

# Stereo Review

DECEMBER 1988 ● \$2.25

LISTENING TESTS:  
SIX TOP CD PLAYERS

HOLIDAY GIFT GUIDE

LAB TESTS:  
SONY CD CHANGER,  
HARMAN KARDON  
RECEIVER,  
SYNTHESIS SPEAKERS,  
AND MORE...



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#259B\*\*\*\*\*5-DIGIT 40222  
#BCH8900Y091\*  
430492 BCH 8900Y091 741J JAN90  
MR DAVID S BUCHANAN  
12#KV  
8900 YELLOW WOOD PL  
LOUISVILLE KY 40222



Motorized main analog volume control. Digitally synthesized AM/FM stereo tuner with 19 presets. 7-band graphic equalizer with Acoustic Memory feature. Record out selector allows separate recording and listening. Video and audio dubbing capability. Cable FM/TV ready. Pre-out and main-in connections.

\* Dolby is a registered trademark of Dolby Laboratories, Inc.

\* 125 watts RMS per channel, at 8 Ohms, 20-20,000 Hz, 01% THD.





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**PHILIPS**





## The Affordable Hi End Alternative

Born out of a tradition of fine craftsmanship in Scotland, Ariston Acoustics is proudly introducing the Ariston System, a sophisticated yet elegantly simple expression of technology at the service of music. The Ariston System was designed to produce superb sound quality and offer maximum convenience by means of a full function remote control that comes standard with our amplifier.

Founded in 1969, Ariston Acoustics has enjoyed a steadily increasing reputation over the years for their innovative, quality products. Ariston components have been critically acclaimed for their sheer musicality by reviewers on both sides of the Atlantic. Ariston's commitment for the future is to develop new components which both complement and expand upon the existing system while maintaining the concept of true music reproduction at eminently affordable prices.

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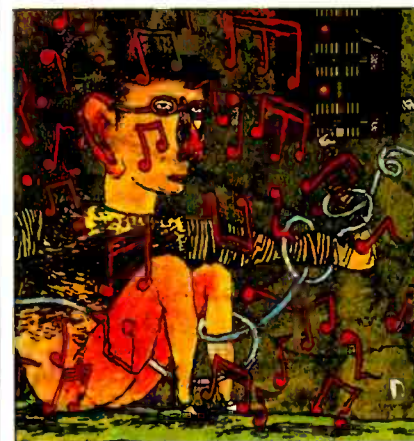
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Design by Sue Llewellyn, photo by Roberto Brosan.

STEREO BUYER POLL, SEE PAGE 165  
Please fill in if you bought equipment in the past thirty days.  
READER SERVICE INFORMATION CARD, FACING PAGE 165  
Circle the items you want to know about.



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DENON PRECISION AUDIO COMPONENT/INTEGRATED STEREO AMPLIFIER PMA-1520



## WHAT MAKES ONE AUDIO BRAND SOUND BETTER.

**RECEIVERS** actually combine a separate amplifier and tuner onto a single chassis. So one clue to a receiver's sound quality is the quality of the separates technology it incorporates.

At Denon, the new DRA-1025 and DRA-825 Receivers have the same Optical Class A circuitry that graces Denon separate amplifiers. Developed through statistical research into the playback requirements of CDs, this circuit makes the legendary sound of true Class A mode a practical reality. These receivers also benefit from the same Pure Current power supply that gives our separates superb transient response.

Every Denon receiver features thick, anodized aluminum front panels and discrete output transistors. Selected models offer Denon's Integral System (IS) remote control.

DRA-1025



This unwavering consistency is a prime example of Design Integrity, the Denon philosophy that encompasses our eight decades of mastery in every link of the music reproduction chain.

It's simply easier to make audio components sound more like music when you know what music sounds like.

# DENON

DESIGN INTEGRITY





by *Christie Barter*  
and *Rebecca Day*

## BOSE FOR THE CAR

Bose has developed customized stereo systems for 1989 Audi and Nissan cars. The Audi system includes a Blaupunkt cassette receiver modified with three Bose circuits, two ported front-door enclosures each containing a 4½-inch full-range speaker and a separate amplifier/equalizer module, and two 6 x 9-inch speakers in the rear, also with separate amp/equalizer modules. The Nissan system is similarly configured but uses a Clarion cassette receiver.

## TECH NOTES

Eveready Battery Co. is expected to begin selling lithium AA 1.5-volt batteries in January. The high-density lithium batteries are said to last up to twice as long as alkaline cells. The suggested retail price of a two-pack of Lithium + batteries is expected to be between \$5 and \$6. . . . Proton has chosen the Apex surround-sound system for its SD-1000 decoder. The system is claimed to achieve instantaneous channel-separation values of up to 50 db, compared with the separations of 3 db available with conventional decoders and 26 db with Dolby Pro Logic decoders. . . . Magnat America has announced a 10-percent price cut on its MSP and Magnasphere speakers because of favorable currency-exchange rates. . . . All Luxman home audio components purchased from authorized dealers as of October 1 are now covered by a five-year warranty for parts and labor. Consumers who purchase Luxman components from unauthorized dealers will not receive warranty coverage from the factory. . . . Denon America has brought the first 20-bit, eight-times oversampling linear digital-to-analog (D/A) converter system to the U.S. in its DCD-1520 (\$750) and DCD-3520 (\$1,500) cd players. Quick to note that the new players are not just token efforts in the bit race, Denon says

its 20-bit conversion is a full linear process designed to provide "true" 16-bit performance.

## FOR TAPERS

Taking the lead in the metal-tape length war, TDK has introduced a 110-minute audio cassette (\$5.25) in its MA line. The company has also added 76-minute (\$2.75) and 100-minute (\$4) tapes to its Type II SA line. TDK says the new tapes have coating thicknesses identical to those in its C-90 tapes, but the base film is 1 micrometer thinner. . . . Through December, Maxell is offering a free holiday music tape with each four-pack of XLII-90 and UDSII-90 cassettes.

## RECORDS FOR GOOD CAUSES

A recording of "Music for Life," the concert given at Carnegie Hall in November 1987 to benefit the Gay Men's Health Crisis, which cares for people with AIDS, has just been released by Deutsche Grammophon. Artists performing include Leontyne Price, Marilyn Horne, Leonard Bernstein, Murray Perahia, and Yo-Yo Ma. All proceeds from sales of the record go to GMHC as well. . . . "Greenpeace—Breakthrough," a compilation of environmentally concerned songs by such international rockers as U2, Dire Straits, Sting, and Talking Heads, is due for January release in both the West and Eastern Bloc countries. The album will benefit the environmental group Greenpeace. . . . Proceeds from a new recording of Beethoven's *Missa Solemnis*, conducted by Antal Dorati on the Bis label, have been earmarked for the group International Physicians for the Prevention of Nuclear War.

## FOR TEKKIES

The proceedings of an audio symposium held in Denmark last year have been published under the title *Perception of Reproduced Sound*, edited by Søren Bech and O. Juhl Pedersen, for the edification of technically advanced enthusiasts interested in psychoacoustics and methods of speaker testing and reviewing.

The book includes papers presented by engineers from universities, various manufacturing companies (such as KEF and Bang & Olufsen), and government institutions in Canada and several European countries. Its price of 250 Danish kroner (U.S. \$37.75) includes the cost of surface mail worldwide. For air-mail postage to the United States add \$7.25. Order from Secretariat, Engineering College, Aarhus Teknikum, Dalgas Avenue 2, DK-8000 Århus C, Denmark. Make check or money order payable to Engineering College, Aarhus Teknikum.

## PETITIONING UNCLE SAM

In an effort to put the U.S. in the running in the development of HDTV (high-definition television), lone U.S. tv maker Zenith has petitioned Congress to fund development of the nascent technology. "Despite the progress made by Zenith and some others, HDTV is still in its infancy," said Jerry Pearlman, chairman and president of Zenith. "There is still a lot of research and engineering work to be done to get to true broadcast HDTV. And this will take significant investments. We strongly urge the government to fund such an effort—in domestic engineering labs for implementation in domestic factories because, sadly, the domestic industry can no longer afford the investment."



ROBERT PIZZO



prile audio

**SDA SRS 2.3**  
**\$1099.95 ea.**



# The Polk Revolution Continues!

*"Polk reinvents the loudspeaker"*

*High Fidelity Magazine*

**N**early six years ago the audio world was stunned by Matthew Polk's introduction of revolutionary SDA technology. While other designers had been concentrating on small refinements to existing loudspeaker technology, Matthew Polk opened the door to new frontiers of exciting realism in sound.

True Stereo SDA technology maintains stereo separation all the way to your ears, something which no conventional speaker can achieve. Conventional speakers make it sound like the musicians are trapped in the speaker boxes or in the small space between them. Polk's patented SDA speakers fill the entire width of your listening room with sonic images so breathtakingly real that it's just like having the musicians in the room with you. They must be experienced to be believed!

## **Introducing the SDA SRS 2.3**

Introduced two years ago, the flagship SDA Signature Reference System (SDA SRS) is the ultimate expression of loudspeaker technology. A two-time winner of the prestigious Audio Video Grand Prix Award, the SDA SRS was recently chosen by the editors of *Stereophile* magazine for their ultimate dream system.

Now being introduced, the SDA SRS 2.3 offers all of the benefits of third generation SDA technology in a slightly more modest package. It is the perfect speaker for those listeners who demand the best and most exciting listening experience but who cannot accommodate the larger SDA SRS.

Words can never fully express the thrilling experience of listening to the new SDA SRS 2.3. Effortless reproduction at live concert levels, distortion free, body-tingling bass and room-filling stereo imaging are executed so flawlessly that when you close your eyes you'll forget that you are listening to speakers at all. Visit your local Polk dealer and experience them for yourself.



Matthew Polk's award winning SDA SRS 1.2 and the SDA SRS 2.3.

**polkaudio**

The Speaker Specialists®

5601 Metro Drive, Baltimore, Md. 21215

CIRCLE NO. 90 ON READER SERVICE CARD

Where to buy Polk Speakers? For your nearest dealer, see page 169.

## Stereo Review

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

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## LETTERS

### CD Destructibility

Dark rumors abound here in the frozen hinterlands and backwaters of Alaska regarding the life span of the compact disc, heretofore considered nigh-on indestructible. Some say that the aluminum matrix may corrode and decompose over the eons (or even a few years), leaving the owner to rend garments, gnash teeth, and wail at the gross injustice of it all. Not to mention being out the more than two thousand bucks some have spent collecting their favorite aural delights.

