 20 step random access programming  
**CALL FOR PRICE**



**JVCXLM701BK**  
CD Multi-Changer

• 6+1 CD Changers player • Remote  
control • Random Access program up to  
32 steps • 18 bit DAC • 4 X oversamplings  
• Digital Filter  
**CALL FOR PRICE**

**TURNTABLES**

**TECHNICS SLJ33**  
Programmable  
Quartz Linear  
Tracking Turntable

• 8-Band random pro-  
gramming • Auto high  
speed listing • Remote  
control capable • 14P  
cart. connector system  
**CALL FOR PRICE**

**TECHNICS SLL25**  
Fully Automatic  
Linear Tracking  
Turntable

• Remote control capable  
• Repeat function  
• Front panel operation  
• Anti-vibration  
construction  
**CALL FOR PRICE**

**DUAL 503-1**  
Top Class, Audiophile  
Semi-Automatic  
Turntable

• Belt driven • Low  
resonance anti-vibration  
design • Electronic speed  
control • Auto switch off  
• Gimbal mount low mass tone arm  
List \$250.00 **SALE: \$129.95**

**HEADPHONES**

**KOSS PRO/450**

• Sound Isolating • Dual  
element dynamic driver  
• Precision performance  
• Perfect for digital music  
List \$175.00 **SALE: \$138.00**

**SENNHEISER HD480**

• Digital • Open Air Design  
• CD Perfect  
List \$99.00 **SALE: \$69.95**

**SONY MDR CD6**

Adjustable • Open Air  
• Digital Ready  
List \$119.95 **SALE: \$79.00**

**AUDIO TAPE**

**MAXELL XLII-100**

• 100 minutes perfect for  
CD recording • Improved  
performance hi-bias  
10 for **\$24.95**

**SONY SR-90**

Top of the line metal  
cassette tape  
10 for **\$20.00**

**TDK MA-90**

• Metal alloy cassette  
• Hi-bias  
• Hi coercivity  
10 for **\$22.00**

**MAXELL MX-90**

Metallaxial 90 min. cassette  
10 for **\$28.95**

**CARTRIDGES**

**SHURE M111HE**

• Precision crafted hyper-  
leptical diamond tip  
• Dynamic stabilizer  
• Side guard protector  
List \$149.95 **SALE: \$49.95**

**AT 422LP**

Dual Magnet • Plug-In  
Connector • Linear Contact  
Diamond Stylus<sup>TM</sup>  
List \$125.00 **SALE: \$49.95**

**SHURE V15VMR**

Ultra Accurate Tracking  
• Dynamic Stabilizer • Side-  
guard Protection  
List \$275.00 **SALE: \$129.95**

**Illinois audio**  
12 E. Delaware Pl., Chicago 60611

16 YEARS OF MEETING THE NATION'S STEREO NEEDS WITH  
THE ABSOLUTE BEST PRICES ON TOP NAME NATIONAL BRANDS  
Call Mon. thru Sat. 10 to 5 (312) 664-0020 • 1 (800) 621-8042



Prices in this ad are for mail-order only.  
Freight charges not included in prices. All  
merchandise shipped brand new, factory  
fresh with full warranty. Not responsible for  
typographical errors.



**NOTE:** This is just a partial listing of our extensive  
inventory, please call for quotes on additional items  
or to request a free price list.



*Discs and tapes reviewed by Robert Ackart, Richard Freed, David Hall, Stoddard Lincoln, Eric Salzman, and David Patrick Stearns*

**BEETHOVEN: *Symphony No. 5, in C Minor, Op. 67; Fidelio Overture, Op. 72b; Leonore Overture No. 3, Op. 72a.*** Royal Philharmonic Orchestra. André Previn cond. RCA © 7894-1-RC. © 7894-4-RC. © 7894-2-RC (57 min).

Performance: *High-gloss*  
Recording: *Very good*

If Roger Norrington or Carlos Kleiber are too strong for your taste in the Beethoven Fifth, André Previn's well-groomed performance here may be more to your liking. His reading is solid and unfussy, somewhat in the Felix Weingartner mold. The same holds for the two overtures, though I miss the kind of kinetic power that made Toscanini's *Leonore* No. 3 linger in the memory. What is most excellent in these performances is the keen response of the Royal Philharmonic Orchestra players, especially with regard to niceties of balance. The horns acquit themselves most impressively in the final movement of the symphony and in the *Leonore* Overture's last pages. The recorded sound is suitably powerful and full-bodied throughout. *D.H.*

**BIZET: *Carmen.*** Jessye Norman (soprano), Carmen; Mirella Freni (soprano), Micaela; Neil Shicoff (tenor), Don José; Simon Estes (bass), Escamillo; Jean-Philippe Courtis (bass), Zuniga; Ghylaine Raphanel (soprano), Frasquita; Jean Rigby (mezzo-soprano), Mercedes; others. Choeurs et Maîtrise de Radio France; Orchestre National de France, Seiji Ozawa cond. PHILIPS © 422 366-2 three CD's (180 min).

Performance: *Disappointing*  
Recording: *Satisfactory*

This is an accurately achieved if often mannered *Carmen* without the pulse of life that makes a first-rate production unforgettable. The difficulty is that it is a closely studied performance—so studied, indeed, that you become conscious of the effects that are strived for but not realized.

Perhaps, as with *Hamlet*, there can

EXPLANATION OF SYMBOLS:

- = DIGITALLY RECORDED LP
- Ⓢ = TAPE CASSETTE
- Ⓢ = COMPACT DISC (TIMINGS ARE TO NEAREST MINUTE)

A SATIE CHAMPION



Anne Queffélec

**E**RIK SATIE'S piano music has been well served in recordings. Aldo Ciccolini has rerecorded all of it on six Angel compact discs (with Gabriel Tacchino joining in for the four-hand works), and France Clidat's three-disc survey in a very low-priced Pantheon box was a lovely surprise a few years ago. Anne Queffélec, however, on a generously filled new CD from Virgin Classics, strikes me as Satie's most persuasive keyboard champion so far. More clearly than any other pianist I've heard in this material, she makes the case for Satie as a great continuator of the French keyboard tradition rather than the mischievous eccentric that he made himself out to be.

In large part, of course, the impression Queffélec conveys comes in terms of reminders of Satie's influence on his contemporaries, his pupils, and still other French composers who were simply aware of his music. There is Poulenc in the *Gnossiennes* and *Je te veux*, there is Debussy in several pieces, and there are near-echoes of Rameau and Couperin here and there as well as Chabrier and even our own Gottschalk. Most of all, there is a great deal of music that is provocative in the best sense—not as puns and pranks alone but frequently

touching on a surprising level, a wit that shows warmth of heart, tenderness that does not feel obliged to lampoon itself, and always the most elegant sense of proportion.

Queffélec, whatever her other repertoire specialties, was surely born to play Satie. The sonic focus is a little more insistently close up and reverberant than would be ideal, but it conveys the coloring and the remarkably *live* quality of her playing quite effectively. And—imagine!—the *Gymnopédies* are *not* placed first on the disc but turn up more effectively in the middle of the program, whose imaginative layout adds significantly to the pleasure of taking it all in at a single sitting. Virgin has also provided thorough indexing for all the multisection works. *Richard Freed*

**SATIE: *Six Gnossiennes; Véritables préludes flasques (pour un chien); Vieux séquias et vieilles cuirasses; Chapitres tournés en tous sens; Trois Gymnopédies; Embryons desséchés; Je te veux; Sonatine bureaucratique; Heures séculaires et instantanées; Le Piccadilly—Marche; Avant-dernières pensées; Sports et divertissements.*** Anne Queffélec (piano). VIRGIN © VC7 90754-2 (75 min).

VIRGIN CLASSICS

never be a perfect *Carmen*, but I do not feel that the title role is the right one for Jessye Norman. While her rich, opulent voice encompasses the music easily and very often beautifully, I remain unconvinced of what her *Carmen* is about dramatically. A case in point is the *Habanera*, sung so softly and so slowly and with such artificial inflection that its effect is diffused; what should be the protagonist's electrifying entrance seems undramatic and rather arch. This quality of archness is evident, too, in Norman's reading of the spoken lines (the original *opéra comique* version is used). Again, in Act II, her Gypsy



Gidon Kremer: *glasnost*

Dance is so understated that it lacks interest, and her spoken lines to Don José, in beautifully articulated French, have a finishing-school polish and insouciance. Her *Carmen* breathes truer life in the Card Scene and in Act IV, but by then I no longer cared.

Only Mirella Freni truly captures the role assigned her and has the style to bring it to life. If her voice is now a bit too mature to express Micaela's girliness, Freni nonetheless has a sure sense of what she is about and of how to create character with straightforward simplicity. There is the same quality of honesty in Neil Shicoff's Don José, a delineation that has much to recommend it. But why does this lyric tenor of medium vocal weight, who can cope effectively with the Flower Song, assume that the big aria is the entire role? In moments of jealous passion and anger he sounds merely petulant, his voice strained and unattractive. I suspect that his shortcomings here are the product not only of his voice size but also, and perhaps mostly, of his temperament.

Simon Estes, as Escamillo, sings with

a rich, full tone, but he has considerable problems with French pronunciation and, like Norman and Shicoff, lacks an element essential to the success of this opera—a sense of humor. *Carmen* calls for a certain lightness of touch, even in the fourth act; without it the music and onstage doings become earthbound, which is the case here. The remaining members of the cast are more than adequate, however, and the quintet in Act II is a highlight of the album.

Seiji Ozawa conducts with the care and polish typical of his work, but without the involvement that made his recent recording of Strauss's *Elektra* so exciting. His dynamics are frequently exaggerated, at least to my ear: now barely audible, then suddenly full *forte*. Both the choruses and the orchestra, however, respond with precision and enthusiasm, which makes for moments of real musical beauty. Unhappily they are not sufficient to redeem this recording as a whole. *R.A.*

**BRUCKNER: *Symphony No. 8, in C Minor*** (see Best of the Month, page 103)

**DVOŘÁK: *Violin Concerto in A Minor, Op. 53; Romance in F Minor, Op. 11; Carnival Overture, Op. 92***. Midori (violin); New York Philharmonic, Zubin Mehta cond. CBS © MT 44923, © MK 44923 (53 min).

Performance: *Spirited*  
Recording: *Excellent*

Seventeen-year-old Japanese violinist Midori has heretofore been represented only by a couple of Philips studio recordings, one of Bach and Vivaldi, the other of the Paganini D Major Concerto and Tchaikovsky's *Sérénade mélancholique* and *Valse-scherzo*. With her switch to CBS, we get a chance to hear her in a live recording playing some big-scale nineteenth-century works. Compared with Kyung-Wha Chung's recent Angel recording of the Dvořák concerto and romance, Midori takes a decidedly more extroverted view of both works. Her playing of the concerto's first movement is volatile and brilliant. The slow movement is executed with great purity of tone but a certain lack of emotional depth, and the finale is taken at a fast clip, with virtuosity to burn. As for the romance, I find her approach to the music cooler, and her pacing somewhat faster than Chung's. Zubin Mehta, like Riccardo Muti for Chung, provides orchestral support that's tailor-made for the performance style of the soloist.

The familiar *Carnival Overture*, which gets no more than a smart run-through at the end of the program, seems tacked on simply to give the buyer more music for the money. The sound is good and well balanced in all three works. *D.H.*

**GERSHWIN: *Rhapsody in Blue*** (see STRAVINSKY)

**GUBAIDULINA: *Offertorium (Violin Concerto)***. Gidon Kremer (violin); Boston Symphony Orchestra, Charles Dutoit cond. *Hommage à T. S. Eliot*. Christine Whittlesey (soprano); Gidon Kremer, Isabelle van Keulen (violin); Tabea Zimmermann (viola); David Geringas (cello); Alois Posch (double-bass); Eduard Brunner (clarinet); Klaus Thunemann (bassoon); Radovan Vlaković (horn). DEUTSCHE GRAMMOPHON © 427 336-2 (69 min).

Performance: *Committed, eloquent*  
Recording: *Superb*

Sofia Gubaidulina (born 1931) was one of the most interesting Soviet composers discovered by the audiences at the "Making Music Together" festival put together by Sarah Caldwell in Boston two years ago. This is the first recording of any of her music to come my way, and it presents her in the very strongest light. The *Offertorium* is a violin concerto composed for Gidon Kremer ten years ago. The significance—or, at least, partial significance—of the title becomes apparent at once in the opening of the work, a reference to the theme by Frederick the Great that became the basis for Bach's *Musical Offering*. The orchestral setting in the style of Webern (who orchestrated the *Ricercare a 6* from that Bach work) serves, according to Gubaidulina as quoted in Steven Ledbetter's brief but comprehensive note, "to unite the two personalities who have produced . . . the greatest impression on me." The format is a long single movement whose three continuous sections comprise variations in which the theme is reduced, eventually to a single note, and then reconstituted in a thoroughly different manner, suggesting in its stillness and spirituality a different—religious—connotation for the work's title.

*Hommage à T. S. Eliot* was also composed for Kremer, or at his suggestion, under a commission from the Philharmonie in Cologne in 1987. Gubaidulina had read Eliot's *Four Quartets* the previous summer and found that work "shattering." Her *Hommage*, for soprano and instrumental octet, is about the same length as the violin concerto but is in seven clearly defined movements, with Eliot's words actually sung (in English) in three of them. Strings alone play the first movement, winds alone the second, and the soprano sings unaccompanied in the third. Only in the fifth movement do all nine performers take part. As in the concerto, there are rich, sober sonorities evocative of Russian church music side by side with unmistakably contemporary devices. More striking than any of the specific devices is the originality with which all the materials are used, indicating a highly developed personal style. The little cadenza for the horn just before the soprano's first (unaccompanied) number is one of the numerous simple but imaginative touches that make an immediate



**AUTHORIZED DEALER**  
**PROTON BOSE JBL**  
 ALLISON ACOUSTICS TEAC SHARP  
**TOSHIBA** KRISTON FOSTEX A  
**SONY** THORENS DCI  
 CELESTION  
 ORKON rector research  
 Seattle Sound audiolab  
**MAGNAVOX harman/kardon**

# 6th AVENUE

**ELECTRONICS CITY, INC.** YOUR AUDIO/VIDEO ALTERNATIVE!

**MAIL ORDER CALLS (201) 489-1204**  
**MAIL ORDER HOURS**  
 MON-SAT 10:00-7:00  
**RETAIL HOURS**  
 NEW YORK: MON-SAT 10:00-6:30  
 SUN 11:00-5:00  
 NEW JERSEY: MON-SAT 10:00-9:00

**TAKE ADVANTAGE OF OUR NEXT DAY DELIVERY**

## HOME AUDIO CENTER

### SPEAKERS

#### BOSE 2.2 \$196

- 2 WAY BOOKSHELF
- HIGH POWER HANDLING
- BEST RATED SPEAKER
- STEREO EVERYWHERE

**PRICE PER PAIR**

DESIGN ACOUSTICS PS-10	336
ADVENT LEGACY	336
ADVENT BABY II	CALL
ALLISON CL145	348
ALLISON CD36	348
ALLISON CD15	348
AR15W-410	CALL
AR15C660	CALL
AR POWER PARTNERS	266
BOSE SES	CALL
BOSE 10.2 II	CALL
B ACOUSTIC A60 SHI	196
B ACOUSTIC T830	CALL
B ACOUSTIC T930	CALL
CARVER AMAZING	CALL
CELESTION 3	CALL
CELESTION DL10 II	696
DBX SOUNDREEL 150	CALL
INFINITY RS2001	186
INFINITY RS4001	396
INFINITY RS5001	546
INFINITY KAPPA 5	CALL
INFINITY KAPPA 7	1086
INFINITY KAPPA 9	2296
JBL 18T1	CALL
JBL L100T3	CALL
JBL 7800	CALL
KEF C15	196
KEF C35	326
KEF C55	416
KEF C95	896
MISSION 761	176
MISSION 785	176
PIONEER SW1000	396
WARFADALE DIAMOND II	166

### RECEIVERS

#### LUXMAN RIIS \$646

- 70 W PC RECEIVER
- HIGH CURRENT/VOLTAGE
- REMOTE CONTROL
- JAPANESE QUALITY

THORENS TD320 MKII	546
YAMAHA TX-400	166
YAMAHA TX-800	376
YAMAHA TX-890	566
YAMAHA TX-8V7M	796
PHILIPS FR-880	566
PIONEER VSX-5500S	466
PIONEER VSX-7500S	496
PIONEER VSX-8500S	646
PIONEER VSX-8500S	646
SONY STR-A910	346
SONY STR-GX-ES10	256
SONY STR-GX-DE5	866
RESEARCH VRX3600	316
YAMAHA RX-330	226
YAMAHA RX-530	316
YAMAHA RX-730	396
YAMAHA RX-930	676
YAMAHA RX-1130	CALL

### SEPARATES

#### NAD 2100 \$336

- 50 W PC
- POWER AMPLIFIER
- HIGH CURRENT
- HIGH POWER

SONY TA-100BESD	866
YAMAHA AX-430	236
YAMAHA AX-700	376
YAMAHA AX-900	536
YAMAHA AX-100	546
YAMAHA DSP-100	496
YAMAHA DSP-3000	1366
YAMAHA DSR-100	456
YAMAHA CX-600	336
YAMAHA CX-1000	866
YAMAHA MX-35/55	CALL
YAMAHA MX-1000	846
YAMAHA MX-800	646
YAMAHA TX-530	CALL