But others say, "Nay! 'Tis but a cruel jest played upon the fears of the gullible." Prithee, can't thee set mine soul to rest one way or the other? For I am but one of those so smitten by the delights and apparent attributes of the aforementioned medium that I have sacrificed the greater part of my present fortune, as well as my daughter's college education, in pursuit of a *large* collection of my favorites. Please, answer instanter before the melancholy should drive me to travel to Japan and leap from the parapets of the Sony corporate headquarters building!

GEORGE COMEAUX  
Anchorage, AK

I embraced the CD format because of the promise of extremely high fidelity and a life expectancy of virtually "forever." Recently a DJ friend told me that his station's CD's were not holding up under daily use. The very next day I read a newspaper article stating that the ink used to imprint the labels was eroding some discs. What's the story here?

KEITH K. LEVEILLE  
Novi, MI

*We are investigating the various claims about CD deterioration and will report on the situation in a future issue. Meanwhile, take heart: We have been assured by several experts that CD's produced in accordance with established standards and reasonably maintained should not suffer from "decomposition." The collections of some radio stations and libraries may have been damaged by corrosive inks from marking pens used to identify and catalog their CD's, however.*

### CD Changers

The material on CD changers in Ken C. Pohlmann's "How to Buy a CD Player" in October was quite good. Mr. Pohlmann's admonition to "... make sure a random-selection feature will choose from all of the loaded discs, not just one at a time" is excellent advice. I would strongly advise further that the random-selection process be *nonrepeating*. I own both a Sony CDP-C70

carousel changer and a Denon DCM-555, a magazine-loading type. The Denon (like some other CD changers) removes each selection from the list of choices after it is played and therefore plays each track only once. The Sony makes selections on a truly random basis from all the tracks on all the discs each time, and it can repeat some as many as five times without playing others even once.

Mr. Pohlmann's statement that a carousel changer is as easy to load as a single-play machine is certainly true. I would add, however, that if your CD player is not in the most convenient of locations, the magazine-type changer has the advantage in that the magazine can be taken elsewhere for loading.

R. B. ORMSBY  
Newhall, CA

### CD Timings

In October "Letters," Andy McKaie of MCA Records says that the Who's *Tommy* was released on two CD's instead of one because its total time of seventy-four minutes and thirteen seconds "exceeded [what were then] the physical limitations of a single disc by four minutes" and not because of a "greedy individual" at MCA. Perhaps Mr. McKaie needs to be made aware of the following releases: Beethoven, Symphony No. 9 (CSO/Solti), on London, 74:45; Capriccio CD sampler, 74:11; Bernstein, *A Quiet Place*, Deutsche Grammophon, 74:57 and 74:09.

I could go on with other examples. The point is that the Who's *Tommy* can now be released on one compact disc. Mr. McKaie, why don't you remaster the recording on one disc or sell the two-disc set for the price of one?

TODD J. JANUS  
Houston, TX

### More on Movie Sound

We, the Motion Picture Sound Editors, always appreciate a thoughtful notice about good film audio. But we disagree with the tone of Ralph Hodges's "More on Movie Sound" in September. Our association comprises people working in the several sound-editorial specialties that provide, organize, alter, and integrate the hundreds of bits of sound needed to make movies and filmed TV shows. Everything we put together is finessed by the rerecording mixers to create the audio illusion of a stereo "stage," a sonic world in three dimensions that supports and surrounds the flat screen.

Even mono movies and TV shows need sound work. Most of what's recorded with the camera rolling needs to be enhanced, or fiction films will sound



Announcing a  
new movement  
to put more  
power into the  
hands of  
more  
people.



# The A GTP-400 Tu The sound o



**A**dcom brings the superior performance of its separates (tuners, preamplifiers and amplifiers) into a price previously associated with ordinary receivers with the introduction of the new GTP-400 Tuner/Preamplifier. By combining the GTP-400 with any of Adcom's power amplifiers, you can now afford the clear sound, powerful dynamics and exceptional performance for which Adcom is "legendary." The GTP-400 will put more power into your hands than you ever thought possible. And its sound is truly revolutionary.

### Why Separates Instead of a Receiver

Because receivers have limited space, they are unable to be equipped with the heavy-duty, high-current, high-voltage power supplies available in the best separate components. And if a receiver

was equipped with such supplies, it would generate unacceptable levels of heat and hum, degrading the tuner and preamplifier performance.

Consequently, the overall performance of receivers is seriously compromised for the seeming advantage of all-in-one convenience and affordability.

### The Tuner/Preamp Advantage

The GTP-400 Tuner/Preamplifier eliminates all such compromises. By dividing the tuner/preamplifier from the power amplifier, low-current, low-voltage elements are totally isolated from high-current, high-voltage elements ensuring sonic quality and superior performance.

And because the GTP-400 is designed to be used with any of Adcom's power amplifiers, you have the advantage of choosing the right amount



# adcom ner/Preamp: f a revolution.



of power for your needs. If 60 watts per channel will drive your speakers to the level you want, consider our least expensive amplifier, the GFA-535. If you need more power, consider the 100 watt GFA-545 or Adcom's legendary 200 watt GFA-555. For the truly power hungry, the GTP-400 will drive two GFA-555's each bridged in mono, for an awesome 600 watts per channel.

### Affordable High-Performance

Designers and engineers usually use Class "A" audio circuits in components where price is no object. Demanded by those who can distinguish outstanding sonic performance from merely average, Class "A" circuits are employed in the GTP-400's phono and high-level preamp stages. These circuits provide superior resolution and dramatic musicality. It took Adcom's approach

to high performance/high value to make Class "A" affordable.

### More Sound for Less Money

Several of Adcom's components have been favorably compared to other components costing two and three times more. The GTP-400 promises to keep faith with this tradition of exceptional value by delivering superb performance at a reasonable price. *(over please)*

**ADCOM**<sup>®</sup>  
fine stereo components

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

# How the Adcom GTP-400 stacks up.



GTP-400/GFA-535 (60 watts/ch)\*



GTP-400/GFA-545 (100 watts/ch)\*



GTP-400/GFA-555 (200 watts/ch)\*

## The Preamplifier Section

Optimum signal-to-noise ratios at both the phono and high level inputs ensure superior performance from your treasured LP's as well as your new compact discs and a wide range of HiFi video sources.

Custom-designed linear gain stages in the phono and high level amplifiers provide low distortion, low noise and high speed. And, high accuracy in the RIAA equalization circuit provides the best possible sound from high output moving coil or moving magnet cartridges.

A separate recording selector allows listening to one source while recording another. Tone controls and contouring circuits can be utilized when fine tuning your system to room acoustics or individual listening tastes.

## The Tuner Section

Quartz-referenced and digitally synthesized, the tuner has an accuracy of 0.00025% providing a significant reduction in audible distortion.

Eight FM stations and eight AM stations can be programmed

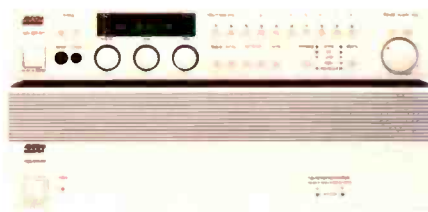
## Specifications

### Preamplifier

Total harmonic distortion: <0.012%  
 IM distortion: 0.005%  
 Frequency response: 20 Hz - 20 kHz  $\pm$  0.1 dB  
 Maximum output level: > 8 volts  
 Input sensitivity for .5V output:  
     Phono: 0.8 mV  
     High level: 78 mV  
 Signal-to-noise ratio:  
     For .5V output: Phono: 80 dB  
     For 2V output: High level: >95 dB  
 Tone controls:  
     Bass (40 Hz)  $\pm$  9.0 dB  
     Treble (15 kHz)  $\pm$  7.5 dB  
 Output impedance: 100 ohms  
 Voltage: 117V/60Hz (Available in 220V/50Hz on special order)  
 Dimensions: 17  $\times$  3  $\frac{1}{4}$   $\times$  12  $\frac{1}{4}$ "  
 (432  $\times$  80  $\times$  325 mm)  
 Weight: 13 lbs.

### FM Tuner

IHF sensitivity, mono: 10.5 dBf  
 Signal strength for -50 dB quieting,  
     mono/stereo: 15/37 dBf  
 Capture ratio: 1.7 dB  
 Alternate channel selectivity: 70 dB  
 Separation at 1 kHz: 50 dB  
 THD/stereo at 1 kHz: 0.1%  
 Maximum signal-to-noise ratio,  
     mono/stereo: 85/75 dB  
 Frequency response: 30 Hz - 15 kHz  $\pm$  0.5 dB  
 Antenna impedance: 75 or 300 ohms



All Adcom components also available in white.

for instant retrieval at the touch of a button. Once a station is tuned in, it's locked in without drift. A touch of another button activates the scan mode, up or down.

When reception conditions are marginal, a switchable high-blend circuit reduces background noise and fading of FM stereo signals.

## The Sound of a Revolution

The price of the GTP-400 with a GFA-535 power amplifier is close to that of a high quality receiver. But that's as close as they get. Because nothing sounds as good as an Adcom music system.

So if you would like to be part of the new movement towards bringing more power into your home, ask your Adcom dealer to demonstrate the GTP-400 with any Adcom power amplifier. You'll hear what a revolution sounds like.

# ADCOM®

fine stereo components

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\*Power output, watts/channel, continuous both channels driven into 8 ohms, 20 Hz - 20 kHz <0.09% THD. © 1988 ADCOM



like documentaries. We are proud when listeners are aware of rich sonic detail, but essentially our job is to help the director tell a story.

Sound work, like picture editing, must never draw attention to itself. We agree with Mr. Hodges that audiences might grow more sensitive to subtlety and articulation in sound, that there is too much that is too "big" in sound effects today. We have to disagree with his implication that we try to make everything sound big. The relative volumes in a sound mix are the responsibility of the director, often against the mixers' and editors' better judgment.

Mr. Hodges implied that the better sound editors may be old and stubborn about their techniques. We think he has some strange ideas about the typical age of our people. Moreover, no one is editing sound on modern features who hasn't worked very hard to understand new techniques.

*Back to the Future* was an unfortunate choice to exemplify the size of a sound crew. We seldom see crews get that big, even though more and more films suffer from outrageous scheduling demands. *Future's* sound work was outstanding in spite of the rush.

DAVE STONE  
 Technical Committee  
 Motion Picture Sound Editors  
 Universal City, CA

### "Essential" CD's

Barry Krusch's list of twenty-five "essential" classical CD's in October "Letters," while intended as a guide for someone discovering classical music, is a bit formidable and perhaps esoteric. Shostakovich's string quartets are definitely not for everyone, especially someone who is just getting his ears accustomed to classical music.

I think someone getting his feet wet in the classical waters should try some more mainstream items. Therefore, I would direct such a person to:

1. Vivaldi: *The Four Seasons*.
2. Bach: *Brandenburg Concertos*.
3. Mozart: *Eine kleine Nachtmusik*.
4. Haydn: any of the symphonies.
5. Beethoven: the nine symphonies.
6. Rimsky-Korsakov: *Scheherazade*.
7. Berlioz: *Symphonie fantastique*.
8. Tchaikovsky: *The Nutcracker*.
9. Tchaikovsky: Piano Concerto No. 1.
10. Richard Strauss: *Also sprach Zarathustra*.
11. Prokofiev: *Romeo and Juliet*.

Mr. Krusch's list was nearly devoid of vocal works, and opera did not appear. To help the newcomer accustom untrained ears to the sound of the trained voice, I would suggest initial exploration of the operettas of Gilbert and Sullivan, Johann Strauss, and Jacques Offenbach. To move into opera proper, my beginner's list would include:

1. Puccini: *La Bohème* and *Madame Butterfly*.
2. Verdi: *Rigoletto*, *La traviata*, and *Aida*.
3. Rossini: *The Barber of Seville*.
4. Bizet: *Carmen*.
5. Mozart: *Così fan tutte*.

Many of us first gained a taste for classical music by meeting the above-mentioned works, sampling the music and sounds of different eras, and then proceeding from such familiar fare in

the direction of our own particular tastes, perhaps even to Shostakovich.

DAVID L. KIRK  
 Wheaton, IL

Being drawn into the world of CD's recently, I would appreciate it if someone could provide me with a list of twenty-five "essential" jazz CD's to add to my collection.

FRANCIS J. DE ORIO  
 Auburn, NY



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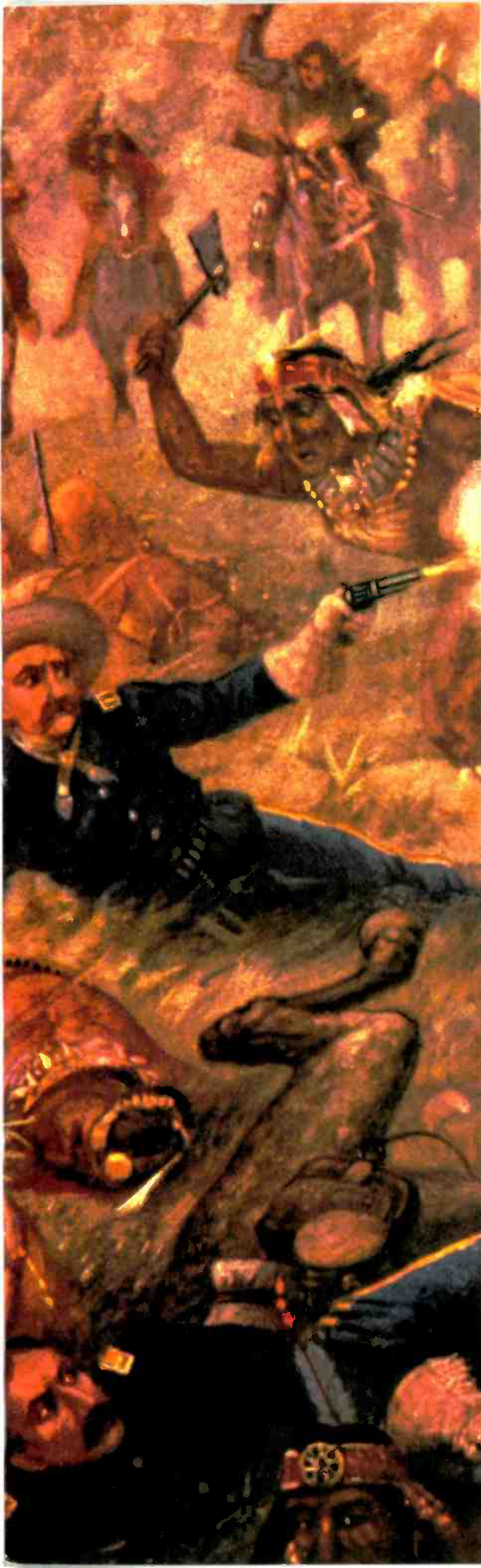
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## Technics

Now you can experience surround sound and live to tell about it. Thanks to the technology found in the Technics SA-R530 A/V receiver. A receiver so advanced, it can help you get more out of almost every piece of audio and video equipment in your home.

For example, just hook up four speakers, and your VCR will have the added dimension of Dolby surround sound.\*

Digitally-processed Dolby surround sound, to be exact. Which means the SA-R530 can give movies something even more impressive than the sound of most movie theaters. The sound of real life.

You'll hear footsteps creeping up behind you, cars screeching to a halt right in front of you, gunshots coming at you from every direction. In short, it's the next best thing to being there.

And to enhance the music on your CD player, cassette deck and turntable, there's also a special feature that lets you change your listening environment.

Press a button and the SA-R530 can simulate the acoustics of a small club; a theater; or even a concert hall. So finally, you can hear music in the environment where it was meant to be heard.



But even with sound this realistic — and a full 100 watts of power per channel (at 8 ohms, 20Hz — 20kHz with 0.007% THD) — our A/V receiver won't have you jumping out of your seat. For it comes with a remote control that also operates most other Technics audio components, as well as many brands of remote controllable TVs and VCRs. So no matter how complex the technology behind this receiver may be, operating it is surprisingly simple.

For your own free demonstration, just go to any Technics dealer. We think you'll find surround sound a lot more entertaining today than it was in 1876.

\*Compatible video software required. "Dolby" and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.

# IN 1876, GEORGE CUSTER HAD A FREE DEMONSTRATION OF WHAT SURROUND SOUND WOULD BE LIKE IN 1989.



Technics Surround Sound A/V Receiver with Remote Control.

CIRCLE NO. 181 ON READER SERVICE CARD

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If you couldn't see what you were smoking,  
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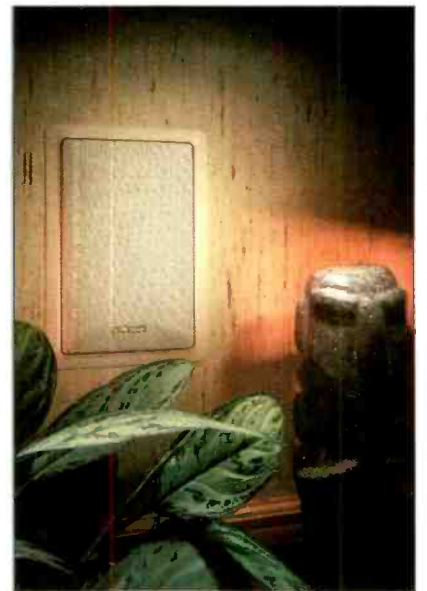
## NEW PRODUCTS

### Pioneer

Pioneer has added the CT-91 cassette deck to its Elite line of components. The three-motor, three-head deck has Dolby HX Pro headroom extension, a bias-adjustment control, Dolby B and Dolby C noise reduction, a closed-loop, dual-capstan transport mechanism, and a stabilizer system that holds the cassette shell securely to prevent vibration.

Input and output jacks are gold-plated, and the internal components are extensively copper-plated. The lacquer-finish front pane and rosewood-finish side panels match other Elite series components. Price: \$950. Pioneer Electronics, Dept. SR, 2265 East 220th St., P.O. Box 1720, Long Beach, CA 90801-1720.

**Circle 120 on reader service card**



### Polk Audio

Polk Audio's AB-7 loudspeaker is designed for home and commercial installations in walls and other flat panels. The two-way speaker has a 6½-inch woofer and a 1-inch dome tweeter. To mount the speakers, an installer tightens six screws attached to spreader bars that grip the wall in six places behind the cutouts. Self-sticking, full-size pictures of the 6¼ x 9¾-inch AB-7's are included to help determine their best position. Practice placement also allows the installer to check for studs and water pipes before cutting the wall. The speakers have white metal grilles that can be painted to match any decor. Frequency response is rated as 30 to 26,000 Hz, nominal impedance is 6 ohms, and power handling is 10 to 100 watts per channel. Price: about \$400 a pair. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215.

**Circle 90 on reader service card**

### Coustic

The Coustic RX-728 autoreverse cassette receiver for the car is the top model in the company's 700 Series. The tape player features Coustic's Auto-Aligned Azimuth technology, which is said to eliminate high-frequency losses resulting from azimuth misalignment, Dolby B and Dolby C noise reduction, program search, and an ignition-off pinch-

roller release. Frequency response is rated as 30 to 20,000 Hz  $\pm$  5 dB with Type II tape. The tuner has twelve presets and both manual and auto-seek tuning. The amplifier is rated to deliver 25 watts per channel, and there is a CD input. Price: \$315. Coustic, Dept. SR, 4260 Charter St., Vernon, CA 90058.

**Circle 121 on reader service card**



### Samsung

Samsung's VR7500F VHS Hi-Fi VCR has an MTS decoder for stereo and SAP reception. It includes a twenty-three-function remote control with direct-access tuning, a fourteen-day/four-event programmable timer, high-speed picture search in three speeds, one-touch recording for up to 4 hours, and three-speed recording and playback. The 110-channel tuner has VHS HQ circuitry. Price: \$649.95. Samsung Electronics America, Dept. SR, 301 Mayhill St., Saddle Brook, NJ 07662.

**Circle 122 on reader service card**





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Sony AV Laser  
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When your family is done flipping the old Frisbee,<sup>®</sup> there's something else they'll flip over. The new Sony AV Laser.<sup>™</sup> Its ability to play multiple size discs presents your family with an extravaganza of entertainment possibilities. Movies, CD concerts, rock videos, educational discs—your name it, and your family has found the perfect home for it in the new Sony AV Laser player.

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Great movies are sailing your way on the 12" laserdisc. And not just a few. A whole sky full of 'em. Spaghetti westerns. Romances. Comedies. War flicks. Horror movies. And you'll have more fun watching them than ever before. Thanks to a razor sharp picture with up to 425 lines of resolution. Plus digital audio sound.

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But you'll be seeing more than movies. View the world's greatest paintings,



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Right now, when you buy a Sony AV Laser, we'll send you free two big movie hits on 12" laserdisc. "Moonstruck" from MGM/UA. And "Beetlejuice" from Warner Home Video. Plus a free Frisbee. When you buy a Sony AV Laser player (which combines a great video system

operas and concerts from your easy chair. Or enjoy educational shows that let you and the kids visit wild animals in their natural habitat without leaving the comfort of your own.

**The 8" Laserdisc. A big entertainer in a smaller size.**

Naturally the 8" disc doesn't run quite as long as the 12" disc, but it's packed with all the quality you appreciated in the larger one. The 8" will also turn your head with up to 425 lines of razor sharp resolution. And again, digital audio sound. All of which makes family entertainment more entertaining than ever.