### CD PLAYERS

#### DENON DCD-1520 \$546

- 20 BIT 8 TIMES O/S
- REMOTE CONTROL
- FIBER OPTIC OUT
- VARIABLE VOLUME

SONY DCD-900S	326
PIONEER PD-710	416
SONY DCD-500	CALL
SONY DCD-CR50	426
SONY DCD-CR150	686
YAMAHA CDC-610	466

### TAPE DECKS

#### DENON DRM-800 \$396

- 1-51 METAL
- 3 HEAD
- DOLBY B & C HX PRO
- DUAL CAP STAND

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### TURNTABLES

#### DUAL CS-5000B \$296

- BELT DRIVE
- 3 PT. SUSPENSION
- 3 SPEED
- OPS ARM

THORENS TD320 MKII	546
YAMAHA TT-400	166
YAMAHA TX-400	376
YAMAHA TX-800	566
YAMAHA TX-890	566
YAMAHA TX-8V7M	796
PHILIPS FR-880	566
PIONEER VSX-5500S	466
PIONEER VSX-7500S	496
PIONEER VSX-8500S	646
PIONEER VSX-8500S	646
SONY STR-A910	346
SONY STR-GX-ES10	256
SONY STR-GX-DE5	866
RESEARCH VRX3600	316
YAMAHA RX-330	226
YAMAHA RX-530	316
YAMAHA RX-730	396
YAMAHA RX-930	676
YAMAHA RX-1130	CALL

### CAR STEREO CENTER

#### ALPINE 7280 \$316

- 16X16 PULL OUT
- AM/FM CASSETTE
- EXTRA B
- MUSIC SEARCH
- PRE AMP OUT PUT

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### CD PLAYERS

#### B.ACOUSTIC 751 \$156

- TWEETER MIDRANGE
- COMBO SYSTEM
- SEPARATE CROSS OVER
- SOFT DOME TWEETER

SONY DCD-900S	326
PIONEER PD-710	416
SONY DCD-500	CALL
SONY DCD-CR50	426
SONY DCD-CR150	686
YAMAHA CDC-610	466

## HOME VIDEO CENTER

### TELEVISIONS

#### SONY KV-27XBR10 \$866

- 27" STEREO MTS
- MONITOR RECEIVER
- S VHS INPUT
- REMOTE

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### VCRS

#### PANASONIC PV-4960 \$416

- 4 HEAD HI-FI STEREO
- ON SCREEN REMOTE
- AUDIO VIDEO OUT
- NEW COMPACT DESIGN

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### CAMCORDERS

#### CANON A1 \$1476

- HIGH SPEED SHUTTER
- HIGH 8 FPM
- AUTO FOCUS
- 10:1 ZOOM

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### SPORTABOUTS

#### AWIA HST800 \$146

- AM/FM RADIO
- CASSETTE PLAYER
- FAST FOR/REV
- LIGHT WEIGHT

YAMAHA KR-230	326
YAMAHA KR-500	316
YAMAHA KR-1200	566
YAMAHA KR-700	466
YAMAHA KW-900	576
YAMAHA KW-302	336
YAMAHA KW-602	CALL

### AUDIO SPECIALTY

PROTON A13000 HIGH END SYSTEM CALL  
 PROTON 300A 25WATT BI-AMP AM/FM STEREO CALL  
 PROTON 320AM/FM DIGITAL CLOCK RADIO 96  
 NAKAMICHI TMB AM/FM CLOCK RADIO 126  
 NAKAMICHI CP1 COMPACT DISK CASS. 296  
 NAKAMICHI RS1 RECEIVER SPEAKER 246

### HIGH END AUDIO

CAMBRIDGE P40 40 W/PC INT-AMP 266  
 CAMBRIDGE P55 75 W/PC INT-AMP 486  
 CAMBRIDGE C75 TOP OF THE LINE PRE-AMP 446  
 CAMBRIDGE A75 100 W/PC 45 AMP CURR 546  
 CAMBRIDGE A250 250 W/MONO BLOCK AMP 996  
 CAMBRIDGE CD2 16 BIT 16X OVERSAMPLING 876

### LASER PLAYERS

PIONEER CLD1070 LASER COMBO 416  
 PIONEER CLD2070 LASER COMBO 636  
 PIONEER CLD3070 LASER COMBO 846  
 PIONEER LDW1 LASER COMBO 946  
 YAMAHA CDV1100/CDV1600 CALL  
 PHILIPS CDV487 • CDV488 CALL

### PORTA-CDS

SONY D2 146  
 SONY D4 146  
 SONY D15 236  
 SONY D25 236  
 SONY D80 196  
 SONY D160 196  
 SONY D14 226

**3 CONVENIENT RETAIL LOCATIONS**  
 •1024 6TH AVENUE NY NY 10018  
 •1030 6TH AVENUE NY NY 10018  
 •331 RT. 4 PARAMUS NJ 07652

INTRODUCING OUR RAIN CHECK GUARANTEE 30 DAYS ON PRICE AND AVAILABILITY FROM DATE OF PUBLICATION  
**CUSTOMER SERVICE (201) 489-0666 EXT. 66**  
 Pictures are for illustrations only! Consumer Affairs Lic. #005697 & #16928. Ad represents a small percentage of inventory.

**7 DAY NO-QUESTION DEFECTIVE EXCHANGE**  
 •30 DAY HOME TRIAL  
 SPEAKER ADDITION  
 •INSTALLATION & DELIVERY AVAILABLE

**RETAIL CALLS**  
 NY 212-391-2777  
 NJ 201-489-0666



and lasting impression. According to Ledbetter's note, Gubaidulina is thinking of making this work the core of a larger one whose outer sections would involve four string quartets and possibly a chorus.

Both works receive the most committed, eloquent, altogether impressive performances a composer could wish, and they have been superbly recorded—the concerto in Boston's Symphony Hall in April 1988, the *Hommage* in Bavaria during a tour by Kremer and his Lockenhaus Festival associates a year earlier. *R.F.*

**LISZT: *Transcendental Etudes*.** Vladimir Ovchinnikov (piano). EMI/ANGEL © CDC 49821 (64 min).

Performance: *Very good*  
Recording: *Sometimes plummy*

The Soviet pianist Vladimir Ovchinnikov began placing high in various competitions as far back as 1980. He landed his EMI contract, and a number of prime engagements, in consequence of taking first prize in the Leeds Competition of 1987, and in this recording of the *Transcendental Etudes* (his debut release, I believe), he clearly edges out such formidable Lisztians as Jorge Bolet and Claudio Arrau. Ovchinnikov simply shows more flair, more *brío*, than either of his revered senior colleagues; he has inexhaustible technique, but also the good sense not to use this music merely to make us aware of that. There is, in fact, in such pieces as *Mazeppa* and *Ricordanza*, a sense of holding back, of reluctance to pull out all the stops (pyrotechnical or emotional)—but far better a little understatement than the sort of excess to which so many interpreters are drawn. I would have welcomed more lightness and sense of fantasy in *Feux follets*, too, but in *Eroica*, *Wilde Jagd*, and most of the rest Ovchinnikov is quite in his element. *Chasse-neige* brings the cycle not only to its conclusion but to its climax in terms of cumulative brilliance.

I can imagine still more satisfying accounts of this cycle: Lazar Berman's Melodiya recording, once available here on CBS LP's, would be worth reissuing, and Minoru Nojima's incomparable performances of two of the etudes on a Reference Recordings CD strongly suggest that he is the pianist to give us *the* all-surpassing account of the entire set of twelve. But among those recordings available now Ovchinnikov's surely takes top honors, and it gives promise of interesting things to come from him. (I hope his subsequent recordings are more judiciously focused sonically than this one, which, while generally good, tends to be a little plummy here and there, and distressingly so in *Feux follets*.) *R.F.*

**PROKOFIEV: *Three Pieces from "Romeo and Juliet"*** (see STRAVINSKY)



*Beaux Arts Trio: Isidore Cohen, Menahem Pressler, Peter Wiley*

**PUCCINI: *Songs*** (see Collections—Plácido Domingo)

**PURCELL: *Dido and Aeneas*** (see Best of the Month, page 106)

**RAVEL: *La Valse*** (see STRAVINSKY)

**STRAVINSKY: *Three Movements from "Petrouchka"*.** **PROKOFIEV: *Three Pieces from "Romeo and Juliet."*** **RAVEL: *La Valse*.** **GERSHWIN: *Rhapsody in Blue*.** Louis Lortie (piano). CHANDOS © CHAN 8733 (57 min).

Performance: *Blazing*  
Recording: *Slightly mushy*

Louis Lortie seems born to play these piano transcriptions, mainly by the composers, of works originally for orchestra. With a precise understanding of the musical thought behind each piece at hand, he treats the transcriptions as blueprints for re-creating the color and drama of the orchestral versions in his own, distinctively pianistic, sound world. In some cases, as in *La Valse*, he actually makes improvements on the composer's transcription. In fact, Lortie's playing is so dazzling that you hardly miss the sound of the orchestral instruments, even the ghostly flute solo in the "Montagues and Capulets" section of the Prokofiev, in which he comes up with a piano timbre that's equally beguiling.

Besides playing the Stravinsky with jaw-dropping virtuosity, Lortie gives

the music an incredibly characterful reading that makes you hear the piece almost as if for the first time. That's partly because of his immense musical personality and partly because we so rarely hear this music performed with such interpretive unanimity in its orchestral version.

The only disappointment is his reading of *Rhapsody in Blue*, which sounds like the kind of thing brash young music students do among themselves to see who can get through the score the fastest. Lortie's breakneck speed never allows the music to breathe or charm, and his rhythmic aggressiveness becomes unbearably mannered. Otherwise this has to be one of the most thrilling piano recordings of the year. *D.P.S.*

**TCHAIKOVSKY: *Piano Trio in A Minor, Op. 50*.** Beaux Arts Trio. PHILIPS © 422 400-2 (47 min).

Performance: *Intimate*  
Recording: *Good*

This is the first Beaux Arts Trio recording with its new cellist, Peter Wiley, who joined pianist Menahem Pressler and violinist Isidore Cohen after the 1988 retirement of Bernard Greenhouse. Where the trio's 1971 recording of the Tchaikovsky *A Minor* observed the composer-sanctioned cuts, the new one is complete.

While a plangently elegiac tone dominates the opening and closing pages—the work memorializes a contemporary



**COMPETITIVE PRICING... CALL NOW  
FOR YOUR BEST DELIVERED PRICE!**

**Miniature CAMCORDERS**

**KYOCERA  
KD-S530**  
Kyocera's 8mm Camcorder  
**Finemovie 8**

- 4 HEAD
- HI-FI
- 1 lb 12 oz
- DUBBING
- EDITING



**HI-FI STEREO CAMCORDERS**



CANON 8mm A1

AUTHORIZED DEALER for:

- CANON
- GE
- HITACHI
- JVC
- KYOCERA
- MINOLTA
- PANASONIC
- OLYMPUS
- RCA
- RICOH
- MUCH MORE!

**MOST POPULAR FEATURES**

- |  |        |  |       |
|--|--------|--|-------|
| • SUPER VHS 8:1 ZOOM                                       | \$699  | • VHS-C 6:1 ZOOM 5 LUX FLY ERASE       | \$599 |
| • SUPER VHS 8:1 ZOOM w/FLYING ERASE HEAD                   | \$895  | • 8mm 4 LUX FLY ERASE HI-FI SOUND      | \$699 |
| • SUPER VHS FULL SIZE TIME/DATE 8x ZOOM w/DIGITAL EFFECTS  | \$1199 | • VHS FULL-SIZE CAM TIME/DATE 6:1 ZOOM | \$750 |
| • PVS 445  | \$1079 | • VHS FULL-SIZE CAM TIME/DATE/8x ZOOM  | \$950 |
| • 8mm/SPECIAL EFFECTS 420 PIX, SLOW MO. HI-FI, 1:2000 SHUT | \$899  | • VHS 8:1 ZOOM FLY ERASE w/CH GEN      |       |

**INCLUDES  
— ALL —  
ACCESSORIES**

**BEST VALUE:**

- PANASONIC PVS550
- PANASONIC PV520
- CANON H460/H660
- OLYMPUS VXS405KU
- CANON E808
- RCA CC320
- JVC GRS707
- JVC GR60U
- CANON A1
- RICOH RB00H

**SUPER PRICE REDUCTIONS:**

- MINOLTA 8E1
- KYOCERA KD330
- HITACHI VM2250
- RCA CC310
- GE GE9825
- RICOH R350
- CANON E440
- CANON E80
- JVC GRS77
- E640

**SUPER VHS CAMCORDERS**



JVC GRS707

**VCR's - VHS & BETA  
8mm**



- PANASONIC 4 HD VHS w/FLY ERASE HD \$359
- QUASAR 4+2 HD HI-FI ST MTS \$349
- SUPER VHS HI-FI MTS \$469
- 4+2 SUPER VHS HI-FI MTS SUPER & FLY ERASE \$569
- 4+2 SUPER VHS HI-FI MTS DIGITAL w/FLY ERASE VIDEO BRAIN - Title & Date recording Synchro-Edit Feature - Shuttle Jog Control \$799
- SUPER VHS TOP of the LINE FULLY LOADED \$2200
- BETA DECK \$275
- VHS PLAYER \$159
- 8mm STEREO PCM HI-FI PORT. \$599
- 8mm PLAYER \$299

**SPECIAL EFFECT & CHARACTER GEN. EDITING PROCESSOR**



- JVC JXSV55 S-VHS Editor w/Special Effects Mike Mix \$459
- DIRECT ED PLUS-COLOR Add Titles - Special Effect w/Remote CALL
- JVC CGV60U CHAR. GENERATOR 4 Page Scroll - 3 Size Typeset - B/W \$179
- SONY SBV1000 8mm SELECTOR SVHS HI BAND PRO SWITCHER CALL
- NADY & AZDEN PRO Wireless UHF Mikes \$129
- SUN PAK VIDEO LIGHT CV300 \$99
- SONY P6120 8mm \$599
- SUPER VHS TAPE (T120) \$800
- NP77 \$48

**TV's**  
20" REMOTE COLOR TV  
MTS STEREO

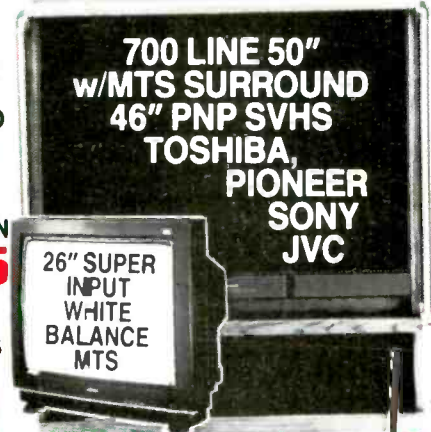
**\$299**

45" 650 LINE HI-RESOLUT ON

**\$1695**  
STEREC

SUPER VHS 30" TV

**\$895**



700 LINE 50" w/MTS SURROUND  
46" PNP SVHS  
TOSHIBA,  
PIONEER  
SONY  
JVC

26" SUPER INPUT WHITE BALANCE MTS

**LASER DISC - VIDEO**



RECEIVERS COMPACT DISC

**CAR STEREOS**

— CALL TOLL FREE —  
**& RADAR DETECTORS**



**FAX MACHINES**

- TOSHIBA 3300 \$739
- TOSHIBA 3700 \$1049

**DISC PLAYERS PORTABLE PHONES**

- PORTABLE CD
- WALK-MAN
- SONY



FOR MORE INFO, Call: (201) 696-6531

**WE WILL MATCH OR BEAT ANY LEGITIMATE PRICE**  
ASK ABOUT OUR OPEN CREDIT LINE (up to \$10,000)

Call Toll-Free: **1 (800) 444-6300**

Orders: **1 (800) 247-4654**

We ship within 24 hours. All prices quoted include manufacturer's standard accessories & U.S. Warranty. All units are factory sealed. Shipping & handling extra.





**STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Required by 39 U.S.C. 3685)**

1. Title of Publication: *Stereo Review*  
a. Publication No. 504-850
2. Date of filing: September 27, 1989
3. Frequency of issue: Monthly  
a. No. of issues published annually: 12  
b. Annual subscription price: \$13.94
4. Location of known office of publication (not printers): 1633 Broadway, New York, NY 10019
5. Complete mailing address of the headquarters or general business offices of the publisher (not printers): 1633 Broadway, New York, New York 10019
6. Full names and complete mailing address of publisher, editor, and managing editor: Publisher, Winston A. Johnson, 1633 Broadway, New York, New York 10019. Editor, Louise Boundas, 1633 Broadway, New York, New York 10019. Managing Editor, David Stein, 1633 Broadway, New York, New York 10019
7. Owner: Diamandis Communications Inc., 1633 Broadway, New York, New York 10019
8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: Hachette Publications, Inc., 1633 Broadway, New York, New York 10019

10. Extent and Nature of Circulation:

	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
A. Total no. copies printed (net press run)	593,731	595,390
B. Paid and/or requested circulation		
1. Sales through dealers and carriers, street vendors and counter sales	58,883	58,000
2. Mail subscriptions	442,527	442,997
C. Total paid circulation (sum of 10B1 and 10B2)	501,410	500,997
D. Free distribution by mail, carrier or other means, samples, complimentary, and other free copies	10,664	9,091
E. Total distribution (sum of C and D)	512,074	510,088
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	2,140	2,302
2. Returns from news agents	79,517	83,000
G. Total (sum of E, F1 and F2—should equal net press run shown in A)	593,731	595,390

11. I certify that the statements made by me above are correct and complete.

LEON ROSENFELD,  
Vice President/Circulation

of Tchaikovsky's, the Russian pianist Nicholas Rubinstein—it does not pervade the performance as a whole, which seems to place most emphasis on the picturesquely evocative set of twelve variations that make up most of the second movement. Some have compared these variations (rightly, I think) to a photograph album of well-loved scenes and incidents that Tchaikovsky associated with his prematurely departed teacher and colleague, and that is the sense conveyed by this fine, intimately scaled reading. *D.H.*

**TCHAIKOVSKY: *Symphony No. 5, in E Minor, Op. 64; Swan Lake, Op. 20, Suite.*** Chicago Symphony Orchestra, Georg Solti cond. LONDON ©425 516-4, © 425 516-2 (72 min).

Performance: *Brusque to elegant*  
Recording: *Very good*

For the most part, Georg Solti's Tchaikovsky Fifth is an ultra-straight, non-sense reading. I like his pacing of the opening pages but prefer a bit more relaxation in the lyrical passages. As might be expected, he makes the most of the first movement's dramatic elements, with relentless rhythms and wide contrasts in dynamics, and the same holds for the slow movement with its famous horn solo. But there is poetry in his restrained treatment of the third-movement waltz, and it is here that the performance finally comes to real life. The finale is a swift, all-out affair, so much so that the recapitulation of the motto theme in the brass sounds breathless rather than convincingly assertive and fierce. The recording itself has brilliance and presence to spare.

The poetry that Solti brings to the waltz movement of the symphony carries over in a most delightful way to the seven *Swan Lake* movements: the Act II introduction, the magnificent Act I waltz, done here with plenty of repeats, the famous pas de deux with solo violin, cello, and harp, and the Hungarian, Spanish, and Italian dances from the divertissement. In contrast to their hard-driven Fifth, here the conductor and orchestra sound superbly relaxed, as though they were having a wonderful time. Solti and the CSO should go dancing more often. *D.H.*

**VIVALDI: *Cello Concertos: in B Minor (RV 424); in G Minor (RV 416); in A Minor (RV 418); in F Major (RV 412); in C Minor (RV 401); in G Major (RV 413).*** Christophe Coin (cello); Academy of Ancient Music, Christopher Hogwood cond. L'OISEAU-LYRE © 421 732-2 (58 min).

Performance: *Volatile*  
Recording: *Excellent*

This collection could be called "The Darker Side of Vivaldi." Some music lovers may be surprised to discover that Vivaldi even had a dark side, or that his music could be substantial enough to be

menacing. But Christopher Hogwood and Christophe Coin successfully challenge the conventional wisdom about the Baroque master, not simply by programming four minor-key concertos out of six total but by choosing works that seem deeply felt—at least by Vivaldi's standards. In fact, the rhapsodic cello lines in the A Minor Concerto, RV 418, set against the contrapuntal orchestral writing, suggest programmatic significance, as do the sudden pauses in the slow movement.

Hogwood's performances are among his most committed in years. In addition to his usual feeling for the style of the music, he is unusually attuned to its minute emotional twists, eliciting its volatility. As for Coin, sometimes the cello lines can be downright craggy, but he never tries to smooth them out into something suave and bland. On the other hand, his articulation on the authentic instruments (a cello and a cello piccolo) is so much more fluid than what we're used to hearing on a modern cello that the virtuosic aspects of the music don't call attention to themselves but seem like an integrated part of the total expression. *D.P.S.*

**COLLECTION**

**PLACIDO DOMINGO: *The Unknown Puccini. A te; Vexilla; Salve regina; Ad una morta; Mentia l'avviso; Storiella d'amore; Sole e amore; Avanti Urania; Inno a Diana; E l'uccellino; Terra e mare (two versions); Canto d'anime; Casa mia, casa mia; Morire; Inno a Roma.*** Placido Domingo (tenor); Julius Rudel (piano, organ). CBS © MT 44981, © MK 44981 (45 min).

Performance: *Very satisfying*  
Recording: *Good*

The especially full program notes suggest that these songs will afford the listener keener insight into the work of Puccini, and the point is well taken. In these fifteen selections we hear strains and tonalities of music yet to come from the master. *Ad una morta* foreshadows melodies in *Manon Lescaut*, and *Sole e amore* appears quite undisguised in *La Bohème*, Act III. But in addition to pleasures derived from musical sleuthing, there is the unusual satisfaction of hearing these songs about aspects of everyday life—Puccini once said he could write music only about "little things"—performed by Placido Domingo with the simplicity, sincerity, and lack of "manner" that they require. Some of Puccini's vignettes are very small indeed, like the lullaby *E l'uccellino* and the brief apostrophe to *Casa mia*, and some, such as the religious selections, are more expansive. All, however, receive appropriate, honest performances by an artist in fine voice (ably assisted in *Vexilla* by bass-baritone Justino Diaz) with sensitive accompaniments by Julius Rudel. The recording itself is sonically well balanced throughout. *R.A.*



# WDS

**WISCONSIN DISCOUNT** EST. 1954  
 2417 W. Badger Road  
 Madison, WI 53713  
 1-800-271-6889  
 SOME ITEMS CLOSEOUTS

# 1-800-356-9514

IF YOU FIND A BETTER PRICE — CALL US

\*\*\*  
 FIVE STAR  
 RATING

## WDS Rated #1 for SERVICE and PRICE

### Guaranteed Low Price

- We get the BEST volume discounts
  - LOW OVERHEAD—To sell at best discounts
  - We charge the competition to ensure the best price
- ### Most Major Brands
- THIRDS ONLY, A PARTIAL LISTING
  - IF YOU DON'T SEE IT LISTED—CALL!

### 10-Day Return

- Returns accepted within 10 days (must be called in for prior authorization). Products must be in original condition. Return subject to restocking fee. Shipping and handling not refundable.

### Buyer Protection Plan—FREE

- 30-DAY GUARANTEED NO LEMON
- EVERY PRODUCT BRAND NEW—FULL WARRANTY



### PHONE HOURS

M-F 8 a.m. - 8 p.m.  
 SAT 8 a.m. - 5:30 p.m.  
 SUN 11 a.m. - 5 p.m.  
 Central Time Zone

### CALL US TOLL FREE

- For expert recommendations
- For product information
- TO ORDER PRODUCT

### DISC PLAYER

**MAGNAVOX CD3000** ... \$189  
 6 Disc Changer • Dual D/A's  
 4X Oversampling

**TEAC V570** ... \$169  
 2 Mirror • Dolby B/C/HX PRO  
 Bias Fine Tuning

**JVC XL2411** ... SPECIAL  
 Dual 18 Bit • 1X Oversampling  
 Coaxial Digital Output

**TEAC V670** ... \$249  
 3 Head • Dolby B/C/HX PRO  
 Bias Fine Tuning • Auto Spacer

**TEAC PD 700M** ... \$239  
 6 Disc Changer • 4X Oversampling  
 Remove • 32 Track Program

**JVC TOR421** ... SPECIAL  
 AIR • Dolby B/C/HX PRO  
 Headphone Output

**MAGNAVOX CD2000** ... \$129  
 4X Oversampling • Dual D/A  
 Top Rated Player

**JVC TDW501** ... LOW PRICE  
 Twin AIR Dubbing Deck  
 Dolby B/C • Continuous Play

**JVC XLM701** ... LOW PRICE  
 6 + 1 Changer • Dual 18 Bit  
 Best Changer on the Market

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Closed Loop Dual Capstan

**PIONEER CLD0370** GUARANTEED LOW PRICE  
 Contribution CD/Loader  
 Dual 18 Bit D/A • 4X

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Auto Tape Selector

**JVC XL2611** ... LOW PRICE  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

**MAGNAVOX CDB586** ... \$239  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

### DISC MAN

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

**JVC PCX300** ... SPECIAL  
 Portable With CD Player  
 Wide Selection of Brands/Models

**SONY D160** ... LOW PRICE  
 Home and Car Discman  
 Includes CPM100P + CPA1

**SONY MORT1K5** ... \$149  
 Wireless Headphones • Top Rated  
 Wide Selection of Brands/Models

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

**JVC PCX300** ... SPECIAL  
 Portable With CD Player  
 Wide Selection of Brands/Models

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

**JVC PCX300** ... SPECIAL  
 Portable With CD Player  
 Wide Selection of Brands/Models

### CASSETTE DECK

**MAGNAVOX CD3000** ... \$189  
 6 Disc Changer • Dual D/A's  
 4X Oversampling

**TEAC V570** ... \$169  
 2 Mirror • Dolby B/C/HX PRO  
 Bias Fine Tuning

**JVC XL2411** ... SPECIAL  
 Dual 18 Bit • 1X Oversampling  
 Coaxial Digital Output

**TEAC V670** ... \$249  
 3 Head • Dolby B/C/HX PRO  
 Bias Fine Tuning • Auto Spacer

**TEAC PD 700M** ... \$239  
 6 Disc Changer • 4X Oversampling  
 Remove • 32 Track Program

**JVC TOR421** ... SPECIAL  
 AIR • Dolby B/C/HX PRO  
 Headphone Output

**MAGNAVOX CD2000** ... \$129  
 4X Oversampling • Dual D/A  
 Top Rated Player

**JVC TDW501** ... LOW PRICE  
 Twin AIR Dubbing Deck  
 Dolby B/C • Continuous Play

**JVC XLM701** ... LOW PRICE  
 6 + 1 Changer • Dual 18 Bit  
 Best Changer on the Market

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Closed Loop Dual Capstan

**PIONEER CLD0370** GUARANTEED LOW PRICE  
 Contribution CD/Loader  
 Dual 18 Bit D/A • 4X

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Auto Tape Selector

**JVC XL2611** ... LOW PRICE  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

**MAGNAVOX CDB586** ... \$239  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

### RECEIVERS

**JVC RXS01BK** GUARANTEED LOW PRICE  
 65 WatsCh • Remote • 7 Band EQ  
 Auto Memory • CSRP

**PROTON D940** ... SPECIAL  
 Dynamic Power on Demand (DPD)  
 Schottz Tuner • Video Source

**JVC RXS01BK** GUARANTEED LOW PRICE  
 65 WatsCh • Remote • 7 Band EQ  
 Auto Memory • CSRP

**PROTON D940** ... SPECIAL  
 Dynamic Power on Demand (DPD)  
 Schottz Tuner • Video Source

**JVC RX701V8K** GUARANTEED LOW PRICE  
 80 WatsCh • 7 Band EQ  
 Dolby Surround Sound

**SONY D160** ... LOW PRICE  
 Home and Car Discman  
 Includes CPM100P + CPA1

**JVC RX401** ... LOW PRICE  
 50 WatsCh • Remote • 7 Band EQ  
 40 Presets • Compu Link

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

**JVC RX401** ... LOW PRICE  
 50 WatsCh • Remote • 7 Band EQ  
 40 Presets • Compu Link

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

### CAR STEREO

**CLARION 702EQA** ... \$119  
 AMP/EO • 7 Bands • 25 X 4 Power  
 Sub-Woofers Output

**JVC RXS01BK** GUARANTEED LOW PRICE  
 65 WatsCh • Remote • 7 Band EQ  
 Auto Memory • CSRP

**CLARION 702EQA** ... \$119  
 AMP/EO • 7 Bands • 25 X 4 Power  
 Sub-Woofers Output

**JVC RXS01BK** GUARANTEED LOW PRICE  
 65 WatsCh • Remote • 7 Band EQ  
 Auto Memory • CSRP

**ALPHASONIC PMA2050 SPECIAL**  
 50 WatsCh AMP • THD 05%  
 Bridgable into Mono-100 Wts

**JVC RX701V8K** GUARANTEED LOW PRICE  
 80 WatsCh • 7 Band EQ  
 Dolby Surround Sound

**ALPHASONIC PMA2075 SPECIAL**  
 75 WatsCh AMP • THD 05%  
 Bridgable into Mono-150 Wts

**JVC RX401** ... LOW PRICE  
 50 WatsCh • Remote • 7 Band EQ  
 40 Presets • Compu Link

**ALPHASONIC PMA2075 SPECIAL**  
 75 WatsCh AMP • THD 05%  
 Bridgable into Mono-150 Wts

**JVC RX401** ... LOW PRICE  
 50 WatsCh • Remote • 7 Band EQ  
 40 Presets • Compu Link

### CAR STEREO

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**SHERWOOD XR1604** ... \$219  
 Removable DIN • High Power  
 Dolby B/C • AIR • Full Logic

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

**CLARION 9971RT** ... \$299  
 Full Logic Transport • AIR  
 Dolby B/C • High Power

### VHS

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

### 8mm CAMCORDER

**CANON A1** ... GUARANTEED LOW PRICE  
 HiBand 8 • 7 lux • 10X Zoom  
 360K pixels • Flying Erase Heads

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**SONY CCDP70** ... GUARANTEED LOW PRICE  
 4 lux • 8X • Flying Erase Heads  
 250K pixels • Variable Shutter

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**SONY CCDP36** ... GUARANTEED LOW PRICE  
 4 lux • 11/4 • 2.1 f/8  
 250K pixels • 6X Zoom

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**SONY CCDP46** ... GUARANTEED LOW PRICE  
 3 lux • 8X Zoom • FEH • 1/6  
 2 lb 10 oz • Variable Shutter

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

**SONY CCDP46** ... GUARANTEED LOW PRICE  
 3 lux • 8X Zoom • FEH • 1/6  
 2 lb 10 oz • Variable Shutter

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

### VHS MTS HIFI

**TOSHIBA 4-HEAD HIFI** ... \$269  
 Player Only • Remote  
 All 4 HO Circuits

**TOSHIBA 4-HEAD HIFI** ... \$269  
 Player Only • Remote  
 All 4 HO Circuits

**VHS MTS HIFI** ... \$349  
 On-Screen Program • 821 Day  
 122 Ch • Slow Motion

**VHS MTS HIFI** ... \$349  
 On-Screen Program • 821 Day  
 122 Ch • Slow Motion

**Zenith MTS HIFI** ... \$389  
 On-Screen Menu • Slow Motion  
 VHS Index • Gold • 2 Function Mem

**Zenith MTS HIFI** ... \$389  
 On-Screen Menu • Slow Motion  
 VHS Index • Gold • 2 Function Mem

**JVC HRD440U** ... LOW PRICE  
 4 Head • Indearing • 4 HO Circuits  
 181 ch • 814 Day • LCD Remote

**JVC HRD440U** ... LOW PRICE  
 4 Head • Indearing • 4 HO Circuits  
 181 ch • 814 Day • LCD Remote

**RCA 4 HEAD HIFI** ... \$379  
 On-Screen Program  
 155 Ch • Video Heads

**RCA 4 HEAD HIFI** ... \$379  
 On-Screen Program  
 155 Ch • Video Heads

**JVC HRD50U** ... LOW PRICE  
 4 Head • Indearing • 4 HO Circuits  
 Digital Pip • LCD Remote • OSP

**JVC HRD50U** ... LOW PRICE  
 4 Head • Indearing • 4 HO Circuits  
 Digital Pip • LCD Remote • OSP

**4 HEAD HIFI** ... \$389  
 On-Screen Program • 621 Day  
 122 Ch • Slow Motion

**4 HEAD HIFI** ... \$389  
 On-Screen Program • 621 Day  
 122 Ch • Slow Motion

**HITACHI VTF330 SPECIAL**  
 Double Azimuth-Head • 155 Ch  
 Digital Auto Tracking • 8365

**HITACHI VTF330 SPECIAL**  
 Double Azimuth-Head • 155 Ch  
 Digital Auto Tracking • 8365

### 8mm CAMCORDER

**CANON A1** ... GUARANTEED LOW PRICE  
 HiBand 8 • 7 lux • 10X Zoom  
 360K pixels • Flying Erase Heads

**JVC HRD600** ... \$299  
 All 4 HO Circuits • 4 Head  
 On-Screen Program • Index Search

**SONY CCDP70** ... GUARANTEED LOW PRICE  
 4 lux • 8X • Flying Erase Heads  
 250K pixels • Variable Shutter

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**SONY CCDP36** ... GUARANTEED LOW PRICE  
 4 lux • 11/4 • 2.1 f/8  
 250K pixels • 6X Zoom