**The CDV. It's 5" of fun for everyone.**

Even mom and dad may want to get in on the excitement spun out by these CDVs. They offer a generous helping of CD music followed by a rock video that'll amaze any age. Dazzling light shows and all kinds of fantastic video effects will really get your place jumping.

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CDs have proved to be the most dramatic audio advance in decades. With this in mind, we made sure our AV Laser wouldn't just revolve around video discs, but compact discs as well. When you play one on



the AV Laser, you'll enjoy all the sound quality you'd find on one of our best CD players. Thanks to such brilliant features as 4X oversampling, 16 bit filters, and dual D/A converters.

**The CD-3.<sup>™</sup> The latest hit for the latest hits.**

Remember how much fun you had listening to 45s as a kid. Now your kids can have the same kind of fun with the new CD-3s. Each disc is only 3", but it's packed with 20 minutes of today's hottest music. Another big hit is sure to be the modest price.

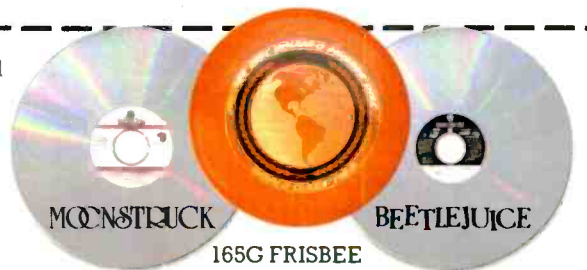
So considering all the varied entertainment that's available to you, it only makes sense to have a Sony AV Laser. And to find out just how entertaining it can be, call 201-930-7669.

Of course, once you own one, if there's something you like, you can just play it.

And if it won't play, just toss it.



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with a superior CD player) we'll also offer you 5 CDs for the price of one. For more details, see your participating Sony dealer. This offer is good only from September 1, 1988 through January 31, 1989. So catch it while you can.

## NEW PRODUCTS



### Shure

Shure's Theater Reference System is a ten-piece ensemble consisting of an Acra Vector surround-sound decoder, three signal-processing amplifiers, one center front speaker, left and right front and rear speakers, and a subwoofer. The decoder comes with a wireless remote that is said to prevent inadvertent volume overload. An optional wired remote extender is available to accommodate any installation. The main and rear speakers have 6½-inch woofers and 1-inch soft-dome tweeters. Cabinet dimensions are 13½ x 10 x 8¾ inches. The center front speaker, with two 6½-inch woofers and a 1-inch soft-dome tweeter, measures 20 x 13½ x 8¾ inches. The subwoofer measures 18 x 23 x 14 inches with a 1½-inch base. System price: \$9,600. Shure Home Theater Sound, Dept. SR, 222 Hartrey Ave., Evanston, IL 60202-3696.

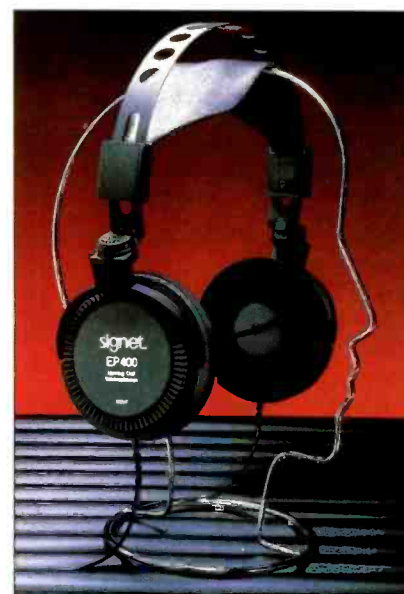
**Circle 123 on reader service card**

### Dual

Dual's "Audiophile Concept" CS 7000 three-speed, belt-driven turntable features the company's Optimum Pivot System (OPS). The gyroscopic-gimbal tonearm has a tube plated with 24-carat gold and internal damping made from a proprietary composite material, which are said to reduce its resonance sensitivity. The CS 7000 is supplied with both fixed- and variable-VTA (vertical track-

ing angle) carbon-fiber headshells. Other features include auto stop and tonearm lift at the end of a record and a viscous-damped cue control. The high-torque, flat-rotor motor is controlled by a quartz-locked microprocessor. Dimensions are 17½ x 5¼ x 15¼ inches. Price: \$750. Dual, Dept. SR, 122 Dupont St., Plainview, NY 11803.

**Circle 124 on reader service card**



### Signet

The EP400 moving-coil dynamic stereoephone from Signet has a high-flux samarium-cobalt magnet and oxygen-free silver/copper wire in the voice-coil winding. Oxygen-free copper in the 10-foot audio cord is said to provide maximum conductivity and minimal signal loss as well as extended dynamics and distortion-free sound. Frequency response is rated as 20 to 22,000 Hz. Price: \$100. Signet, Dept. SR, 4701 Hudson Dr., Stow, OH 44224.

**Circle 125 on reader service card**





RZ-7000 Computerized Stereo A/V Receiver

# CRAFTSMANSHIP

We put so much into our new RZ-7000 Computerized Stereo A/V Receiver, we thought it deserved a new, sleek look on the outside, too. It deserves more because it provides a better man/machine interface that makes every operation simpler and more logical. Like the station call/equalization memory system: not only can you preset stations and equalizations, you can give them four-character names for quick and easy recognition. You can even make an equalized setting part of the station preset.

And it deserves more because it has everything you need to incorporate audio and video components into a single versatile system.

Don't you think you deserve the RZ-7000?



The RZ Series of receivers consists of the RZ-7000, RZ-5000, RZ-3000 and RZ-1000.



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## NEW PRODUCTS

### Universal

The Universal V-7472 is a seventy-two-channel TV/cable converter with wireless remote control. It includes a 90-minute sleep timer and a built-in MTS decoder for stereo programs. The remote handset controls channel selec-

tion, fine tuning, volume, muting, and power on/off for any TV set. Price: \$229. Universal Security Instruments, Dept. SR, 10324 S. Dolfield Rd., Owings Mills, MD 21117.

**Circle 126 on reader service card**



### Datawave

The Private Waves wireless headphone system from Datawave uses radio frequencies rather than infrared to carry signals, eliminating the need for line-of-sight transmission and increasing the range. The lightweight, battery-powered receiver, which clips onto the user's pocket or belt, is said to be able to pick up a high-quality signal anywhere within 75 feet of the transmitter, even through walls or floors. The transmitter, powered by the supplied AC adaptor, connects in the audio-output or head-

phone jack of any audio or video component. One transmitter can be used with several receivers, and both units have on/off/volume controls and dual frequency selectors for optimal reception. The earbud-type phones have a detachable headband. Frequency response is rated as 80 to 15,000 Hz. Price: \$99.95 for the complete set; \$29.95 for additional receiver/earphone units. Datawave, Dept. SR, 19611 Ventura Blvd., Tarzana, CA 91356.

**Circle 127 on reader service card**



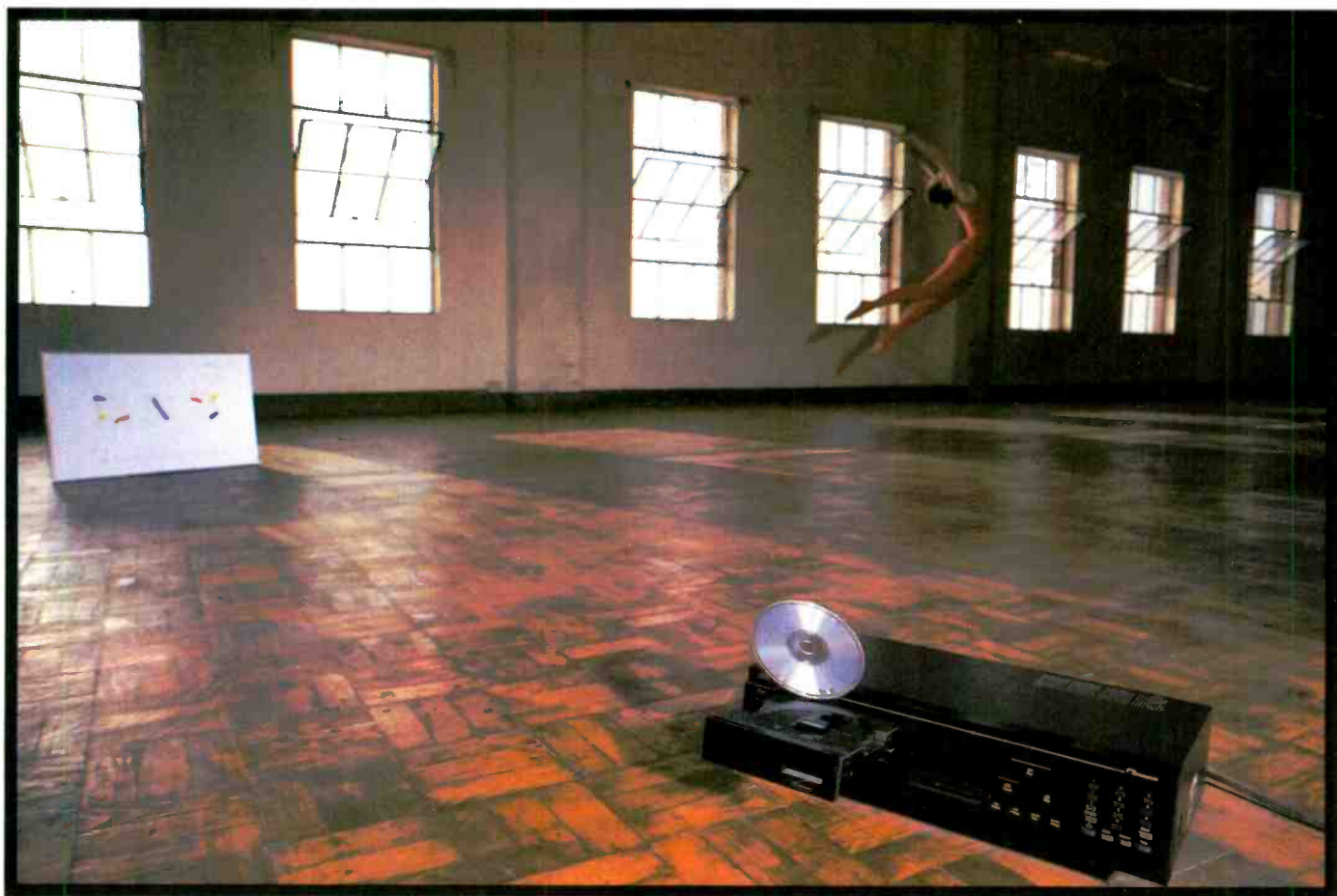
### Phantom Acoustics

Based on electronic servo designs by Nelson Pass, the Phantom Acoustics Shadow is an active system for the control of low-frequency room resonances. Designed for placement in a room corner, the columnar system contains two modules, each with a microphone, a servo-amplifier, and transducers, one at the top and the other at the bottom of the column. Each module is said to reduce sound-pressure energy by 90 percent at 50 Hz, for a total of 20 dB of suppression for each column. The effect is to eliminate standing waves and to reduce other room-boundary effects, thus "cleaning up" bass reproduction. The Shadow uses AC power and requires no connection to any other component. Height is 83½ inches, column diameter is 9½ inches, and base diameter is 15 inches. Price: \$1,790 a pair. Phantom Acoustics, Dept. SR, 12919 Earhart Ave., Auburn, CA. 95603.