**JVC HRD520** ... LOW PRICE  
 LCD Remote • On-Screen Program  
 All 4 HO Circuits • 181 Ch.

**SONY CCDP46** ... GUARANTEED LOW PRICE  
 3 lux • 8X Zoom • FEH • 1/6  
 2 lb 10 oz • Variable Shutter

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

**SONY CCDP46** ... GUARANTEED LOW PRICE  
 3 lux • 8X Zoom • FEH • 1/6  
 2 lb 10 oz • Variable Shutter

**RCA VR490** ... GUARANTEED LOW PRICE  
 4-Head • 8,365 Day  
 On-Screen Display

### DISC PLAYER

**MAGNAVOX CD3000** ... \$189  
 6 Disc Changer • Dual D/A's  
 4X Oversampling

**TEAC V570** ... \$169  
 2 Mirror • Dolby B/C/HX PRO  
 Bias Fine Tuning

**JVC XL2411** ... SPECIAL  
 Dual 18 Bit • 1X Oversampling  
 Coaxial Digital Output

**TEAC V670** ... \$249  
 3 Head • Dolby B/C/HX PRO  
 Bias Fine Tuning • Auto Spacer

**TEAC PD 700M** ... \$239  
 6 Disc Changer • 4X Oversampling  
 Remove • 32 Track Program

**JVC TOR421** ... SPECIAL  
 AIR • Dolby B/C/HX PRO  
 Headphone Output

**MAGNAVOX CD2000** ... \$129  
 4X Oversampling • Dual D/A  
 Top Rated Player

**JVC TDW501** ... LOW PRICE  
 Twin AIR Dubbing Deck  
 Dolby B/C • Continuous Play

**JVC XLM701** ... LOW PRICE  
 6 + 1 Changer • Dual 18 Bit  
 Best Changer on the Market

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Closed Loop Dual Capstan

**PIONEER CLD0370** GUARANTEED LOW PRICE  
 Contribution CD/Loader  
 Dual 18 Bit D/A • 4X

**JVC TDV621** ... GUARANTEED LOW PRICE  
 3 Head • Dolby B/C/HX PRO  
 Auto Tape Selector

**JVC XL2611** ... LOW PRICE  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

**MAGNAVOX CDB586** ... \$239  
 6 Disc Changer • 4X  
 Dual D/A Converters

**JVC TDW901** ... SPECIAL  
 Twin AIR REC/PLAY • B/C/HX PRO  
 Full Function Remote Control

### DISC MAN

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery

**JVC PCX300** ... SPECIAL  
 Portable With CD Player  
 Wide Selection of Brands/Models

**SONY D160** ... LOW PRICE  
 Home and Car Discman  
 Includes CPM100P + CPA1

**SONY MORT1K5** ... \$149  
 Wireless Headphones • Top Rated  
 Wide Selection of Brands/Models

**SONY D25** ... LOW PRICE  
 4X Sampling • 22 Track  
 5-Way Repeat • BP2 Battery



# STEREO REVIEW RETAIL MART

## Where to buy Poik Speakers

### AUTHORIZED HOME DEALERS

**CANADA** Call Evolution Technology, Toronto for nearest dealer 1-416-847-8888  
**AK Anchorage:** Magnum Electronics • Fairbanks: Heilift's  
**AL Birmingham:** Audition • Dothan: International Audio • Huntsville: Sound Distributors • Mobile: Hi-Fi Zone • Montgomery: The Record Shop • Tuscaloosa: Kincaid Stereo & TV  
**AR Fayetteville/Ft. Smith:** Stereo One • Little Rock: Leisure Electronics • Searcy: Soltmart  
**AZ Phoenix Mesa:** Hi-Fi Sales • Tucson: Audio Emporium • Yuma: Warehouse Stereo  
**CA Bakersfield:** Casa Moore • Campbell: Sound Goods • Canoga Park: Shelley's • Carpinteria: Creative Stereo • Chico: Sounds By Dave • Corona Del Mar: Pacific Coast Audio Video • Escondido: Sound Company • Eureka: Eureka Audio Video • Lancaster: California Soundworks • Long Beach: Audio Concepts • Mountain View: Sound Goods • Napa: Fulumerson • Orange: Absolute Audio • Penn Grove: California Stereo • Redondo: Systems Design • Riverside: Speakerscraft • Sacramento: Good Guys • San Diego: Sound Company • San Francisco & Suburbs: Good Guys • San Gabriel: Audio Concepts • San Jose: Good Guys • San Luis Obispo: Audio Ecstasy • Santa Barbara: Creative Stereo • Santa Cruz: Sound Wave • Santa Maria: Creative Stereo • Santa Monica: Shelley's Stereo • Stockton: Gluskins • Thousand Oaks: Creative Stereo • Upland: Audio Haven • Ventura: Creative Stereo • Victorville: Incredible Sounds • Visalia: Metro Stereo • Westminster: Videotek Stereo  
**CO Boulder:** Soundtrack • Colorado Springs: Sunshine Audio • Denver & Suburbs: Soundtrack • Glenwood Springs: Stereo Unlimited • Grand Junction: Sound Company • Minturn: Custom Audio Video • Pueblo: Sunshine Audio  
**CT Avon:** Hi-Fi Stereo House • Danbury: Carston's • Fairfield: Audio Design • Greenwich: Al Franklins • Hartford: Al Franklins • New Haven: Audio Etc. • Newington: Hi-Fi Stereo House • New London: Roberts • Norwalk: Audiotronics • Waterbury: Zinn Music  
**DE Wilmington:** Bryn Mawr Stereo  
**FL Daytona Beach:** Stereotypes • Ft. Myers: Stereo Garage • Ft. Lauderdale: Sound Advice • Ft. Pierce: Sound Shack • Ft. Walton Beach: Audio International • Gainesville: Electronics World • Jacksonville: Audio Tech. Spectrum Home Theater • Key West: Audio International • Lakeland: Sound Factory • Mary Esther: Palm Audio Video • Merritt Island: Southern Audio • Miami: Electronic Equipment Co. • Sound Advice • Naples: Stereo Garage • Panama City: Wattsound Stereo • Pensacola: All Pro Sound • Sunrise: Sound Advice • St. Petersburg: Cooper Irti Stereo • Sound Advice • Tallahassee: Stereo Store • Tampa: Sound Advice • W. Palm Beach: Electronic Connection, Sound Advice  
**GA Athens:** Hi-Fi Buys • Atlanta & Suburbs: Hi-Fi Buys • Augusta: Stereo City • Brunswick: M&H Service Store • Columbus: Merit TV • Gainesville: Audio Dimensions • Macon: Georgia Music • Savannah: Audio Warehouse • Valdosta: Stereo Connection  
**HI Honolulu:** Honolulu Audio Video  
**IA Davenport:** Gng's Music • Des Moines: Audio Labs • Dodge City: Sound World • Dubuque: Reniers Iowa City: Hawkeye Audio • Mason City: Sound World • Sioux City: Audio Visions • Waterloo: Team  
**ID Boise:** Stereo Shoppe • Moscow: Stereo Shoppe • Sandpoint: Electracraft • Twin Falls: Audio Warehouse  
**IL Alton:** Reliable Stereo • Aurora: Stereo Systems • Carbondale: Southern Stereo • Champaign: Good Vibes • Chicago & Suburbs: United Audio • Decatur: Team Electronics • Highland Park: Columbia • Joliet: Stereo Systems • Kankakee: Barrett's Entertainment • Lansing: UniTek Electronics • Naperville: Stereo Systems • Normal: Sundown One • Peoria: Team Electronics • Rockford: Columbia • Springfield: Sundown One • Spring Valley: Audio Labs • Sterling: Sterling Electronics  
**IN Bloomington:** Campus Audio • Bluffton: Eley TV & Appliance • Evansville: Riskey's • Ft. Wayne: Classic Stereo • Indianapolis: Ovalton • Lafayette: Good Vibes • Marion: Classic Stereo

**Michigan City:** Audio Connection • Muncie: Classic Stereo • South Bend: Classic Stereo • Terre Haute: Stereo Crafters  
**KS Junction City:** Audio Junction • Kansas City: Brands Mart • Overland Park: Audio Electronics • Brands Mart • Wichita: Audio Visions • Topeka: Nelson's  
**KY Bowling Green:** Audio Center • Lexington: Ovalton Audio • Louisville: Audio Video Buy Design • Owensboro, Paducah: Riskey's • Pikeville: Mayo Inc.  
**LA Alexandria:** Simpson Electronics • Latayette: Sound Electronics • Metairie & New Orleans: Allerman Audio  
**MA Boston:** Goodwins, Waltham Camera & Stereo • Fitchburg: Fitchburg Music • N. Dartmouth: Sound II • Pittsfield: H & S Stereo • Worcester: O'Connell's  
**ME Bangor:** Sound Source • Camden: Harbor Audio • Portland: New England Music  
**MD Baltimore:** Soundscape • Gaithersburg: Audio Buys  
**MI Ann Arbor:** Hi-Fi Buys • Birmingham: Almas Hi-Fi • Dearborn: Almas Hi-Fi • Farmington Hills: Almas Hi-Fi • Flint: Stereo Center • Grand Rapids: Classic Stereo • Iron Mountain: Sound North • Kalamazoo: Classic Stereo • Lansing: Midland: Hi-Fi Buys • Petoskey: Kurtz Music • Saginaw: Court St. Listening Room • Traverse City: Kurtz Music  
**MN Alexandria:** Sound Shop • Duluth: Mel's TV & Audio • Grand Rapids: Audio Files of Grand Rapids • Mankato: Audio King • Minneapolis & Suburbs: Audio King • Rochester: Audio King • St. Paul: Audio King  
**MO Cape Girardeau:** Stereo One • Columbia: Johnston Audio • Kansas City: Brands Mart • Springfield: Harvey's Stereo • St. Louis: Sound Central  
**MS Hattisburg:** McCalland TV • Jackson: Hoppers • Pascagoula: Empress  
**MT Billings:** Video Sat & Sound • Bozeman: Thrifty Ear • Great Falls: Rocky Mountain Hi-Fi • Kallispell: Audio Visions • Missoula: Aspen Sound  
**NC Boone:** Holtzons • Chapel Hill: Stereo Sound • Charlotte: Audio Video Systems • Conover • Tri-City • Greensboro: Stereo Sound • Hendersonville: Pro Sound • Kinston: Stereo Concepts • Moorehead City: Anderson Audio • New Bern: Anderson Audio • Raleigh: Audio Buys, Stereo Sound • Rocky Mount: Microwave Audio • Wilmington: Atlantic Audio • Wilson: Modern Stereo  
**ND Bismarck:** Pacific Sound • Fargo: Today Electronics  
**NE Kearney:** Midwest Audio • Lincoln: Stereo West • Omaha: Stereo West • York: Midwest Audio  
**NH Concord:** Audio of New England • Laconia: Lakeside Stereo • North Hampton: The New Audiophile • Salem: Cuomo's  
**NJ East Brunswick:** Atlantic Stereo • Maple Shade: Bryn Mawr Stereo • Montclair: Perdue Radio • Paramus: Harvey Electronics • Raritan: AC Audio • Ridgewood: Sounding Board • Shrewsbury: Monmouth Stereo • Toms River: Rands Camera • Wall Twp.: Monmouth Stereo • West Caldwell: Perdue Radio  
**NM Alamogordo:** D&K Electronics • Albuquerque: West Coast Sound • Carlsbad: Beason's • Clovis: Towne Crier • Santa Fe: West Coast Sound  
**NV Elko:** Elko Audio • Las Vegas: Upper Ear • Reno: Good Guys • South Shore Lake Tahoe: Audio Video Den  
**NY Albany:** Clark Music • Amherst: Speaker Shop • Batavia: Unicom Audio • Buffalo: Speaker Shop • Corning: Chemung • Elmira: Chemung • Forest Hills: Continental Sound • Fredonia: Studio One • Glens Falls: Audio Genesis • Goshen: Longplayer's Stereo • Ithaca: Chemung, Sound Image • Jamestown: Studio One • Manhasset: Audio Breakthroughs • Massena: Hi-Fi Shop • Newburgh: Audio Expressions • New Hartford: Adirondack Music • New York City: Audio Breakthroughs, Electronic Workshop, Harvey Electronics • Plattsburgh: Alpha Stereo • Rochester: JB Sound • Scarsdale: Listening Room • Syracuse: Clark Music • Vestal: Hart Electronics • White

**Plains:** Harvey Electronics • Woodbury: Audio Breakthroughs  
**OH Akron:** Audio Craft • Canton: Belder Audio • Cleveland & Suburbs: Audio Craft • Cincinnati: Stereo Lab • Columbus: Stereo Lab • Dayton: Stereo Showcase • Findlay: Audio Craft • Lima: Classic Stereo • Toledo: Audio Craft  
**OK Lawton:** Hi-Fi Shop • Oklahoma City: Audio Dimensions • Shawnee: Rave Sounds • Stillwater: Cartunes • Tulsa: Audio Advice  
**OR Eugene:** University Hi-Fi • Grants Pass: Sheekelis • Medford: Sheekelis • Salem: Kelly's Home Center  
**PA Allentown:** Bryn Mawr Stereo • Blakely: Hart Electronics • Bryn Mawr: Bryn Mawr Stereo • Camp Hill: Bryn Mawr Stereo • Chambersburg: Sunrise Electronics • Erie: Studio One • Harrisburg: Bryn Mawr Stereo • Johnstown: Gary's Entertainment • Kingston: Hart Electronics • Lancaster: G'nT Stereo • Longhorne: Bryn Mawr • Montgomeryville: Bryn Mawr Stereo • Natrona Heights: Stereo Land • Philadelphia & Suburbs: Bryn Mawr Stereo • Pitsburgh: Audio Junction • Quakertown: Bryn Mawr Stereo • Reading: G'nT Stereo • Sellersville: Stereo Shoppe • State College: Paul & Tony's Stereo • Stroudsburg: Main St. Audio Video • Westport: Audio Insight • Williamsport: Robert M. Sides  
**PUERTO RICO Rio Piedras:** Precision Audio  
**RI Middletown:** Flini Audio • N. Providence: Eastern Music  
**SC Anderson:** Music Machine • Charleston: Audio Warehouse • Columbia: Music Machine • Greenville: Music Machine • Greenwood: Stereo Shop • Spartansburg: Stereo Shop  
**SD Aberdeen:** Engel Music • Rapid City: Team Electronics • Sioux Falls: Audio King  
**TN Chattanooga:** R&R TV • Cookeville: Lindsey Ward • Jackson: New Wave Electronics • Kingsport: Audition • Knoxville: Lindsey Ward • McMinnville: Lindsey Ward • Memphis: New Wave Electronics • Nashville: Hi-Fi Buys  
**TX Amarillo:** Sound Systems Ltd. • Arlington: Sound Idea • Austin: Marcum Electronics • College Station: Audio Video • Corpus Christi: Tape Town • Dallas: Americall • El Paso: Soundquest • Ft. Worth: Sound Idea • Houston: Sheffield Audio • Hurst: Sound Idea • Laredo: Meter International • Longview: Audio Techniques • Lubbock: Electronics Supercenter • McAllen: Metex • San Antonio: Mobile Hi-Fi • San Marcos: Discovery Audio Video • Sherman: Worldwide Stereo • Temple: Audio Tech • Tezakarna: Sound Town • Victoria: Dye Electronics • Waco: Audio Tech  
**UT Logan:** Stokes Brothers • Salt Lake City: Broadway Music • St. George: Boulevard Home Furnishings  
**VA Bristol:** Audition • Charlottesville: Holdrens • Falls Church: Manassas • Audio Buys • Farrisberg: Ace Music • N. Electronics • Richmond: Gary's Stereo • Roanoke: Holdrens • Virginia Beach: Digital Sound  
**VT Brattleboro:** Scientific Stereo • Essex Junction: Creative Sound • Rutland: Mountain Music  
**WA Bellingham:** QC Stereo • Chelan: Music Store • Dak Harbor: QC Stereo Center • Seattle/Bellvue/Lynnwood: Magnolia • Spokane: Electracraft (Hal's) • Tacoma: Magnolia  
**WI Appleton:** Sound World • Eau Claire: EME Audio Systems • Fond Du Lac: Audio Plus • Green Bay: Sound World • Lacrosse: Sound World • Madison: Happy Medium • Marinette: Sound Seiler • Milwaukee: Audio Emporium • Oshkosh: Audio Plus • Ripon: Audio Plus • Wausau: Sound World  
**WV Barboursville, Beckley, Charleston:** Pied Piper • Clarksburg: Audio Visual Concepts • Huntington: Pied Piper Video Warehouse • Piedmont: Sound Gallery • Wheeling: Stereo Lab  
**WY Cheyenne:** Electronics Unlimited • Gillette: Sheridan: Star Video Library

## Audio Den Ltd.

Authorized Sales and Service

- ADCOM \*
- ARAGON
- ARCAM
- B & K
- CAL
- CELESTION
- CONRAD JOHNSON
- HAFLER
- KLIPSCH
- MAGNEPAN
- MIRAGE
- MIT CABLES
- MONSTER CABLES
- NAD
- NAKAMICHI \*
- PARADIGM
- ROGERS
- SHURE ULTRA
- SONOGRAPHE
- SOTA
- SOUNDSTREAM
- STAX
- THETA DIGITAL
- VAN DEN HUL
- VELODYNE
- VTL
- WELL TEMPERED
- YAMAHA \*

\* IN STORE ONLY

2021 SMITH HAVEN PLAZA (Route 347)  
LAKE GROVE, NY 11755

(516) 360-1990

Auditions By Appointment

## THE FINEST IN HOME AUDIO, CAR STEREO & VIDEO EQUIPMENT

### AUTHORIZED DEALER FOR

- ADS
- ADVENT
- AIWA
- AKG
- ALTEC LANSING
- AUDIO CONTROL
- AUDIO SOURCE
- CERWIN-VEGA
- CITIZEN
- CWD
- dbx
- DENON
- HAFLER
- INFINITY (car)
- KENWOOD
- KICKER
- MITSUBISHI
- MONSTER CABLE
- MISSION
- ONKYO
- ORION CAR AMPS
- PHILIPS
- PINNACLE AUDIO
- POLK AUDIO (car)
- PROTON
- SAE
- SANSUI
- SONANCE
- SONY
- SOUND CRAFTSMEN
- STAX
- TOSHIBA
- TRIAD
- YAMAHA

**Sound CITY**  
**Meadtown Shopping Center**  
**Route 23 South**  
**Kinnelon, N.J. (201) 838-3444**

## The Sound Seller

For the Musical Difference

Authorized Dealer For:

- |               |               |
|---------------|---------------|
| Acoustal      | NAD           |
| Audio Control | Belles        |
| Nitty Gritty  | CWD           |
| M&K           | dbx           |
| Nakamichi     | Fried         |
| Oracle        | Harman Kardon |
| Polk          | JBL           |
| PROAC         | Onkyo         |
| Proton        | Gardo         |
| STAX          | Lexicon       |
| Thorens       | Celestion     |
| Dahlguit      | DCM           |
| Hafner        | Niles         |
| Monster Cable | Kinergetics   |
| Citation      | Duntech       |
| Velodyne      | Carver        |

1706 Main St.  
Mannette, WI 54143  
(715) 735-9002

## RETAIL MART

### AN EXCLUSIVE MEDIUM FOR ALL RETAILERS OF AUDIO AND VIDEO EQUIPMENT

The STEREO REVIEW Retail Mart is an ideal forum to reach interested audio/video enthusiasts who are active buyers themselves, and who advise others on stereo and video purchases. The Retail Mart is an exclusive section designed to showcase your advertising in STEREO REVIEW, and since the manufacturers of many of the brands you sell consistently advertise in STEREO REVIEW, your impact is even greater!

CALL US TODAY TO PLACE YOUR AD  
**IN THE STEREO REVIEW RETAIL MART**  
**AND MAKE STEREO REVIEW READERS YOUR CUSTOMERS!**  
**(800) 445-6066**

**polkaudio**  
The Speaker Specialists®







# STEREO REVIEW CLASSIFIED

FOR MORE ADVERTISING INFORMATION CALL 1-800-445-6066

FOR SALE

## RELIABLE AUDIO/VIDEO

1-800-525-9922 • U.S.A. SALES

JVC AUDIO	JVCHRS10000	HARMON KARDON
RX1010 STOCK	JVCHRS8000 819	HK990 729
XL21010 STOCK	JVCHRS6600 799	HK880 509
TDV1010 STOCK	JVCHRS5500 679	TU920 269
XP41010 STOCK	JVCHRD5000 499	HD7500 299
AX21010 STOCK	JVCHRD4000 459	HD7600 389
FX1010 STOCK	JVCGRS77 979	TD302 329
RX901 539	ADVENT	HK645 329
RX801 359	MAESTRO 449	HK6900 819
RX701 309	LEGACY 289	CITATION23 449
RX501 259	PRODIGY 219	BOSE
XML701 339	TOWERS 219	AM5 CALL
XML401 239	BBY2 139	SE5 CALL
XL2611 289	INOUTDOOR 129	TO2 STOCK
XLG512 319	CANON CAMCORD	D2 STOCK
TDV621 359	A1 1399	6.2 STOCK
TDV21 315	A2 STOCK	4.2 STOCK
TDW901 299	460 1319	2.2 STOCK
TDW801 239	440 1019	901 STOCK
TDW501 199	708 1029	101 STOCK

SONY VCR	PANASONIC	INFINITY	PIONEER
SLV757 729	PANPV5575 1599	KAPPA9 CALL	VSK9300S 549
SLV555 475	PANPV5565 1669	KAPPA8 CALL	VSK9500S 619
SLHF870D 739	PANPV5550 1419	KAPPA7 CALL	VSX7500S 529
SLHF360 349	PANPV5540 1219	KAPPA6 CALL	VSX5500S 429
CAMCORDER	PANPV530 1219	KAPPA5 279	VSX5400 389
CCDF45 819	PANPV520 989	RS6001 CALL	VSX4500S 369
CCDF35 739	PANPV5180 1189	RS5001 CALL	VSX4400 339
CCDF50 875	PANPV5140 1075	RS4001 CALL	PDM710 389
CCDF70 919	PANPV4990 1229	RS3001 CALL	PDM610 285
CCDR75 1029	PANPV4980 679	RS2001 CALL	PD7300 329
SONY AUDIO	RCACC320 999	SM150 265	PD7503 209
STRAV910 329	RCACC360 1159	SM120 149	CTW910R 389
STRAV1010 459	RCACC310 879	JBL	CTW710R 275
STRAV2010D689	QUASAR	L100TBO CALL	CTS705 289
CDCP700 285	VM25 849	L80TBO CALL	CTS605 235
CDCP900 319	VM29 849	L60TBO CALL	SP7000 425
CDCP100 399	VM34 869	L20TBO CALL	CLD3070 819
CDCP970 339	VM23 699	ACOUSTIC RESEARCH	CLD2070 639
TCWR810 340	YAMAHA	PROTON CALL	CLD1070 399
CERWIN VEGA	DENON CALL		LDB70 339
D1H 179pair			PROLINE CALL
D2H 229pair			
D3H 299pair			
DH1 519pair			
SW12B 159			

All items include Manufacturer's U.S.A. Warranty & are new. Service call fee policy only. 1 day defective exchange some models include. Shipping charges not refundable. C.O.D., checks, & Discover Card Welcome. No sales tax outside of NYS. 5 Year Extended Warranty with license fee \$69.99.  
RELIABLE AUDIO/VIDEO 933 CONEY ISLAND AVE., BKLYN, NY 11220

LOW PRICES—HIGH END EQUIPMENT: Carver, Nakamichi, Infinity, Hafler, Luxman, ADS, B&K, Bose, Onkyo, Proton, Phillips and much more! (414) 725-4431.

CASH FOR ALL TYPES of Used Stereo equipment. We buy by phone. THE STEREO TRADING OUTLET, 320 Old York Rd., Jenkintown, PA 19046. (215) 886-1650.

HIGH-END, LOW PRICES. ADS+BANG & OLUFSEN + CARVER+DBX+DENON+H/K+NAKAMICHI AND MANY MORE! FULL MANUFACTURERS WARRANTY. TECH ELECTRONICS SYSTEMS. SINCE 1981. GAINESVILLE, FL. (904) 730-3885.



## The mark of a true Denon.

This sticker tells you who is an authorized Denon dealer and who isn't. Some people who offer Denon products are not authorized dealers. That can lead to problems. First, only authorized dealers offer you the protection of a Denon warranty with your purchase: at other dealers, you may have no warranty at all. Authorized Denon dealers stock only components designed for the U.S., and have the training to help you select the one right for you. Authorized dealers know Denon technology inside and out and stock factory parts for your Denon to preserve true Denon sound. So before you buy your Denon, look for this Denon Authorized Dealer Sticker. It assures you of the authentic Denon technology and support you expect. And nothing less.

To find your nearest AUTHORIZED Denon Dealer call: 1-201-575-7810 (9:00 am-5:00 pm EST) **DENON**

WE SELL SECOND HAND high quality audio-video with money back guarantee! Send your name and address for FREE monthly inventory. Ross Stereo, 2423 Morena Blvd. San Diego, CA 92110. (619) 275-3632.

THE BEST RECORD RACK IN AMERICA. Stackable, portable, oak units hold LPs, CDs & tapes. Free Mailorder Brochure. (please mention Stereo Review) Per Madsen Design: (415) 928-4509. P.O. Box 330101, San Francisco, CA 94133.

## THE MINI AD WITH MAXI SAVINGS

### S.B.H. ENTERPRISES

1678 - 53rd ST, BKLYN, NY 11204 • MON-FRI 8-7, SUN 9-6  
CALL 1-800-451-5851 / In NYC (718) 438-1027

CAR ELECTRONICS			
WHISTLER	BEL	BLAUPUNKT	CAR RADIOS
New Spectrum 3 219.00	944 Express III 194.95	New Lexington SQR48 387.00	Alpine SQR75 259.00
Spectrum 2 157.00	977 KM1 149.00	Los Angeles SQR48 337.00	San Francisco SQR75 297.00
Spectrum 2 Rim 189.95	976 Victor III 150.00	Portland SQR28 259.00	San Diego SQR28 259.00
Spectrum 1 98.95		Beacon 239.00	
Whisper 500 Rim 133.50		Phonix 219.00	
		Owner SQR25 199.00	
SHERWOOD			
COBRA	TECHNICS <td colspan="2">MINI/MAXI REARVIEW CALCULATORS</td>	MINI/MAXI REARVIEW CALCULATORS	
RD9 163.00	CDR 10 699.00	CDR5 495.00	HP17B 81.50
RD7 109.00	CDR 902 149.00	CDR 105 189.00	HP17C 79.00
RD5 109.00	CDR 100 274.00	CDR 1000 279.00	HP17D 79.00
RD4 109.00	CDR 940 349.00	CDR 950 437.00	HP225 42.95
RD3 109.00	CDR 930 279.00	CDR 100 189.00	HP275 74.95
RD2 109.00	CDR 920 349.00	CDR 900 189.00	HP275 74.95
RD1 109.00	CDR 910 349.00	CDR 800 189.00	HP275 74.95
RD0 109.00	CDR 900 349.00	CDR 700 189.00	HP275 74.95
RD0 109.00	CDR 800 349.00	CDR 600 189.00	HP275 74.95
RD0 109.00	CDR 700 349.00	CDR 500 189.00	HP275 74.95
RD0 109.00	CDR 600 349.00	CDR 400 189.00	HP275 74.95
RD0 109.00	CDR 500 349.00	CDR 300 189.00	HP275 74.95
RD0 109.00	CDR 400 349.00	CDR 200 189.00	HP275 74.95
RD0 109.00	CDR 300 349.00	CDR 100 189.00	HP275 74.95
RD0 109.00	CDR 200 349.00	CDR 0 189.00	HP275 74.95
RD0 109.00	CDR 100 349.00	CDR -100 189.00	HP275 74.95
RD0 109.00	CDR 0 349.00	CDR -200 189.00	HP275 74.95
RD0 109.00	CDR -100 349.00	CDR -300 189.00	HP275 74.95
RD0 109.00	CDR -200 349.00	CDR -400 189.00	HP275 74.95
RD0 109.00	CDR -300 349.00	CDR -500 189.00	HP275 74.95
RD0 109.00	CDR -400 349.00	CDR -600 189.00	HP275 74.95
RD0 109.00	CDR -500 349.00	CDR -700 189.00	HP275 74.95
RD0 109.00	CDR -600 349.00	CDR -800 189.00	HP275 74.95
RD0 109.00	CDR -700 349.00	CDR -900 189.00	HP275 74.95
RD0 109.00	CDR -800 349.00	CDR -1000 189.00	HP275 74.95
RD0 109.00	CDR -900 349.00	CDR -1100 189.00	HP275 74.95
RD0 109.00	CDR -1000 349.00	CDR -1200 189.00	HP275 74.95
RD0 109.00	CDR -1100 349.00	CDR -1300 189.00	HP275 74.95
RD0 109.00	CDR -1200 349.00	CDR -1400 189.00	HP275 74.95
RD0 109.00	CDR -1300 349.00	CDR -1500 189.00	HP275 74.95
RD0 109.00	CDR -1400 349.00	CDR -1600 189.00	HP275 74.95
RD0 109.00	CDR -1500 349.00	CDR -1700 189.00	HP275 74.95
RD0 109.00	CDR -1600 349.00	CDR -1800 189.00	HP275 74.95
RD0 109.00	CDR -1700 349.00	CDR -1900 189.00	HP275 74.95
RD0 109.00	CDR -1800 349.00	CDR -2000 189.00	HP275 74.95
RD0 109.00	CDR -1900 349.00	CDR -2100 189.00	HP275 74.95
RD0 109.00	CDR -2000 349.00	CDR -2200 189.00	HP275 74.95
RD0 109.00	CDR -2100 349.00	CDR -2300 189.00	HP275 74.95
RD0 109.00	CDR -2200 349.00	CDR -2400 189.00	HP275 74.95
RD0 109.00	CDR -2300 349.00	CDR -2500 189.00	HP275 74.95
RD0 109.00	CDR -2400 349.00	CDR -2600 189.00	HP275 74.95
RD0 109.00	CDR -2500 349.00	CDR -2700 189.00	HP275 74.95
RD0 109.00	CDR -2600 349.00	CDR -2800 189.00	HP275 74.95
RD0 109.00	CDR -2700 349.00	CDR -2900 189.00	HP275 74.95
RD0 109.00	CDR -2800 349.00	CDR -3000 189.00	HP275 74.95
RD0 109.00	CDR -2900 349.00	CDR -3100 189.00	HP275 74.95
RD0 109.00	CDR -3000 349.00	CDR -3200 189.00	HP275 74.95
RD0 109.00	CDR -3100 349.00	CDR -3300 189.00	HP275 74.95
RD0 109.00	CDR -3200 349.00	CDR -3400 189.00	HP275 74.95
RD0 109.00	CDR -3300 349.00	CDR -3500 189.00	HP275 74.95
RD0 109.00	CDR -3400 349.00	CDR -3600 189.00	HP275 74.95
RD0 109.00	CDR -3500 349.00	CDR -3700 189.00	HP275 74.95
RD0 109.00	CDR -3600 349.00	CDR -3800 189.00	HP275 74.95
RD0 109.00	CDR -3700 349.00	CDR -3900 189.00	HP275 74.95
RD0 109.00	CDR -3800 349.00	CDR -4000 189.00	HP275 74.95
RD0 109.00	CDR -3900 349.00	CDR -4100 189.00	HP275 74.95
RD0 109.00	CDR -4000 349.00	CDR -4200 189.00	HP275 74.95
RD0 109.00	CDR -4100 349.00	CDR -4300 189.00	HP275 74.95
RD0 109.00	CDR -4200 349.00	CDR -4400 189.00	HP275 74.95
RD0 109.00	CDR -4300 349.00	CDR -4500 189.00	HP275 74.95
RD0 109.00	CDR -4400 349.00	CDR -4600 189.00	HP275 74.95
RD0 109.00	CDR -4500 349.00	CDR -4700 189.00	HP275 74.95
RD0 109.00	CDR -4600 349.00	CDR -4800 189.00	HP275 74.95
RD0 109.00	CDR -4700 349.00	CDR -4900 189.00	HP275 74.95
RD0 109.00	CDR -4800 349.00	CDR -5000 189.00	HP275 74.95
RD0 109.00	CDR -4900 349.00	CDR -5100 189.00	HP275 74.95
RD0 109.00	CDR -5000 349.00	CDR -5200 189.00	HP275 74.95
RD0 109.00	CDR -5100 349.00	CDR -5300 189.00	HP275 74.95
RD0 109.00	CDR -5200 349.00	CDR -5400 189.00	HP275 74.95
RD0 109.00	CDR -5300 349.00	CDR -5500 189.00	HP275 74.95
RD0 109.00	CDR -5400 349.00	CDR -5600 189.00	HP275 74.95
RD0 109.00	CDR -5500 349.00	CDR -5700 189.00	HP275 74.95
RD0 109.00	CDR -5600 349.00	CDR -5800 189.00	HP275 74.95
RD0 109.00	CDR -5700 349.00	CDR -5900 189.00	HP275 74.95
RD0 109.00	CDR -5800 349.00	CDR -6000 189.00	HP275 74.95
RD0 109.00	CDR -5900 349.00	CDR -6100 189.00	HP275 74.95
RD0 109.00	CDR -6000 349.00	CDR -6200 189.00	HP275 74.95
RD0 109.00	CDR -6100 349.00	CDR -6300 189.00	HP275 74.95
RD0 109.00	CDR -6200 349.00	CDR -6400 189.00	HP275 74.95
RD0 109.00	CDR -6300 349.00	CDR -6500 189.00	HP275 74.95
RD0 109.00	CDR -6400 349.00	CDR -6600 189.00	HP275 74.95
RD0 109.00	CDR -6500 349.00	CDR -6700 189.00	HP275 74.95
RD0 109.00	CDR -6600 349.00	CDR -6800 189.00	HP275 74.95
RD0 109.00	CDR -6700 349.00	CDR -6900 189.00	HP275 74.95
RD0 109.00	CDR -6800 349.00	CDR -7000 189.00	HP275 74.95
RD0 109.00	CDR -6900 349.00	CDR -7100 189.00	HP275 74.95
RD0 109.00	CDR -7000 349.00	CDR -7200 189.00	HP275 74.95
RD0 109.00	CDR -7100 349.00	CDR -7300 189.00	HP275 74.95
RD0 109.00	CDR -7200 349.00	CDR -7400 189.00	HP275 74.95
RD0 109.00	CDR -7300 349.00	CDR -7500 189.00	HP275 74.95
RD0 109.00	CDR -7400 349.00	CDR -7600 189.00	HP275 74.95
RD0 109.00	CDR -7500 349.00	CDR -7700 189.00	HP275 74.95
RD0 109.00	CDR -7600 349.00	CDR -7800 189.00	HP275 74.95
RD0 109.00	CDR -7700 349.00	CDR -7900 189.00	HP275 74.95
RD0 109.00	CDR -7800 349.00	CDR -8000 189.00	HP275 74.95
RD0 109.00	CDR -7900 349.00	CDR -8100 189.00	HP275 74.95
RD0 109.00	CDR -8000 349.00	CDR -8200 189.00	HP275 74.95
RD0 109.00	CDR -8100 349.00	CDR -8300 189.00	HP275 74.95
RD0 109.00	CDR -8200 349.00	CDR -8400 189.00	HP275 74.95
RD0 109.00	CDR -8300 349.00	CDR -8500 189.00	HP275 74.95
RD0 109.00	CDR -8400 349.00	CDR -8600 189.00	HP275 74.95
RD0 109.00	CDR -8500 349.00	CDR -8700 189.00	HP275 74.95
RD0 109.00	CDR -8600 349.00	CDR -8800 189.00	HP275 74.95
RD0 109.00	CDR -870		



LOUDSPEAKER COMPONENTS—KITS. Eton, Dynaudio, Focal, Eclipse. Catalog \$1. Meniscus, 2442 28th St. S.W. Wyoming, MI 49509. (616) 534-9121.