**Circle 128 on reader service card**



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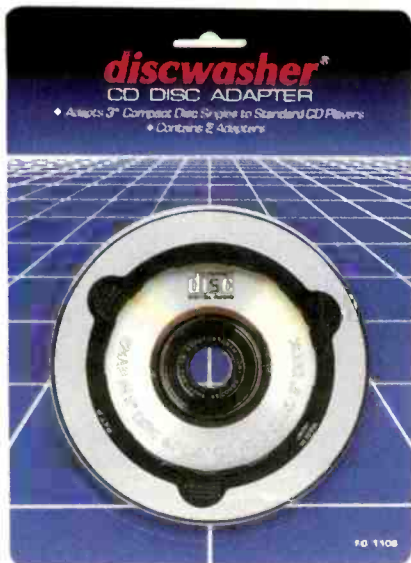
Nakamichi America Corporation  
19701 South Vermont Ave.  
Torrance, CA 90502 (800) 421-2313  
(800) 223-1521 (California)  
Nakamichi Canada (800) 663-6358

## NEW PRODUCTS

### Discwasher

The Discwasher CD disc adaptor allows 3-inch CD singles to play in machines designed for 5-inch CD's. The adaptors are made of impact-resistant plastic and safely support a CD-3 inside a standard player. The adaptor fits around a 3-inch CD, effectively enlarging it to 5 inches in diameter. It can be easily removed from the disc or stored with the CD-3 inside. Price: \$3.99 for two. Discwasher, Dept. SR, 4310 Transworld Rd., Schiller Park, IL 60176.

Circle 129 on reader service card



### SSI

The latest Dolby Surround decoder from SSI, the System 4000, features dynamic logic circuitry, voltage-controlled attenuators to eliminate "pumping and breathing" in the processed channels, and a 45-watt amplifier to drive either a pair of rear speakers or a center-channel front speaker. The dynamic logic circuitry is said to provide a wider, deeper, and quieter sound field "without the crosstalk present in many other decoders."

The System 4000 can handle four dif-

ferent source components, with front-panel switching, and includes a surround mode for non-Dolby stereo recordings as well as an enhancement mode for mono programs. Other features include a front/rear balance volume control, automatic Dolby B noise reduction for Dolby Stereo soundtracks, variable delay time, and a wireless remote control. Price: \$599.95. SSI, Dept. SR, 400 S. Date Ave., Alhambra, CA 91803.

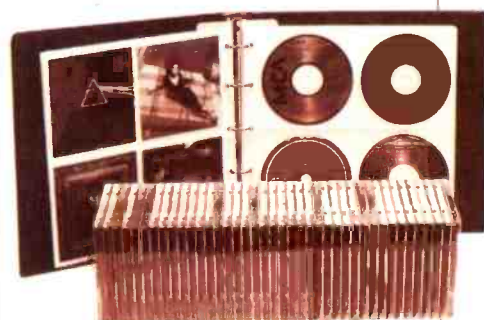
Circle 130 on reader service card

### Denon

The Denon PRA-1200 preamplifier incorporates the company's Unity Gain Interface output stage, which is said to insure a low output impedance, 10 ohms, for optimal performance with almost any type of power amplifier or length of cable. It has a switchable MM/MC phono input, line-level inputs for a CD player and a tuner, two audio tape-monitor loops with bidirectional dubbing, and three sets of auxiliary/video

inputs. Video buffer amplifiers drive one video record output and one monitor output. All of the controls except volume, input selection, and power are concealed behind a hinged door. Total harmonic distortion is rated as no more than 0.002 percent from 20 to 20,000 Hz at 5 volts output. Price: \$450. Denon, Dept. SR, 222 New Rd., Parsippany, NJ 07054.

Circle 131 on reader service card



### Univenture

The CD-Binder 40 from Univenture stores forty CD's in photo-album style, eliminating the need for bulky jewel boxes. The clear pockets have flaps that allow you to remove a disc safely without touching the playback side. Price: \$17.95 for the standard version, \$22.95 for the padded "executive" version. Univenture, Dept. SR, P.O. Box 570, Dublin, OH 43017.

Circle 132 on reader service card



The ultimate in sound... The ultimate in savings...



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DISC  
CLUB**

174328. George Harrison—Cloud Nine. Got My Mind Set On You, more. (Dark Horse)

115457. Itzhak Perlman: French Violin Showpieces. Havanaise, Carmen-Fantasy, more. (DG DIGITAL)

134408. David Sanborn—Close Up. Slam, You Are Everything, etc. (Warner Bros.)

163629. Whitesnake. Still Of The Night, Give Me All Your Love, more. (Geffen)

134420. John Cougar Mellencamp—The Lonesome Jubilee. (Mercury)

152854. Whitney Houston—Whitney. Didn't We Almost Have It All, etc. (Arista)

182522. Dirty Dancing (Original Soundtrack). (I've Had) The Time Of My Life, more. (RCA)



154633

180187. Bruce Hornsby & The Range—Scenes From The Southside. The Valley Road, more. (RCA)

124546. The Moody Blues—Sur La Mer. I Know You're Out There Somewhere, No Lies, etc. (Threshold)

125179. Tchaikovsky. 1812 Overture; Nutcracker Suite; more. Solti. (London DIGITAL)

144578. The Judds—Greatest Hits. Give A Little Love, Mama He's Crazy, more. (RCA)

143465. Bon Jovi—Slippery When Wet. Livin' On A Prayer, etc. (Mercury)

115530. Eine kleine Nachtmusik, Pachelbel Canon, Toy Symphony. Murriner. Acad. of St. Martin. (Philips DIGITAL)

153582. Tracy Chapman. Fast Car. Talkin' Bout A Revolution, Baby Can I Hold You, etc. (Elektra)

123385. Eric Clapton—Time Pieces (The Best Of). Layla. I Shot The Sheriff. After Midnight, etc. (Polydor)

115436. Horowitz Plays Mozart. Concerto No. 23, more. (DG DIGITAL)

123721. Jimmy Page—Outrider. Wasting My Time, The Only One. Wanna Make Love, Hummingbird. (Geffen)



173233

163600. Segovia Plays Bach. 3 Lute Pieces, Chaconne, more. (MCA)

153810. Talking Heads—Naked. (Nothing But) Flowers. Mr. Jones, Totally Nude. Blind, etc. (Sire/Fly)

115306. Handel. Water Music. Trevor Pinnock, cond. (Archiv DIGITAL)

172190. Elvis Presley—The Number One Hits. 18 #1s. (RCA)

223559. Beach Boys—Endless Summer. Fun Fun Fun. I Get Around, Surfer Girl, Don't Worry Baby, more. (Capitol)

153501. U2—The Joshua Tree. With Or Without You. Still Haven't Found What I'm Looking For, etc. (Island)

105392. Pops In Space. Boston Pops Williams: Star Wars, Superman, more. (Philips DIGITAL)

173406. Jazz CD Sampler. 15 performances from Louis Armstrong, others! (PolyGram)

100008. Randy Travis—Old 8x10. Honky Tonk Moon, Deeper Than The Holler. Is It Still Over?, more. (Warner Bros.)

115356. Vivaldi, The 4 Seasons. Trevor Pinnock. (Archiv DIGITAL)

164160. The Who—Greatest Hits. Pinball Wizard. Who Are You, Magic Bus, more. (MCA)

100035. Robert Palmer—Heavy Nova. Simply Irresistible. It Could Happen To You. She Makes My Day, etc. (EMI-Manhattan)

134647. Rhapsody In Electric Blue. Gershwin on synthesizer by Jeffrey Reid Baker. (Newport Classic DIGITAL)

244006. Simon & Garfunkel—The Concert In Central Park. [1 disc] (Warner Bros.)

134321. Led Zeppelin—Houses Of The Holy. The Song Remains The Same, more. (Atlantic)

144313. Classic Rock, Vol. 1. Elton John: Bennie & The Jets; Steppenwolf: Born To Be Wild; Steely Dan: Do It Again; etc. (MCA)

147374. Dire Straits—Brothers In Arms. Money For Nothing, Walk Of Life, etc. (Warner Bros.)

154404. Chicago 19. I Don't Wanna Live Without Your Love. Heart In Pieces, etc. (Reprise)

125157. Rachmaninov, Piano Concerto No. 3. Vladimir Ashkenazy, piano. (London DIGITAL)

150913. Van Halen—OU812. When It's Love. Black And Blue, etc. (Warner Bros.)

160027. Alabama—“Live”. Love In The First Degree. There's No Way. Dixieland Delight, etc. (RCA)

262889. Virgil Fox—The Digital Fox. (Bainbridge DIGITAL)

144313. Classic Rock, Vol. 1. Elton John: Bennie & The Jets; Steppenwolf: Born To Be Wild; Steely Dan: Do It Again; etc. (MCA)

143612. Beethoven, Symphony No. 6 (Pastorale); more. (Pastorale). (RCA DIGITAL)

143437. Huey Lewis & The News—Small World. (A&M)

15541. Bach. Brandenburg Concertos Nos. 1-3. Pinnock. (Archiv DIGITAL)

163322. Elton John—Gt. Hits, Vol. 1. (MCA)

153697. Elton John—Gt. Hits, Vol. 2. (MCA)

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# "If I Had It To Do All Of This Is Ho

"The technology for a new generation of loudspeaker systems was already here," says Henry Kloss. I was just the first one to put it together right."

"Right," in this case, meaning a stereo system that allows the integration of speakers into a room in a way that's never before been possible.

## Ensemble. The last loudspeaker of Henry Kloss.

Ensemble combines two bass units, two mid- to high-frequency units and something you won't find in any hi-fi store on earth.

Your living room. Which now, because of Ensemble's unique "system" design—becomes a seamlessly integrated part of the sound propagation process.

The result is a system that gives you perfectly balanced energy throughout the full ten octaves of music. And one which, at the same time, can be virtually invisible in your living room.