**SERIOUS AUDIOPHILES DESERVE SERIOUS SERVICE.**

And that's what you will get at Reference Audio/Video. We offer the best in high-end audio and the best in friendly service by our knowledgeable staff. From the latest CD players to the finest high-power amplifiers, you'll like our surprisingly affordable prices and fast shipping.

**Holiday Gift Certificates Available**

**AUDIO/VIDEO Reference**

Call us at (213) 517-1700

18214 Dalton Ave, Dept. S, Gardena, CA 90248  
Hours: M-F 9 to 6, Sat. 9 to 1 Pacific Time

LOW PRICES!! NAKAMICHI, CARVER, BOSTON ACOUSTICS, LUXMAN, HAFLER, ADS, B&K, KEF, ONKYO, PROTON, BOSE, SNELL, DCM, M&K, PS AUDIO & OTHERS!! SOUND ADVICE: (414) 727-0071.

**GRADO SHURE audio-technica**

**YOUR SEARCH IS OVER!**

specializing in hard to find phono cartridges and original replacement styl only!!

CALL TOLL-FREE FOR FREE PRICE QUOTES AND VISA/MC ORDERS N.Y. STATE (516) 599-1112

SEND SELF-ADDRESSED STAMPED ENVELOPE FOR OUR FREE CATALOG.

Phones Open Mon - Sat 9 am-8 pm

**LYLE CARTRIDGES**  
Dept. SR, Box 158  
Valley Stream, N.Y. 11582

ortofon LAST (800) 221-0906

STANTON MONSTER CABLE BANG & OLUFSEN PICKERING

"STEREO WORLD" IS YOUR DISCOUNT MAILORDER SOURCE WITH SUPER DEALS ON HOME AND CAR STEREO LINES INCLUDING: KENWOOD, TECHNICS, ROCKFORD-FOSGATE, PANASONIC, JVC, SONY, PYLE, PIONEER, SHERWOOD, HI-FONICS, BLAUPUNKT, AUTOTEK, BAZOOKA, ADVENT, AND MANY OTHERS. CALL OR WRITE FOR FREE CATALOG. FREE UPS IN 48 STATES. 10AM-6PM MON-FRI; WEDNESDAY TIL 6:30PM VISA/MC; COD EXTRA. "CELEBRATING OUR 3RD YEAR." P.O. BOX 596, MONROE, NY 10950. (914) 782-6044.

WE SELL MORE HIGH PERFORMANCE SPEAKER KITS than anyone in the U.S. FREE CATALOG: 1 (800) 346-9183. AUDIO CONCEPTS Dept. A. 901 S. 4th St., LaCrosse, WI 54601.

CABLE TV DESCRAMBLERS—FREE CATALOG! 1-800-648-7938. Jerrold, Oak, Hamlin, etc. Guaranteed Lowest Prices. Warranties, Immediate Delivery. MC/VISA/COD. Republic Cable Products, Inc., 4080 Paradise Road, #15, Dept. 702, Las Vegas, NV 89109.

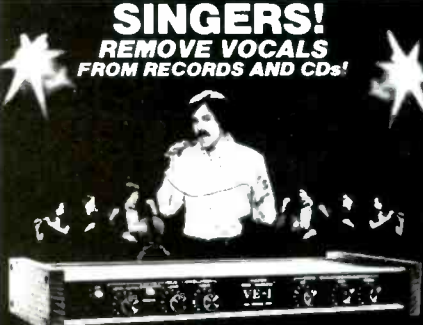
HIGH-END LOUDSPEAKER systems, speaker kits and the widest selection of raw drivers from the world's finest manufacturers. For beginners and audiophiles. Free catalog. A&S SPEAKERS. 3170 23rd St., San Francisco, CA 94110. (415) 641-4573

**CALL US LAST**

WE WILL **BEAT ANY PRICE** PRINTED IN THIS MAGAZINE ON AUDIO & CAR STEREO

**The SOUND Approach**  
6067 Jericho Tpke., Commack, NY 11725  
FAST DELIVERY FULL WARRANTY (516) 499-7680

**SINGERS! REMOVE VOCALS FROM RECORDS AND CDs!**



**SING WITH THE WORLD'S BEST BANDS!**  
An Unlimited supply of Backgrounds from standard stereo records! Record with your voice or perform live with the backgrounds. Used in Professional Performance yet connects easily to a home component stereo. This unique product is manufactured and sold exclusively by LT Sound - Not sold through dealers. Call or write for a Free Brochure and Demo Record.  
**LT Sound, Dept. SR-3, 7980 LT Parkway Lithonia, GA 30058 (404) 482-4724**  
Manufactured and Sold Exclusively by LT Sound  
**24 HOUR PHONE DEMO LINE: (404) 482-2485**

PHILIPS, AUDAX, PEERLESS, FOCAL, AND DYNAUDIO LOUDSPEAKERS in stock with good prices and competent services. Crossover components also. MADISOUND SPEAKER COMPONENTS, 8608 University Green, Box 4283, Madison, WI 53711. (608) 831-3433.

**SAVE 40% ON HIGH-END home speakers, subwoofers, amplifiers. FREE CATALOG!**  
RTRD, 3021 Sangamon Ave., Springfield, IL 62702. (217) 529-8793.

CABLE TV CONVERTERS/DESCRAMBLERS Guaranteed lowest prices in U.S., Jerrold, Hamlin, Zenith—many others! Lowest dealer prices! Orders shipped within 24 hours! MasterCard—Visa—C.O.D. accepted. Free catalog—call (800) 345-8927 only! Pacific Cable Co., Inc., 7325 1/2 Reseda Blvd., 1358, Reseda, CA 91335. All other information, call (818) 716-5914.

EXPERIENCED, FRIENDLY ADVICE! AUDIRE, PS, CWD, STAX, KINERGETICS, THORENS, MIRAGE, GRADO, FRIED, MONSTER CABLE, QUAD, SPICA, STRAIGHT-WIRE, more. Immediate, FREE Shipping! READ BROTHERS STEREO, 593-B King Street, Charleston, South Carolina 29403. (803) 723-7276.

**CALL TOLL FREE! 1(800) 826-0520.**  
ONKYO \* NAD \* HARMAN KARDON \* PROTON \* AUDIO CONTROL \* CITATION \* JBL \* LEXICON \* HAFLER \* M&K \* STAX \* CELESTION \* KINERGETICS \* NITTY GRITTY \* PROAC \* DAHLQUIST \* BELLES \* dbx \* FRIED \* ORACLE \* THORENS \* CWD \* THORENS \* MONSTER CABLE \* DCM \* GRADO \* NILES \* SOUND SELLER, 1706 MAIN ST., MARINETTE, WI 54143. FAX # (715) 735-5838, PHONE (715) 735-9002.

**RECORDS**  
RECORD COLLECTORS' SUPPLIES. REPLACEMENT JACKETS, inner sleeves, 78 RPM sleeves, CLD boxes, etc. COMPLETE CATALOG. Cabco, Box 8212, Room 640, Columbus, Ohio 43201.

A.S.Q. SOUNDTRACKS/O.C. DISCOUNT PRICES, QUALITY GUARANTEED, FAST DEPENDABLE SERVICE. SEND FOR FREE MONTHLY CATALOG: A.S.Q. DEPT. A, P.O. BOX 404, SEELYVILLE, IN 47878. (812) 299-4154.

FREE RECORD, CASSETTE AND COMPACT DISC CATALOG: Features a tremendous selection of remastered LP new releases at discount prices. Many imports and smaller labels offered. Prompt delivery. Rose Records, Dept. SR, 214 SO. Wabash Avenue, Chicago, IL 60604.

FROM EDISON TO ELVIS (AND BEYOND) LP'S, 78'S 45'S etc. Visit or mail-in wants. The Olde Time Music Scene. 915 Main Street, Boonton, NJ 07005. (201) 335-5040. Tuesday-Sunday.

We buy and sell **LP vinyl records**

Over 100,000 titles in stock

139 West 72nd Street  
New York, NY 10023

**Rare Records Ltd. 212 877-5020**

1,000,000 Soundtracks—Broadway LPs/Videomovies. Sound-track catalogue—\$1.00. Video—\$1.00. RTSR, Box 750579, Petaluma, California 94975

**COMPACT DISCS**  
OVER 8000 USED CD's. \$5.99 to \$9.99. Buy/Sell, 5th Year, Shipping \$2.50 UPS, Visa/MC. Send \$2 for sample of monthly 24 page catalog. Audio House CD Club, 4304 Brayan, Swartz Creek, Michigan 48473. (313) 655-8639.

COMPACT DISCS—At low warehouse prices. Now in our 5th year. CATALOG: Send \$2.00, OZ ENTERTAINMENT, 1575 P Highway 29, Lawrenceville, GA 30244.

LOW COMPACT DISC prices—Schwann CD and COLOR CATALOGS \$7.00—Mini-Catalogs \$2.00—DUWARS, P.O. Box 6662-D, Greenville, SC 29606.

LIKE-NEW CD'S \$4.99, UP. We pay you up to \$6.00! FREE STOCKLIST: CCM, 1105 Webster, Sandy, Utah 84094-3151. (801) 571-9767.

**SAVE MONEY ON NEW CD's. Free Details.**  
WILBUR TANSTAAFL COMPANY, Box 308F, Middlefield, CT 06455-0308.

COMPACT DISC PRICES STARTING AT \$5.99. SEND \$1 FOR CATALOG, REFUNDABLE WITH ORDER. HARRIS HOUSE OF MUSIC, BOX 388759, DEPT. SR, CHICAGO, IL 60638.

ARCHITECTURALLY DESIGNED CLASSICAL STYLE CD CABINETS. hand-made of solid oak. FREE brochure. ZEAL HARDWOOD DESIGN CO., Dept. SR1, 4 Benjamin Road, Lexington, MA 02173. (617) 861-1705.

**NEW INFORMATION!**

Call **1-800-828-7685** and get a **FREE** copy of the booklet: **COMPACT DISC UPDATE: Sound Quality and Technical Evolution from Philips & DuPont Optical.**



PHILIPS AND DUPONT OPTICAL

CD-BINDER and other compact disc storage solutions. Call 1-800-992-6262, Fax (614) 793-0202 or write for FREE CATALOG. Univenture, Inc., Dept. SR, Box 570, Dublin, Ohio 43017.

CD-SINGLES, CD-EP'S CD PICTURE DISCS-EP'S AND RARE CD'S. For catalog call (305) 594-1811, Music Service, P.O. Box 561751, Miami, FL 33256-1751.

NEW CD'S, TAPES & LP'S. ORIGINAL ARTISTS/LABELS 2-FOR-1 WITH COUPON. 20 COUPONS/BOOK. NO EXPIRATION DATE. COUPON BOOK \$7. PHOENIX PROMOTIONS, 411 S. EUCLID, #242, PARK RIDGE, IL. 60068

WHICH ONE GOT THE RAVES? Catalog of Award-Winning Classical CDs. Your handiest guide to outstanding recordings. \$10.00. (Sample pages available) KEN'S KOMPENDIUM, 2400 Hawthorne Dr., Atlanta, GA 30345.

OVER 19,000 COMPACT DISC TITLES at UNBEATABLE PRICES! VISA/MC. 200-Page Catalog. Factory New. DIGITAL ENCOUNTERS (708) 759-9565.

COMPACT DISCS AT LOW DISCOUNT PRICES. FOR A FREE CATALOG CALL (201) 359-4439 OR WRITE: LASER LOCKER, BOX 8611-SR, SOMERVILLE, NJ 08876

### TAPES

4.95 SHIPPING ANY SIZE ORDER. UPS 1-800-245-6000

TKA	OCTAVE	SONY	MAXELL
MAJ 08	TE-15	80 SONY UZ-PRO 90	249 MS-80
MAJ 09	TE-30	80 SONY METAL ED-90	189 ML-80
MAJ 10	TE-45	139 FUJIFILM UR 90	99 FLR-80
MAJ 11	TE-60	119 MAXELL XLR-100	239 XLR-80
MAJ 12	TE-75	139 MAXELL XLR-100	239 XLR-80
MAJ 13	TE-90	139 MAXELL XLR-100	239 XLR-80
MAJ 14	TE-105	139 MAXELL XLR-100	239 XLR-80
MAJ 15	TE-120	139 MAXELL XLR-100	239 XLR-80
MAJ 16	TE-135	139 MAXELL XLR-100	239 XLR-80
MAJ 17	TE-150	139 MAXELL XLR-100	239 XLR-80
MAJ 18	TE-165	139 MAXELL XLR-100	239 XLR-80
MAJ 19	TE-180	139 MAXELL XLR-100	239 XLR-80
MAJ 20	TE-195	139 MAXELL XLR-100	239 XLR-80
MAJ 21	TE-210	139 MAXELL XLR-100	239 XLR-80
MAJ 22	TE-225	139 MAXELL XLR-100	239 XLR-80
MAJ 23	TE-240	139 MAXELL XLR-100	239 XLR-80
MAJ 24	TE-255	139 MAXELL XLR-100	239 XLR-80
MAJ 25	TE-270	139 MAXELL XLR-100	239 XLR-80
MAJ 26	TE-285	139 MAXELL XLR-100	239 XLR-80
MAJ 27	TE-300	139 MAXELL XLR-100	239 XLR-80
MAJ 28	TE-315	139 MAXELL XLR-100	239 XLR-80
MAJ 29	TE-330	139 MAXELL XLR-100	239 XLR-80
MAJ 30	TE-345	139 MAXELL XLR-100	239 XLR-80

VISA MC NO EXTRA CHARGE

SPECIAL OFFER FREE 100-30 WITH EVERY AUDIO ORDER

TAPE WORLD 220 SPRING ST. BUTLER PA 16001

TEN AMPEX 1800 REELS—USED ONCE, \$25.00 Sample: \$2.50. Also: New MAXELL Reels/Cassettes. AUDIO TAPES, Box 9584-A, Alexandria, VA 22304. (703) 370-5555 VISA/MC.

### LASER VIDEO DISCS

LASERDISC NATIONWIDE! Discount Sales + Fast U.P.S. Rentals. WIDESCREEN, IMPORT, NEWEST RELEASES. Free "FRESH VIEWS" Laser Newsletter. HOLLYWOOD NORTH ENTERTAINMENT SERVICES. 840 Piner Rd., Santa Rosa, Ca. 95403. (707) 575-1225.

COMPACT DISCS & LASER VIDEO DISCS. Huge inventory, domestic & import. Lowest prices! Used disc trade-ins. Pioneer Laserdisc Players in stock. FREE catalog. SIGHT & SOUND, 1275 Main Street, Waltham, MA 02154 (617) 894-8633, Fax: (617) 894-9329.

### INVENTIONS WANTED

A NEW IDEA? Call NATIONAL IDEA CENTER of Washington D.C. FREE INFORMATION—(800) 247-6600, Ext. 150. Come see THE INVENTION STORE!!

INVENTIONS/NEW PRODUCTS/IDEAS WANTED: Call TLCI for free information 1-800-468-7200, 24 hours/day—USA/CANADA.

### INSTRUCTION

FREE CATALOG. Institute of Audio/Video Engineering. 1831 Hyperion (SR), Hollywood, CA 90027. RECORDING SCHOOL. (800) 551-8877, (213) 666-2380. Approved for International Students. Member of NATTS.

TIVERTON AUDIO \$29.95 "HOW-TO" video tape shows all aspects of design, installation for built-in speaker systems plus catalogue of products. We'll help you save up to 50%. Call Us—800-234-7976.

BE A RECORDING ENGINEER. Train at home for High Paying—Exciting Careers. FREE information. AUDIO INSTITUTE, 2174 Union St., Suite 22AJ, San Francisco, CA 94123.

### MOVIE FILM VIDEO TAPE

CABLE TV CONVERTER BARGAIN HEADQUARTERS. ZENITH, TOCOM, JERROLD, HAMLIN, OAK, SCIENTIFIC ATLANTA, ETC. VISA/MC/COD CALL (800) 327-8544.

CABLE TV WIRELESS REMOTE CONVERTERS/DESCRAMBLERS. SALE/USE REGULATED BY FEDERAL LAW. T.J. SERVICES. (313) 979-8356.

We stock cable TV descrambling filters for all beeping channels, cable TV parts, wireless VCR senders, telephone equipment and other specialty items. FREE technical information. CALL NOW! (215) 352-6395.

### MISCELLANEOUS

TERMPAPER assistance. 15,278 papers available! 306-page catalog—rush \$2.00. Research, 11322 Idaho 206SX, Los Angeles 90025. TOLL FREE HOTLINE: (800) 351-0222 (California: (213) 477-8226).

WATCH REPLICAS! LOWEST PRICES GUARANTEED! NATIONWIDE! Warranty! Exact weight & color! 18KT Goldplated CALL (404) 963-3USA.

CLASSICAL MUSIC LOVERS' EXCHANGE™. Nationwide link between unattached music lovers. Write CMLE, Box 31, Pelham, NY 10803.

CONFISCATED CARS, trucks, boats, 4 wheelers, motorhomes, by FBI, IRS, DEA. Available in your area now. Call (805) 682-7555 Ext. C-1005.

### SERVICES

SPEAKER REPAIR & RECONING. Highest quality, lowest prices. NORTHWOODS AUDIO, 4078 Church Rd., Conover, Wisc. 54519. Ph. (715) 479-7532.

### BUSINESS OPPORTUNITIES

MAILORDER OPPORTUNITY! Start profitable home business without experience or capital. Information Free. Mail Order Associates, Inc., Dept. 564, Montvale, NJ 07645.

### RETAIL MART

WE HAVE THE FINEST SHOWROOM in our area with the best selection of audio/video components available. We represent Adcom, Infinity, Thorens, NAD, Polk, Yamaha, Canton, Luxman, Klipsch, SONY ES, and more. CONTINENTAL SOUND, 98-77 Queens Blvd., Forest Hills, NY 11375. (718) 459-7507.

### CAR STEREO

"The Quick Connection"

**B.J. AUDIO**  
3230 Vittmer Ave.  
Cincinnati, OH 45238  
(513)662-3351

**HOME**

- \*NAKAMICHI
- \*NAD
- \*H/K
- \*LUXMAN
- \*CARVER

**CAR**

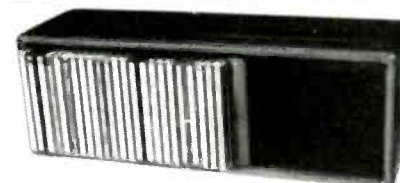
- \*ALPINE
- \*BOSTON ACOUSTICS
- \*ALTEC LANSING
- \*POLK AUDIO
- \*ROCKFORD FOSGATE
- \*KENWOOD
- \*H/K
- \*SOUNDSTREAM
- \*NAKAMICHI
- \*ADS
- \*COUSTIC
- \*BAZOOKA
- \*INFINITY
- \*CONCORD
- \*MB QUART
- \*DENON
- \*SONY
- \*YAMAHA

### WANTED TO BUY

WE NEED QUALITY COLLECTIONS. "TOP DOLLAR PAID" for LP's, Compact Discs, and Cassettes: Classical, Rock, etc. USA'S LARGEST USED AND COLLECTOR SHOP. PRINCETON RECORD EXCHANGE, 20 Tulane Street, Princeton, NJ 08542. (609) 921-0881.

A SCHEMATIC FOR A ROBERTS MODEL 400 TAPE RECORDER SERIAL #22434. JOHN ORTON, BOX 254. SALT POINT, NY 12578 (914) 229-9080.

### AUDIO/VIDEO STORAGE



SLOTLESS, STACKABLE & SOLID WALNUT. Holds 40 discs. Elegant design & exceptional workmanship. SEE DECEMBER NEW PRODUCTS. \$29.95 postpaid & guaranteed. DISCONCEPTS, 7536 Parkdale #6, St. Louis, MO 63105 (314) 721-5793.

### CLASSIFIED ADVERTISERS:

You can reach millions of prime prospects for your mail order products or services through low-cost Marketplace Classified advertising in this or other titles of the

### DCI CLASSIFIED MAGNET

To place an ad, or for further information including rates, ad styles, sizes and multi-title discounts, call **Toll-Free:**

**(800) 445-6066**

## TIPS FOR MAIL ORDER PURCHASERS

It is impossible for us to verify all of the claims of advertisers. Therefore, the following information is provided for your protection:

1. Confirm price and merchandise information with the seller, including brand, model, color or finish, accessories and rebates included in the price.
2. Understand the seller's return and refund policy, including the allowable return period and who pays the postage for returned merchandise.
3. Understand the product's warranty. Is there a manufacturer's warranty, and if so, is it from a U.S. or foreign manufacturer? Does the seller itself offer a warranty? In either case, what is covered by warranty, how long is the warranty period, where will the product be serviced, what do you have to do, and will the product be repaired or replaced? You may want to receive a copy of the written warranty before placing your order.
4. Keep a copy of all transactions, including cancelled checks, receipts and correspondence. For phone orders, make a note of the order including merchandise ordered, price, order date, expected delivery date and salesperson's name.
5. If the merchandise is not shipped within the promised time or if no time was promised, 30 days of receipt of the order, you generally have the right to cancel the order and get a refund.
6. Merchandise substitution without your express prior consent is not allowed.
7. If you have a problem with your order or the merchandise, write a letter to the seller with all the pertinent information and keep a copy.
8. If you are unable to obtain satisfaction from the seller, contact the consumer protection agency in the seller's state or your local U.S. Postal Service.



# NEW YORK WHOLESALE

- Prices subject to change
- Prices exclude shipping charges
- Not responsible for typographical errors

FOR FASTEST SERVICE CALL **(212) 684-6363** OR FAX **(212) 684-8046**

HOURS: MONDAY-FRIDAY, 9AM-7PM EST • SATURDAY 10AM-5PM  
or Write Direct: 2 PARK AVENUE, DEPT. 15, NEW YORK, N.Y. 10016

We sell authorized U.S. branded merchandise and parallel imports. All products covered by manufacturer's warranty or New York Wholesaler's exclusive limited warranty. Manufacturer's rebates may not apply. Ask for full details at the time of purchase.

CD PLAYERS	RECEIVERS	CASSETTE DECKS	CAR STEREO	CAR STEREO
<b>YAMAHA</b>	<b>PIONEER</b>	<b>JVC</b>	<b>NAKAMICHI</b>	<b>SOUNDSTREAM</b>
CDC500 429 CDC610 469 CDX420 239 CDX520 279 CDX720 349 CDX820 469 CDX920 589 CDX1120 989	VXS9500S 689 VXS7500S 569 VSK5500S 459 VSK3300 279 VSK3300S 349 SX2300 199	TDW201 139 TDW301 179 TDW501 229 TDW801 269 TDW901 349 TDX321 169 TDR421 209 TDV621 349 TDV1010 199	PA150 199 SP200 209 SP10 149 SP40 109 SP50 119 SP80 199 SP1010 149ea SP65 199ea EC200/EC200H 259	SF90 269 D601 179 D1001 279 D2001 399 TC301 269 TC303 339 TC306 269 A40 299PR SS10 249 SS510
<b>DENON</b>	<b>NAD</b>	<b>NAD</b>	<b>ALPINE</b>	<b>ADS</b>
DCD520 189 DCD520 249 DCD920 329 DCM555II 389 DCM777 469 DCD1420 489 DCD1520 649 DCD3520 1249	7225 279 7240 429 7100 629 7600 1249 7400 899	6325 189 6340 329 6100 419 6300 759	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	200i 229 PH12 269 320i 399 300i 279 PQ10 389 PQ8 189 PH15 519 P55 219 PQ20 589 SB7 299 SB10 489 300IS 299 320S 419
<b>SONY</b>	<b>ADVENT</b>	<b>AIWA</b>	<b>ALPINE</b>	<b>INFINITY</b>
CDP270 159 CDP470 189 CDP670 229 CDP770 289 CDP970 399 CDP500 269 CDP400 239 CDP900 349	MAESTRO 469 LEGACY 349 PRDDIGY 249 PRDDIGYII 249 BABY 159 MINI/SUB 139 ea Outdoor 149	ADWX909 499 ADWX505 139 ADWX808 299 ADF780 349 ADS27 99 ADWX707 199	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	RS462K 149 CS2K 289 RS452K 109 RS4692K 149 RS4693K 189 CS1K 299
<b>PIONEER</b>	<b>BOSE</b>	<b>AMPS &amp; TUNERS</b>	<b>ALPINE</b>	<b>BOSTON</b>
CLD1070 449 CLD3070 889 PDM710 439 PDM610 329 PDM510 269 PDM410 239 PD7100 399 PD1503 219 PD4100 169	101 159 121 Auto 189 Roomate II 259 901 1149 AMS 629	MX600 429 MX800 679 MX1000 949 MX35 229 MX55 479 AX900 549 AX700 399 AX630 369 CX600 359 CX800 559 CX1000 949 TX530 269 TX1000 449 EO1100 469 EO630 379 EQ330 149 OSR100PRO 479 AVC70 429 AVX100 559 OSP100 519	3501 69 3523 209 3525 249 3268 299 6256 129 5499 179 6394 159 3522 159 7288 399 7909 741 7903 499 781 767 793 159 793 259	703 35 704-705 55 707 39 741 149 751 179 761 169 767 99 C700 159 C793 259
<b>PHILIPS</b>	<b>B&amp;W</b>	<b>SONY</b>	<b>ALPINE</b>	<b>CONCORD CX</b>
CD880X 559 CD50XX 249 CD60XX 349 CDV487 749 CDV488 949	MATRTX 3II 1849 MATRTX 1II 1229 MATRTX 2II 999 DM550 329 DM560 439 DM570 519 DM580 729	CDXA30 449 CDXR77 399 XR6180 199 XR7050 229 XR7400 469 XR6380 249 XR6150 199 CDXR79 449 XE8 149 XE90 329 XR718D 329 XR7280 389 XM601 149	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	CX70X New 359 CX60X New 319 CX50X New 279 CX40X New 239 CX30X New 209 CX20X New 209 CX10X New 159
<b>NAD</b>	<b>GANTON</b>	<b>SONY</b>	<b>ALPINE</b>	<b>KICKER</b>
5325 349 5340 419 5100 589 5170 759 5300	GL260 349 KARAT20 579 KARAT30 699 KARAT40 1029 KARAT60 1289 CT80 1349 CT90 1949 PLUS S 279 PLUS C 479	CDXA30 449 CDXR77 399 XR6180 199 XR7050 229 XR7400 469 XR6380 249 XR6150 199 CDXR79 449 XE8 149 XE90 329 XR718D 329 XR7280 389 XM601 149	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	Kicker2 199 Super2 249
<b>JVC</b>	<b>CELESTION</b>	<b>NAD</b>	<b>ALPINE</b>	<b>SAS-BAZOOKA</b>
XLZ1010 329 XLZ611 229 XLV311 189 XLV211 169 XLM901 249 XLM701 409 XLM301 249 XLM401 279	SL125I New 1179 SL600 1499 SL65 I 749 DL12 New Call 3400 DL8 II 399 DL6 II 329 DL4 II 249 Model 3 219	1700 679 2600A 679 220DPE 529 3225SPE 209 324DPE 329 3400 679	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	T62 159 T82 229 T102 159
<b>MAGNAVOX</b>	<b>DAHLOUIST</b>	<b>DENON</b>	<b>ALPINE</b>	<b>ADCOM</b>
CD8486 269 CD8482 169 CD8480 139 CD8610 199	903 389 905 499 907 749	PMA920 499 PHA720 349 PHAS20 299 PMA1520 749 POA2400 549 POA6600 549 POA800 249 PRA1500 389 TU800 389 TU550 Call 389 AVC2000 749 AVC700 469	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	GTP400 299 GTP500 489 GFP555 449 GFA535 269 GFA545 429 GFA555 629 GCD575 489
<b>RECEIVERS</b>	<b>DESIGN ACOUSTICS</b>	<b>TURNTABLES</b>	<b>ALPINE</b>	<b>PIONEER</b>
<b>YAMAHA</b>	<b>INFINITY</b>	<b>DENON</b>	<b>ALPINE</b>	<b>NEW</b>
RX330 239 RX530 329 RX730 399 RX830 489 RX930 699 RX1130 949	PS3 449 PS5 249 PS20 369 PS6 189 PS8 269 PS55 169	DP59L 479 DP47F 349 DP7F 159	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779
<b>NAKAMICHI</b>	<b>INFINITY</b>	<b>DUAL</b>	<b>ALPINE</b>	<b>PIONEER</b>
TA1A 299 TA2A 469 TA3A 679 TA4A 1049	RS2001 249 RS4001 249 RS5001 249 KAPPA5 169 KAPPA6 169 KAPPA7 169	CS431 139 CS450 199 CS455 229 CS505 249 CS5000 349 CS7000 549	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779
<b>DENON</b>	<b>CASSETTE DECKS</b>	<b>TECHNICS</b>	<b>ALPINE</b>	<b>PIONEER</b>
DRA325 279 DRA425 359 DRA625 439 DRA825 649 DRA1025 749	KX1200 579 KXR700 489 KX800 469 KX630 389 KX500 319 KXR430 279 KX300 249 KX230 219 KXW900 549 KXW602 419 KXW302 349 KXW202 279	SL1200 II 369 THORENS Call For Prices	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779
<b>SONY</b>	<b>RECEIVERS</b>	<b>THORENS</b>	<b>ALPINE</b>	<b>PIONEER</b>
STRAV1010 519 STRAV910 369 STRAV710 319 STRAV310 229 STRAV210 159	DRM400 Call DRM500 209 DRM600 269 DRM700 329 DRM800 399 DRM34HR 439 DRV750 329 DRR680 329	RD260 New 269 RD360 New Call RD460 New 489 CD760 1049 CDC101 769 TD560 769 PA304 389 PA400 389 PA204 249	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779
<b>JVC</b>	<b>RECEIVERS</b>	<b>THORENS</b>	<b>ALPINE</b>	<b>PIONEER</b>
RX301 179 RX401 259 RX501 299 RX701 349 RX801 429 RX901 649 RX1010 949	DRM400 Call DRM500 209 DRM600 269 DRM700 329 DRM800 399 DRM34HR 439 DRV750 329 DRR680 329	RD260 New 269 RD360 New Call RD460 New 489 CD760 1049 CDC101 769 TD560 769 PA304 389 PA400 389 PA204 249	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779
<b>PHILIPS</b>	<b>RECEIVERS</b>	<b>THORENS</b>	<b>ALPINE</b>	<b>PIONEER</b>
FR780X 429 FR880X 499 FR980X 799	DRM400 Call DRM500 209 DRM600 269 DRM700 329 DRM800 399 DRM34HR 439 DRV750 329 DRR680 329	RD260 New 269 RD360 New Call RD460 New 489 CD760 1049 CDC101 769 TD560 769 PA304 389 PA400 389 PA204 249	5903 459 7235 429 6205 99 6368 200i 6392 300i 6266 300i 3312 229 3213 159 3501 69 7289 469 7390 359 7280 289 7380 259 7269 199 7179 299 5952 499 3321 219	6070TOR 329 KEH9696TR 289 KEH050 339 KEH60400R 299 KEH7676TR 169 K3434 Call CDX3 369 DEXM2000 249 DEXM3000/CDXM70 779

## INDEX TO ADVERTISERS

READER SERVICE NO.	ADVERTISER	PAGE NUMBER
60	Adcom	35-38
30	Advent	93
9	Alpine	99
80	Atec Lansing	68-69
45	API-Mirage	101
164	Azden	60
62	BBE Sound Inc.	123
67	Blaupunkt	108-109
—	BOSE	58-59, 117
157	Cambridge SoundWorks	54-55, 97
—	Carver	20-21
56	Component Guard	Cover 4
188	Cooustic	47
113	Cooustic	49
98	Cooustic	51
—	Crutchfield	24
—	Delco	120
27	Denon	60
32	Design Acoustics	17
71	Discount Music Club	118
1	Electronic Wholesalers	133
—	Ford Audio	94
40	Harman Kardon	12
73	HiFonics	15
—	Illinois Audio	128
—	Infinity	28
115	Jamo	2
39	J&R Music World	125-127
69	KEF	15
2	Klipsch	23
52	Luxman	57
20	Magnepan	8
25	Maxell	61
29	McIntosh	107
48	Miller & Kreisel	18
45	Mirage	101
20	Mitsubishi	30-31
79	Ohm	114-115
—	Onkyo	44-45
97	Paradigm	41
—	Perfectbound Press	118
—	Philips	Cover 2, 1
—	Philip Morris-Marlboro	26-27
—	Philip Morris-Merit	53
31	Pioneer-Car	102
31	Pioneer-Home	62-62, 71, 73
173	Pioneer-LaserDisc Club	22
90	Polk Audio	10-11
93	Proton	119
—	Radio Shack	Cover 3
103	Sherwood	4
105	Signet	17
184	6th Avenue Electronics	131
59	Sonance	110
77	Sony-CD Player	7
106	Sony-Receiver	42
119	TDK	40
176	Technics-CD Player	65
177	Technics-Speaker	66, 67
—	Wisconsin Discount Stereo	135
—	Yamaha	105

# JANUARY

**CALL FOR  
LOWEST PRICES**

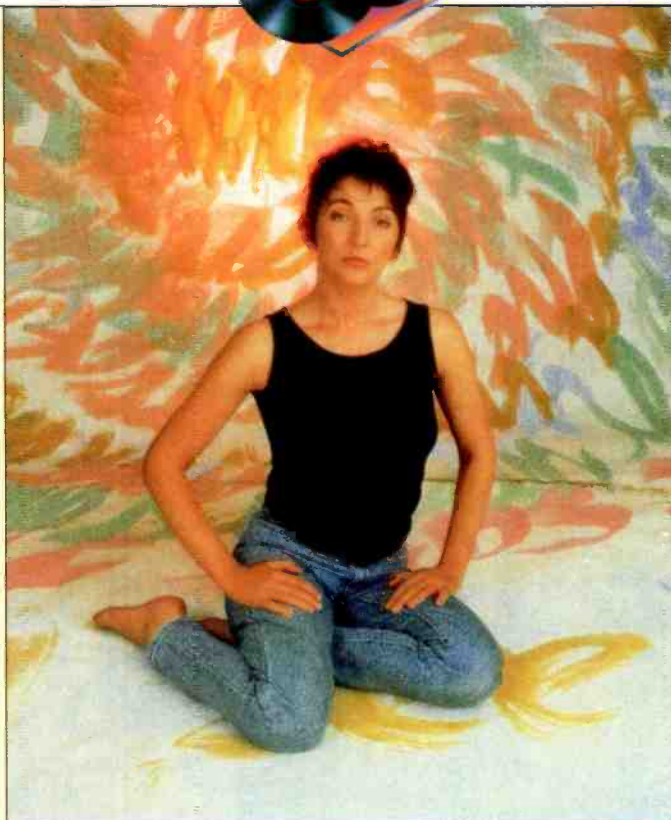


by Christie Barter  
& Ron Givens

**A**s Kate Bush has proceeded through her recording career, each of her six albums has taken longer to make than its predecessor. Her latest, "The Sensual World," took four years. "I know it's a long time," she admits, "but each record gets harder to make. This is my most personal and female album so far."