## The first speaker system that doesn't cheat you out of either bass or space.

The fundamental octaves that so much of music is built on...

The almost sub-audible but palpable

sounds generated by the big pipes of the organ, the bottom of the acoustic or electric bass, the low notes of the synth...

The frequencies completely ignored in the so-called "mini-speakers" now in vogue...

Ensemble provides them. With two dedicated, acoustic-suspension loudspeakers whose jobs are solely to reproduce the bottom two octaves of musical significance.

It is by design, not afterthought, that Ensemble comes with two, not one, bass units.

Because the human ear can't easily localize bass sound below about 150 Hz,

there is no need in a home music system for the bass to emanate from the same source as the higher frequencies. (And many acoustical reasons why it shouldn't.)

So to take advantage of this basic but vastly overlooked fact, the bass units are built small enough to be placed where they'll produce the best sound, without visually overpowering your room.

They are a compact 12" x 21" x 4.5". Yet they generate the low-frequency energy that would ordinarily require either a pair of very large conventional loudspeakers, or adding on a massive "subwoofer." Moreover, using two separate easily placed bass units dramatically reduces the creation of standing waves—the bane of pure hi-fi reproduction.

Without detriment to the sound, Ensemble's bass units can be placed beneath the couch, on top of the bookshelf, or under the potted plant.

And the result is a happy coincidence: Where the units sound the best is likely where they'll look the best. Even if that means not being able to see them at all.

*There is a wager you can make, if you don't mind taking money from house guests.*

*Place Ensemble's satellites where they're visible.*

*Then hide one of the bass units under the sofa, and put the other on the floor with a plant on it. When your friends arrive, bet them to point out where the bass is coming from. They'll point to the satellites. Every time.*

## As for the other 8 octaves of music.

The rest of the sound spectrum, from a nominal crossover of 140 Hz, is reproduced by a stereo pair of two-way satellite units. Each incorporates a low-frequency driver, crossing over at 1,900 Hz to a direct-radiator tweeter that goes beyond audibility.

They are small enough (4" x 5" x 8" high) to set the sound stage (or so-called "imaging") wherever you want it.

Finished in scratch-proof, gunmetal grey Nextel, they will look good for a lifetime.



## What Henry Kloss tells his friends:

Every time I came out with a new speaker at AR, KLH, or Advent, my friends would ask me, "Henry, is it worth the extra money for me to trade up?" And every time I would answer, "No, what you've already got is still good enough!"

But today, with the introduction of Ensemble, I tell them, "Perhaps now is the time to give your old speakers to the children!"

## Overcoming the fear of paying too little.

This is more difficult than it may sound. Because the Ensemble System sells for an introductory price of only \$499.

And it can be jarring to accept the notion that a product actually outperforms others costing several times more. But think back on Henry Kloss' track record with AR, KLH, and Advent, the best selling high-performance speakers of their decades... Our commercial success will come not from excessive prices



# ver Again... And I Do... w I'd Do It."

*Henry Kloss. Member of the Audio Hall of Fame. The creator of Acoustic Research in the 1950's, KLH in the 1960's, and Advent in the 1970's—the dominant speakers of their decades—now brings you Ensemble: the best-sounding speaker system of this era.*



on a small number of sales, but from selling a lot of systems to a lot of people. You, perhaps, among them.

The second thing you must overcome is the misdirected notion that you must go to a dealer showroom and listen to the speakers.

Because the fact is, the *only* way to appreciate the astonishing sound reproduction of this unconventional system is to audition it in your own room environment. Therefore, we sell only factory-direct. Either by phone, by mail, or by our front door, to make it as easy as possible to get the speakers to your front door.

They come with a straightforward 30-day money-back return policy.

## Speaking directly to the people who make the speaker.

To our knowledge, no other hi-fi manufacturer invites you to call, talk about, and buy the system. ("Hello, Mr. Sorry?" Try that.)

We welcome you.

In fact, the easiest way to buy Ensemble is to call us with your credit card in hand, and speak with someone who will be happy to walk you through, talk you through, everything you might ever want to know about the system. From why or why not to buy Ensemble, to questions about installation, room

*The Ensemble Stereo System: 2 bass units, 2 satellites, 100 feet of wire, mounting units, intelligent documentation, and a warm body. (Your Cambridge SoundWorks audio expert.)*



placement and other related audio equipment.

To get literature, to chat—or to order—the toll-free number is 1-800-252-4434, Mon.–Thurs., 9–9, Fri. and Sat., 9–6 Eastern Time. (In Canada, 1-800-525-4434.) Fax # (617) 332-9229.

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by Ian G. Masters



## Harsh CD Sound

**Q** Although I have not been pushing my equipment anywhere near its limits, I find that many—but not all—compact discs seem to have an overly bright, “shiny,” and harsh sound. What’s the problem, and what can I do about it?

JAMES HOPKINS  
Larchmont, NY

**A** This is what many people think of as the distinctive “digital sound,” but it really has nothing to do with the digital process (if it did, all CD’s would sound overly bright). The majority of recordings now being issued on compact disc were originally intended for release primarily on vinyl, and over the years many engineers developed the practice of adding equalization to overcome the limitations—or perceived limitations—of that medium. When master tapes that contain this correction are transferred to CD, the result is excess equalization unless specific steps are taken to counteract it.

Unfortunately, there has never been any standard for such equalization, so removing it is a matter of taste on the part of whoever makes the transfer to the digital medium. For this reason, many tapes are *not* corrected, leaving that to the ultimate listener and *his* taste. Presumably this will become less common in time; for now, however, you will simply have to adjust your treble control until things sound right.

## Total Harmonic Distortion

**Q** Technical reviews and specifications always list a component’s total harmonic distortion, and it would seem to be important in making a buying decision. What is it, and how is it measured?

JOHN A. PFEFFER  
West Valley, NY

**A** An ideal audio device would produce at its output an exact replica of the input waveform, altered only as intended (for instance, in the case of an amplifier, made larger). In fact, however, all components contribute *something* extraneous to the signal; anything that makes the output waveform differ from the input is called “distortion.”

Much of the contamination is mathematically related to the wanted signal. An audio component can add harmonics that are exact multiples of the original signal frequencies, and in large amounts these harmonics can change the character of the sound. This is analogous to the way a musical instrument’s timbre is determined by its “overtones” or harmonics.

It’s usual to measure all the unwanted harmonic material and express it as a percentage of the overall signal—total harmonic distortion, or THD—although individual harmonics are sometimes measured as well. The simplest way to make the measurement is to combine the input and output signals at exactly the same level but out of phase. An undistorted signal would cancel out entirely; anything that is not canceled is distortion. Its level is then expressed as a percentage of the total.

## Tape-Deck Alignment

**Q** A number of cassette-deck test reports I have read say that the sample arrived from the factory out of alignment. Is there any way I can check my own deck for proper alignment without using test equipment?

DAVID H. SIMMONS  
St. Louis, MO

**A** The only sure way to check your deck’s alignment is to take it to the shop and have it done properly. But there are some rough tests you can perform to ascertain whether you *need* to take it in for service.

There are several ways tape heads can be misaligned. For instance, the tape should make contact with the head precisely at the head gap; if the head assembly is rotated in the horizontal plane, a “zenith” error occurs. If this is severe enough, it can cause sensitivity to drop-outs, high-frequency loss, or, in the worst cases, loss of signal entirely.

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In 1972, Magnepan’s Jim Winey received a patent on a full-range, planar/magnetic type of loud-speaker which became the most successful esoteric speaker in the history of high-end audio. Other companies have introduced speakers with similar drivers (sometimes called “ribbons”), but Magneplanars, with over 100,000 sold, remain the choice of audiophiles.

In 1982, Jim Winey received a patent on a *true*, line-source ribbon speaker. The combination of these two technologies, as shown above, is incorporated in the MG-2.5/R, at \$1550/pr. and the MG-IIIa at \$1995/pr.

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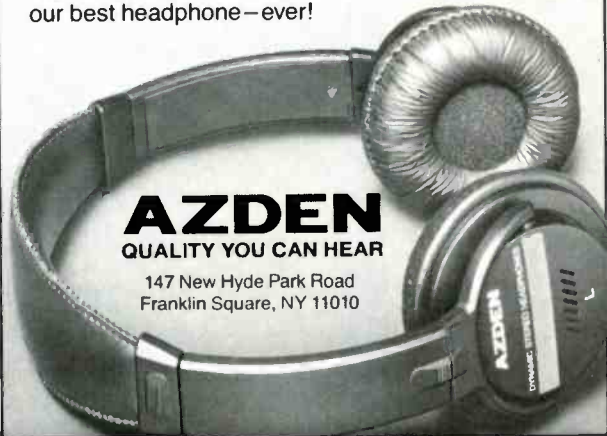
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## AUDIO Q&A

Usually, however, the tape wraps around the head slightly, and this overcomes all but the worst zenith error. If the inevitable buildup of oxide on the head over a period of time occurs more on one side of the gap than the other, you may have a zenith problem.

Occasionally, the head will be mounted so that its face is not exactly parallel to the tape surface, making the tape-to-head contact better on one track than the other. Cassettes compensate for this problem to some extent by means of their built-in pressure pads, which hold the tape in contact with the head. But weaker treble on one track may be an indicator of this sort of misalignment. Also, the tendency of the tape to skew in the direction of the lighter contact may cause crosstalk problems. In the long term, uneven head wear is often a symptom.

Crosstalk difficulties may also suggest that the heads are mounted slightly too high or too low, so that they do not coincide exactly with the tracks on the tape itself. In gross cases, some of the material recorded in the reverse direction can creep into the output. Other indicators are mismatched levels between tracks and left-right crosstalk. The latter will always happen in the same direction (left always leaking into right, for instance) and will only show up with tapes recorded on other decks.

The most severe sort of misalignment concerns "azimuth." The signal is recorded as a series of bands across the tape; to extract the maximum information, the playback head gap must be exactly perpendicular to the direction of tape motion. Any deviation will cause the gap to read only part of the signal, a condition that is particularly serious at high frequencies, where the signal wavelength approaches the width of the head gap. With two-head machines, where the same head is used both to record and play back, azimuth errors won't be very apparent when you play back recordings made on the same machine, but playing a tape recorded by a misaligned deck on one that is correctly set up (or vice versa) will result in substantial high-frequency loss.

A quick test for azimuth alignment is to play a tape you know to have proper alignment (there are test tapes for this purpose, but a prerecorded "audiophile quality" cassette will work just as well). The tape should have lots of center-stage information and high-frequency content. Switch your amplifier to mono, and listen for the sort of "swishing" noise recording engineers call "flanging." This effect occurs because the misaligned head reads one track slightly ahead of the other; when the two signals are combined, there is a variable signal cancellation that is clearly audible. □

"Shure's most recent version of its top model, the V15 Type V-MR... strikes this listener as perhaps the most musical-sounding cartridge ever made."

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# Receive without misgivings.

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"If you want performance, separates are the way to go." It's common advice. And considering Carver's innovative preamplifiers, power amplifiers and tuners, we've probably contributed too heavily to this opinion.

But, there *are* other equally high-performance alternatives: three Carver remote controlled receivers which give you the power, musicality and accuracy of our separates... yet which take up just 1.2 cubic feet of shelf space.

All three have Magnetic Field Power Amplifier sections that deliver astonishing dynamic power reserves without the heat, bulk and expenses of conventional designs.

Consider the AVR100. It's one of the most powerful receivers ever built. (150 watts per channel into 8 ohms 20 to 20kHz with less than 0.1% THD). But that's just the start. You get the finest FM section available on any receiver, thanks to what Audio magazine termed "...one of the few important circuitry developments in FM radio to come along in several years." We call it Asymmetrical Charge-Coupled FM Detection. You'll call it the clearest, most noise-free reception imaginable. Annoying multi-path interference is stilled; distant stations come in clean and quiet.

Naturally the full-feature preamplifier section includes a Sonic Hologram Generator to recreate the realism and 3-dimensionality of a live performance (from any stereo

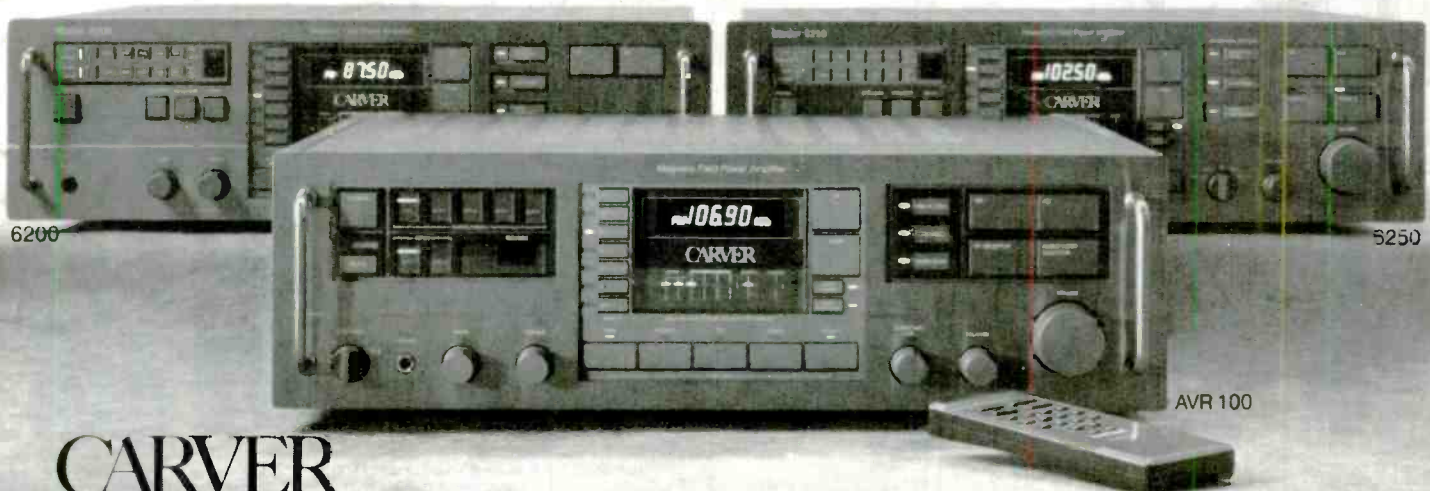
source and over your existing speakers), as well as four video inputs (with switching and dubbing) and even variable surround sound that brings movie sound tracks alive.

Our 6250 and 6200 receivers continue the Carver tradition of power and accuracy. Other companies' 100-watt receivers are at or near the top of their line — with price tags to match. Our "smallest," most affordable receiver, the 6200, delivers 100 minimum continuous watts per channel (RMS), both channels driven into 8 ohms, from 20-20kHz, with less than 0.1% Total Harmonic Distortion with even more power for dynamic musical peaks! The 6250 (125 watts per channel, minimum output, both channels driven into 8 ohms from 20Hz to 20kHz with no more than 0.1% THD.) adds Sonic Holography® Asymmetrical Charge Coupled FM Detection, video switching and an even more powerful Magnetic Field Power Amplifier section.

If you still have any misgivings about how much performance can be packed into a receiver, visit your nearest Carver dealer for a breathtaking demonstration of Sonic Holography®, silken FM reception and awesome power.

After all, the point isn't really whether to get a receiver or separates.

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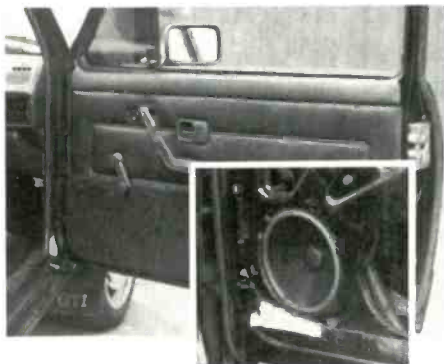
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# The **Boston** Acoustics

## Installation of the Month Contest



Small but mighty. Randy Robert's compact 1984 VW GTI contains an extraordinary powerhouse of an audio system.



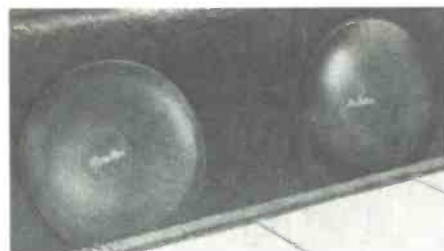
The pockets were removed and carpeting added to the front doors to retain the factory appearance for the woofers of the 761 systems. The systems' Varimount® tweeters (without their wedge housings) are in the factory dash locations for best stereo imaging and separation. Inset: one of the 6½" woofers shown with door panel removed.



780LF 8" subwoofers on top of rear deck provide tight midbass. (Above, seen from front; below, seen from rear.)



710LF 10" subwoofers facing forward provide the lowest frequencies. (The spare tire is still in the car and accessible by pushing the custom-designed subwoofer box forward.)



5¼" woofer from 751 two-way component system. 6½" woofer from 761 two-way component system. 8" 780LF subwoofer. 10" 710LF subwoofer.

Varimount CFT tweeter from 751 and 761 component systems.

Without housing for flush mounting. Wedge housing also provided for surface mounting.

Boston, Boston Acoustics and Varimount are registered trademarks of Boston Acoustics, Inc.

### Our final winner: Randy Roberts, Gahanna, OH

Randy has a convincing way of expressing his pleasure with the new Boston Highway HiFi system in his 1984 VW Rabbit GTI: he enters it weekly in NACA (National Automotive Challenge Association) and other competitions. Columbus Car Audio had met his challenge to match or beat an elaborate home system, especially for bass response. The midrange had to be clean and clear; the highs smooth, crisp and without a trace of harshness; and the front stereo image strong, with distinct separation. All this, with only the removable front end showing! He also told Columbus to allow for more power in the future. How they did it all is detailed below. Randy describes the end result by referring to the 128dB average SPL his system delivers, and the many times the system has won.

The winner's dealer: Columbus Car Audio, Columbus, OH

The winner's salesperson: Paul Spence

The winner's installation expert: Greg Fowler

### The winning system:

#### Boston Acoustics speaker systems:

Two 761 two-way component systems, with 6½" woofers concealed in doors, the tweeters in factory dash locations. Two 751 two-way component systems, with 5¼" woofers and tweeters on side shelves. 780LF 8" subwoofers in custom enclosure below rear deck. 710LF 10" subwoofers in same enclosure, facing forward. Each of the four subwoofers has its own subcompartment, isolated from the other drivers.

#### Electronics:

Denon: DCC-8920 removable compact disc player. Audio Control: Two EQL half-octave equalizers. Two 2XS electronic crossovers. Epi-center bass restoration unit (BRU). Nakamichi: Two PA300 II amplifiers (75 watts x 2 each). Two PA400 amplifiers (140 watts each, mono). Front channel: CD player to EQL to PA300 amp driving 761s in doors and dash. Rear channel: CD player to BRU, then to second EQL and first 2XS. Frequencies below 70 Hz to PA400 amp driving 710LFs. Frequencies above 70 Hz to second 2XS; 70-150 Hz to second PA400 driving 780LFs; above 150 Hz to second PA300 amp driving 751s in rear shelves.

### Our thanks to all who participated

Throughout the contest, we saw again and again what it takes to achieve the best in mobile sound performance. And we were pleased to send a pair of T830 tower systems to each winner, and *Car Stereo Review* subscriptions to all entrants.

### You can still be a "winner!"

Visit a Boston Acoustics car audio dealer—who has system expertise and product knowledge. As at home, a mobile sound system can only sound as good as the speakers. Beyond great sound, each speaker must be placed where it sounds and looks the best, durable enough to handle the power and the environment, and look good enough to enhance the car's interior.

Boston Acoustics speakers have all these qualities, whether you simply replace existing factory speakers, or create a completely custom installation. It makes no difference what you drive—subcompact, exotic sports car, luxury sedan, 4X4, van, or boat—if there's a Boston system in it, you're a winner.

T830 tower design home loudspeakers. (\$500 suggested retail value.)

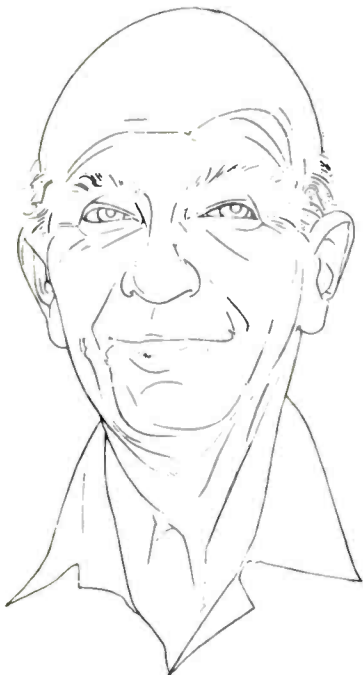


## Boston Acoustics

247 Lynnfield Street, Peabody, MA 01960 (508) 532-2111



by Julian Hirsch



## Waiting for DAT?

**A** FEW years ago, when the general public first heard of the compact disc and its potential for improved sound quality, I was frequently asked if the CD was going to replace the analog record and if I recommended disposing of existing record collections and turntables in anticipation of the Judgment Day for analog discs.