As before, Bush has written lush, sophisticated music with distinct literary overtones. The title track, for example, was inspired by James Joyce's *Ulysses*. Bush also produced the album, and she used musicians who would give some of her sensuous arrangements an international-folk flavor. Bulgaria's Trio Bulgarka, a women's singing group, performs haunting harmonies on three tracks, and the piercing, ancient sounds of Irish uilleann pipes are heard on a few others. □

**T**erence Trent D'Arby's second Columbia album, "Neither Fish nor Flesh: A Soundtrack of Love, Faith, Hope & Destruction," opens



Bush: a sensual world

other directions, from gospel-rich soul to swirling pop surrealism. Of the song *To Know Somebody Deeply Is to Know Somebody Deeply*, D'Arby said to *The New Musical Express*, "I dreamt that Marvin Gaye sang [it] to me, and that's how I got it."

D'Arby produced the new album himself, wrote all the arrangements, and plays nearly all the instruments. He'll go out on tour early this year. □

**T**HE Tokyo String Quartet has established itself as one of the world's leading chamber-music ensembles, and it is celebrating its twentieth anniversary in 1989-1990. During this milestone season the New York-based quartet has scheduled over a hundred concert appearances, ranging from Pasadena and Phoenix in the West to the Kennedy Center in Washington and New York's Alice Tully Hall in the East, and including the Netherlands, West Germany, and Switzerland in March.

The Tokyo Quartet is also vigorously pursuing its contractual commitment to BMG Classics to record all the quartets of Beethoven and Schubert. It began the Beethoven cycle in December with two of the middle quartets, Op. 59, Nos. 1 and 2, and at the same time put finishing touches on its recording of Schubert's *Death and the Maiden*, which is scheduled to be released in April or May. The Tokyo's recording of Schubert's last quartet, No. 15 in G Major, was released by BMG Classics just before Christmas. □

The Tokyo at twenty



**B**o Diddley's back. He has recorded "Breakin' Through the B.S." for Triple X Records. The album, his first in ten years, has a pop side and a straight r-&-b side. He also showed up recently in a commercial for Nike shoes that featured baseball-football star Bo Jackson. And, in a Diddley-related development, a group called the Snakes has released a single on Curb called *Pay Bo Diddley*, which argues that Diddley has never gotten all the royalties owed him. □

**T**HE Chicago Symphony is currently offering the fourth record in its archival series, a tribute to **Georg Solti** on the occasion of his twentieth anniversary as music director. Along with works by Richard Strauss, Liszt, Ravel, and Nielsen, the double album includes a live 1965 recording of Bartók's *Dance Suite* from the conductor's first Chicago Symphony concert. Price of the set, including a tax-deductible contribution, is \$35 on LP and \$50 on CD, plus \$5 postage and handling, from the CSO Women's Association, 224 S. Michigan Ave., Chicago, IL 60604.

The benefit album produced by the New York Philharmonic last year was "Soloists from the Orchestra, Volume II," featuring its first-desk men in works by Haydn, Mozart, Schumann, Hindemith, and the American composer Gordon Jacob, who died in 1984. To order, send \$25 for the double-LP album, or \$45 for the two-CD set, plus \$1 postage and handling, to Radiothon Office, Avery Fisher Hall, Broadway at 65th St., New York, NY 10023. □

**T**HE Grateful Dead has just released a new album on Arista called "Built to Last," and, as always, the band is supporting it by taking to the road. After playing their annual New Year's Eve show on home turf in the Bay Area, the Dead will prepare to tour Europe this spring. Following last fall's disaster, the band recorded a Rodney Crowell tune, "California

COLUMBIA RECORDS

JOHN CARDER BUSH/CBS

CHRISTIAN STEINER/JOHN DUDICH



D'Arby: hardline

with this declaration: "I will not be defined. I'm neither fish nor flesh." Fair warning to fans of his debut album, "Introducing the Hardline According to Terence Trent D'Arby," that he's taken his basic funk sound in many





Earthquake," that went out only to radio stations. It was the group's way of wishing its neighbors well. □

**P**hil Collins has returned to the vinyl wars. Although he's written some songs in the last few years, notably for *Buster*, the movie he starred in last year, his new Atlantic album, "... But Ser-

BERKARD/RETNA

VICES of such big-name musicians as guitarist Eric Clapton, keyboardist Steve Winwood, and David Crosby and Stephen Bishop, who contribute background vocals. Early reports that the album would *not* be released on vinyl were denied by Atlantic. The first single from the album is *Another Day in Paradise*, which at press time was climbing into *Billboard's* Top 20. □

**O**NE thing will lead to another. Saxophonist Grover Washington, Jr., serving as a spokesperson for Gore-Tex Outerwear, was particularly impressed with that company's \$2 billion commitment to the 1990 International Trans-Antarctica Expedition, a 4,000-mile crossing of the polar continent by six men and forty-two sled dogs—all of them protected from frostbite by Gore-Tex clothing. Accordingly, Washington composed *Protect the Dream* as a bonus track, on cassette and CD only, for his new Columbia album, "Time out of Mind." He also named his current swing through the U.S. the *Protect the Dream Tour*.

"This international team of explorers and scientists," Washington explained, "will be... gathering information that will inform us of what we have to do to make this a safe planet for our children and our children's children. I admire these people and their sense of purpose." □

The title song in Washington's new album was the last hit single (in 1981) by one of his favorite musical teams, Donald Fagen and Walter Becker, collectively known as Steely Dan. □

**W**INNER of the Silver Medal in the Van Cliburn International Competition in 1981, the Cuban-born pianist Santiago Rodriguez has devoted a good deal of his studio time to recording music of established contemporaries, with an emphasis on composers of Latin or Spanish origins. His latest, released by Elan in December, features the premiere recordings of the *Concertino for Piano and Strings* (1956) by Carlos Surinach and the *First Piano Concerto* (1937) by the Italian-American composer Mario Castelnuovo-Tedesco as well as a performance of Alberto Ginastera's *Variaciones concertantes* (1953). In the concerted works, Rodriguez is accompanied by the Richmond (Virginia) Sinfonia under George Manahan.

Rodriguez's discography also includes music from the standard repertoire, including Brahms's *Paganini Variations* and Debussy's second book of preludes. Upcoming are the third piano concertos of Rachmaninoff and Prokofiev and solo albums devoted, respectively, to works by Bach and Rachmaninoff. □

**G**RACENOTES. GRP has released an album called "Happy Anniversary, Charlie Brown!" in honor of the fortieth anniversary of the Peanuts comic strip. Musicians include Patti Austin, David Benoit, Dave Brubeck, Chick Corea, Kenny G., B.B. King, Gerry Mulligan, Lee Ritenour, Joe Williams, and Dave Grusin. . . . David Bromberg has issued his first album of



Washington: polar dream

the Eighties, "Sideman Serenade," on Rounder. . . . Violinist Nadja Salerno-Sonnenberg's new book about her career so far is titled *Nadja: On My Way* (Crown). . . . A new Pro Arte/Fanfare release, "Over the Rainbow," features rediscovered piano works by songwriter Harold

SCOTT WEINER/CBS



Rodriguez: roots

Arlen in performances by John Arpin. . . . Sony Classical (the new name of CBS Masterworks) and the estate of Glenn Gould have announced that a number of the late pianist's previously unreleased recordings will be issued worldwide over the next several years. □

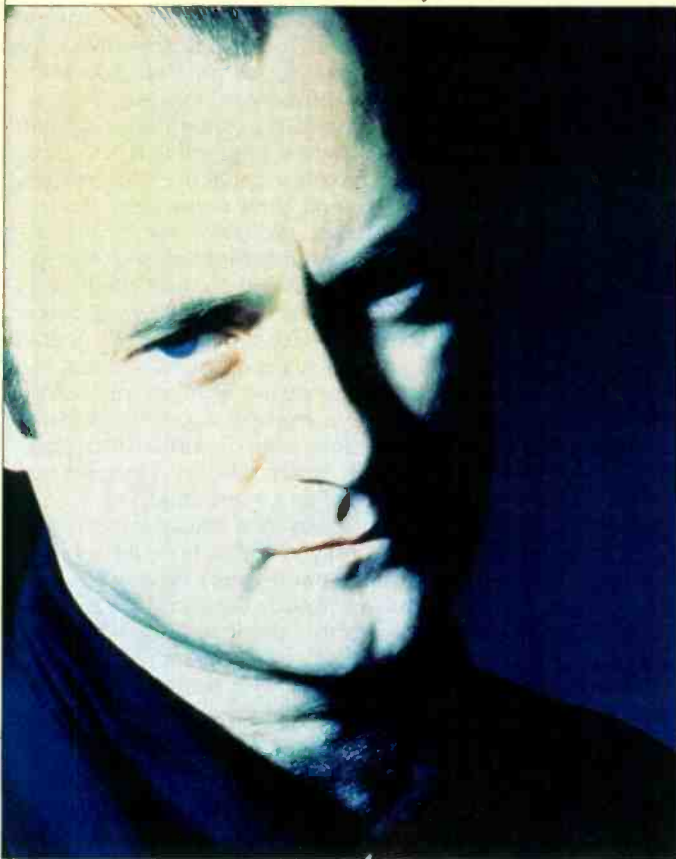
CHRISTIAN STEINER/JOEL MORGAN

The Dead: quake relief

ously," is his first solo long-player since 1985's "No Jacket Required." There are ten cuts on the LP and twelve on the cassette and CD, most of which he wrote on his own.

Co-produced by Collins and Hugh Padgham, "... But Seriously" calls on the ser-

Collins: back to the vinyl wars



ATLANTIC RECORDS

by *Ralph Hodges*



## OLD NEWS

**B**URROWING through dusty files of aging research material the other day, hoping to find something that wasn't totally digital or so computer-intensive it was nothing but lists of numbers, I unearthed a brief but worthwhile little report based on work done at Nippon Columbia some two years ago. I don't know why it had gone unnoticed heretofore, but when I turned it up this time my attention was drawn to the bottom of the list of credits, to the name of Almon Clegg, a member of Denon America's engineering team and a man of high intelligence and good science. It was that, I suppose, that made me turn the page.

The kernel of the paper is the audible effects of "comb filtering," and particularly what happens in multimiking situations when two or more microphones, at different distances from an instrument, all pick it up and then have their outputs mixed into a common channel. Depending on the wavelength the instrument is playing, the electrical outputs of the mikes will interfere simply or complexly. In the worst cases, the response curve that results can be plotted as a comb

shape, teeth pointed toward the bottom of the graph, and it actually represents a form of (usually) short-duration ringing. The paper describes what is heard as "muddy," "dirty," or "raspy," when it is heard at all.

A fair amount of literature precedes this work, but Nippon Columbia has come up with some numbers for the threshold of audibility of the phenomenon that are considerably lower than I have seen before—that is, much smaller amounts of the effect can be detected than was suspected. Worst cases of audibility seem to correspond to a delay of about 1 millisecond, which puts the distant microphone about a foot farther away from the instrument than the close one—a not-atypical situation in a multimike session. Under those conditions, experienced listeners were able to hear combing by the distant mike's output when it was 20 dB and more down from the near mike's contribution. Note, however, that a microphone only 1 foot farther away is likely to contribute much more than a -20-dB level to the mix, no matter how directional it is. (It should also be mentioned that actual microphones were not used in these tests, but rather high-quality digital delay lines set to simulate various mike spacings. The results are still valid in my opinion.)

All this put me in mind of those raspy CD's from the early days of the format, and somewhat reluctantly I went back to listen to my collection of those bummers to learn what I could hear in this context. I heard all the old horrors, and I think everything you've read about them is true: "presence boosts" in studio microphones, primitive analog-to-digital converters (they still are, in the view of many professionals), ignorance of dither techniques, gross misunderstandings between the engineers for the recording/mixing and mastering operations, etc. (It's also true that many CD mastering people were and remain physics technicians rather than sound engineers.) Any combination of these factors can transform a basically good recording into something you'd rather not listen to. But I also

believe I heard, with certain recordings and certain types of material, artifacts that could be attributed to combing. Great. Another alligator to worry about.

Today, however, we are told that there is a mass migration of producers and engineers away from multimiking and toward far less complex schemes, even to the point of simple microphone pairs. This is good news in many audiophiles' opinion, but it has been pointed out regularly that even a mere two microphones, when spaced apart to left and right, can give rise to combing. Simply put, the mechanism is this: An instrument playing on the left will be picked up by both microphones, unless they are spaced improbably far apart. But the acoustic path to the right microphone will be longer, hence there will be a phase difference between the two channels for that instrument. This shouldn't matter, because the two channels will never meet electrically, but they will meet *acoustically*, at the listener's ears—and there at the ears, says the theory, is where combing caused by phase interference may take place.

The above is the view of the coincident-microphone advocates, a not-too-numerous but vociferous group that generally favors putting two directional microphones as close together as possible (no path length differences for any instrument), with one aimed left and the other right. The coincident crew finds much other fault with spaced mikes, and their arguments are cogent, but probably many audiophiles would rather listen to microphones than argue about them.

Why have these matters become so urgent with the advent of the CD? I suspect it's because anomalies intrinsic in earlier formats may simply have masked typically fleeting distortions such as comb distortion. Indeed, when shown comparison graphs of an LP test record and a CD test disc, even a hard-core phonophile may wonder how he put up with the phonograph system's phase and amplitude instabilities and its waveform deformations for so long.

But peace. We don't look at music, we listen to it. □



EXCELLENCE DEFINED



**OPTIMUS<sup>®</sup>**

## The New, Quality Name in High-Tech Cassette Stereo

New Optimus brand audio equipment offers you the very best combination of high technology, innovative features and superb styling—backed by in-depth lab testing and quality control that's second to none.

The new SCT-88 stereo cassette deck is a brilliant example. Its Dolby HX Pro\* system delivers superior sound because it actually

records more signal. And with HX Pro you'll hear the benefits even when you play back your tapes on car and portable equipment.

SCT-88 has ultrafast 0.3-second auto-reverse, foolproof full-logic controls, automatic and manual fine-bias for magnificent results with any blank cassette. \$199.95

\*TM Dolby Laboratories Licensing Corp. Price applies at participating Radio Shack stores and dealers

**OPTIMUS** Exclusively at

**Radio Shack<sup>®</sup>**  
**The Technology Store<sup>™</sup>**

A DIVISION OF TANDY CORPORATION

# THIS MAN SUFFERS FROM UNEXPECTED BILLS.



## YOU DON'T HAVE TO.

The worst bills are always the ones you don't expect.

Like when you suddenly have to pay to repair products you depend on.

But with a ComponentGuard Extended Warranty, you'll never have to worry if your VCR starts turning your tapes into confetti. Or your hifi becomes nofi.

ComponentGuard offers complete parts and labor protection for up



to 5 years on over 120 different kinds of audio & video products, appliances, tools, computers, cameras, and more. Highly affordable protection today against the high cost of repairs tomorrow.

So, don't end up like this poor soul.

Get a ComponentGuard Extended Warranty with your next purchase—and get a peace of mind guarantee at the same time.

## DON'T FORGET YOUR WARRANTY! **COMPONENTGUARD™**

100 Summit Lake, Valhalla, N.Y. 10595 1-800-421-9820

CIRCLE NO. 56 ON READER SERVICE CARD