Evidently, the media campaign heralding the digital age in sound was being taken very seriously by a sizable segment of the public. I did my best to assure readers and other people who asked me directly that analog records would not vanish overnight and would probably coexist with CD's for at least ten or fifteen years, if not longer. My advice was to keep record collections and turntables, but I also suggested that enthusiasts buy CD players and limit new acquisitions to digital discs.

Since the first generation of CD players typically sold for about \$1,000, and discs were expensive and covered a limited repertoire, my advice was not always greeted with enthusiasm. Probably no one

(certainly not I) could have foreseen the rapid development of vastly improved CD players that sell for a small fraction of the original prices and the swift acceptance of digital recording by the general public as well as most audiophiles. About five years have now passed, and although I still test an occasional phono cartridge or turntable, the handwriting is on the wall for analog recordings and playback components: Their future will probably be little more than a holding action.

But now we have a similar situation developing with digital audio tape (DAT). Probably because of the record industry's well-publicized opposition to DAT's introduction into the consumer market, many people are now asking if DAT will replace the CD, or at least the analog cassette. Today the question is, "Should I buy a CD player or wait for DAT to arrive?" Evidently the public perception is that the CD will be knocked from its lofty perch by DAT, so why bother with the middleman in the transition from analog disc to DAT?

I have tried to inject a little reason, at least as I see it, into this situation. It does not appear that DAT recorders will ever be as inexpensive as CD players, since a DAT deck is far more mechanically complex and therefore inherently more costly to manufacture. I know that the same could have been (and was) said of the VCR, which in principle is very similar to the DAT recorder, but it is unrealistic to expect good sound to have the mass appeal that television has. Nowadays VCR's are manufactured by the millions, and high volume has made it possible to sell them for a few hundred dollars

apiece. I cannot imagine a market of that size for DAT, nor would I expect the price of a DAT recorder to drop below \$500 at any time in the near future. To be sure, I have been wrong about some other predictions, but that is the way the situation looks to me right now.

Regardless of cost considerations, my feeling about the role of DAT is that there has been a blind rush toward this new technology without much serious thought about its potential benefits. One obvious application would be as a replacement for the cassette recorder. Certainly a DAT deck can do anything that an analog cassette deck can do, and much more, but how many people *need* its special qualities? The majority of people who regularly make cassette recordings do not begin to approach the limitations of that medium. Taping FM broadcasts or dubbing from LP's does not require more than the performance of a moderately priced cassette recorder. It is inconceivable to me that a DAT deck will ever be a more economical choice for *that* task, or that it will ever offer a sonic advantage commensurate with its increased cost. Remember, the noise, distortion, frequency-response aberrations, flutter, ticks, and pops in the source will be *faithfully* recorded on DAT.

But what about copying CD's on digital tape? I can think of few advantages of doing that, principally the smaller size and easier handling of a DAT cassette for automobile use. Certainly dubbing from CD to DAT has no archival value, since the CD will probably outlast the tape many times over.

On the other hand, for a fraction of the current cost of a DAT recorder you can buy a cassette deck capable of recording from CD's with quality that (in a car, at least) would be difficult to distinguish from that of the original disc, especially if you use the dynamic-range compression featured on some CD players now. The full dynamic range of many CD's far exceeds the range that can be heard in a car, and the 20 dB or so of compression afforded by these players will certainly make the result more listenable with no negative side effects.

Incidentally, while DAT decks

### Tested This Month

Harman Kardon hk880  
Vx: AM/FM Receiver  
Synthesis LM210 Speaker  
Sony CDP-C15ESD  
Compact Disc Changer  
Technics SU-V90D  
Integrated Amplifier  
Sonance Model IV Speaker

have several of the convenience features of CD players, especially in respect to program selection, indexing, and cueing, they are much slower. Actions that would take a couple of seconds on a CD player might require 30 seconds or a minute on a DAT machine. It is still much faster and more convenient than an analog cassette recorder, to be sure, but

it can seem glacially slow if you've become used to the near-instantaneous response of a CD player.

While considering costs, think of the price of *blank* DAT tapes, currently higher than some CD recordings! Not much economy there, I would think, if what you want to do is copy compact discs, even if you copy from a borrowed CD. It would

be cheaper to buy another one for yourself than to buy the blank tape (and DAT machine) to make a copy. Of course, the situation will change when and if DAT becomes available through regular channels in this country, but the added complexity of the DAT cassette suggests that it will always be more expensive than a standard cassette.

I can think of only one application where the DAT should excel. If you plan to do live recording and have a pair of professional-quality microphones (which will probably cost more than the DAT machine itself), you should be able to outstrip the performance of even the best analog cassette deck. As with analog tape cassettes, however, editing a DAT is still a bit difficult, and the process would not approach the editing precision of open-reel analog tape, to say nothing of professional digital recorders. I doubt that the DAT market among serious recording enthusiasts will ever be large enough to warrant a substantial price reduction for the machines or the tape.

This brings us to a major hurdle—the cost of the DAT recorder itself. Currently DAT decks are available in Japan for roughly \$2,000 and up. There are a few “gray market” importers in the United States who charge at least that much. And whichever of these sources you patronize, you effectively have little or no warranty or service availability short of returning the unit to Japan.

I realize that the picture I have painted is somewhat negative—not with respect to the performance and potential of the DAT medium but in terms of its present value to the typical consumer or even the serious audiophile. Should you plan to supersede CD's with DAT, or even omit the CD entirely from your plans and wait for DAT recorders to become available in this country? I cannot see any justification for waiting if you enjoy listening to music and appreciate high-quality reproduction. I do not know when DAT recorders will become available in the United States, or what their final price might be, but it seems certain that for some time they will be very expensive for any advantages they might provide. Advanced digital sound is here, now, on compact disc, and it is affordable. □

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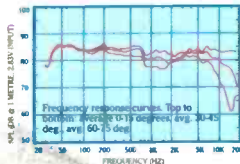
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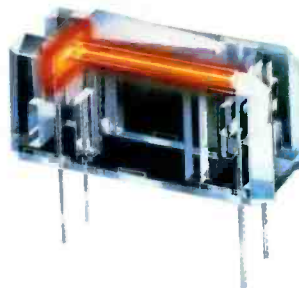
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JOCK LEUNG

## HARMAN KARDON HK880 VXi AM/FM RECEIVER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Harman Kardon hk880 Vxi high-voltage/high-current receiver has a dual-voltage power supply controlled by a rear-apron switch. The high-voltage setting enables it to drive 8-ohm speakers at full power with low distortion. The reduced-voltage setting, for use with lower-impedance loads such as 4-ohm or even 2-ohm speakers, lowers the operating voltage of the output transistors, minimizing heat dissipation with only a minor effect on maximum power output. The hk880 Vxi is rated to deliver 60 watts per channel from 20 to 20,000 Hz into either 8 or 4 ohms with respective distortion levels of 0.08 and 0.3 percent.

Although the hk880 Vxi has a full complement of controls and exceptional flexibility, it presents a clean, uncluttered appearance. Its display window, only 5½ inches wide and ¾ inch high, is compact and subdued, yet complete. The tuner frequency is most prominent, displayed in pale-green fluorescent numerals almost ½ inch high, and the preset channel number (if applicable) is shown about half its size. Other data appear as required in slightly smaller letters, including indicators for the seek tuning mode, the presence of a receivable signal, the selected frequency band (FM1, FM2, AM), stereo reception, and relative signal strength. The two rectangular tun-

ing controls are located to the right of the display window and are impossible to confuse with any other controls.

Each of the six preset buttons can be assigned to two FM frequencies and one AM frequency. The total preset capacity of eighteen channels, though not uncommon among high-end automobile receivers, is one of the greatest we have seen in a home component, and programming the presets is remarkably easy to accomplish.

Six bar knobs in a row across the lower part of the panel control bass, treble, balance, and program-source selection. The VCR/TAPE MONITOR switch feeds the amplifier input from the output of either of two tape decks, which are designated VCR 1 and VCR 2/DAT, although they can be any type of deck (or, indeed, any other line-level audio source). The SOURCE setting of this switch transfers control to the FUNCTION (input) selector, which has positions

# TEST REPORTS

for phono, CD, tuner, and A/V inputs. The A/V position can be used for playing mono or stereo audio signals from a TV set, MTS adaptor, or videodisc player. The RECORD OUT knob has a SOURCE position, which connects the selected listening source to the tape-recording outputs, and positions for dubbing in either direction.

Both the VCR/TAPE MONITOR and

FUNCTION switches have an extra position marked REMOTE, which transfers control of the switch setting to the wireless remote-control unit supplied with the receiver. Red lights above the corresponding receiver knobs show their current settings during remote operation. The remote control also operates preset selection, band changing, tuning in either seek or manual mode, and

volume adjustment. Its up and down volume buttons activate a motor that turns the receiver's large volume-control knob. The remote control also has a power button that switches the receiver between its operating and standby conditions.

The remaining front-panel controls are small pushbuttons that can switch the loudness-compensation circuit, the subsonic filter, mono/stereo mode and auto-seek/manual tuning, the speaker outputs, and the external-processor jacks through which an accessory such as an equalizer or surround processor can be connected into the system.

The rear apron contains the signal input and output jacks, insulated binding posts for the two sets of speaker outputs (which accept stripped wire ends but not banana plugs), and terminals for a supplied wire-loop AM antenna and a 300-ohm or coaxial 75-ohm FM antenna. The detachable AM antenna can be installed on the rear of the receiver but requires 7 inches of rear clearance. One of the two AC outlets is switched. The switch that controls the power-supply voltage is labeled SPEAKER OPERATING MODE (4 or 8 ohms). The hk880 Vxi measures 17 $\frac{3}{8}$  inches wide, 14 $\frac{1}{2}$  inches deep, and 5 $\frac{1}{4}$  inches high, and it weighs 22 pounds. Price: \$749. Harman Kardon, Dept. SR, 240 Crossways Park West, Woodbury, NY 11797.

## Lab Tests

Our audio measurements of the hk880 Vxi were made with the 4-ohm (high-current) setting of the speaker-mode switch, augmented by additional tests of clipping and dynamic power output using the 8-ohm (high-voltage/high-current) setting with 4- and 8-ohm loads. Neither the hour of preconditioning nor the subsequent high-power testing made the receiver's top surface uncomfortably hot.

The 1,000-Hz clipping-level output into loads of 8, 4, and 2 ohms was 57.8, 81, and 109 watts, respectively. The corresponding dynamic power outputs were 76.5, 140, and 200 watts. With the switch set for 8-ohm speakers, the clipping-level power was 81.3 and 113 watts into loads of 8 and 4 ohms, and the dynamic output was 126 and 200

## FEATURES

- Dual-voltage power-supply switch for driving low- or high-impedance speaker loads
- High-current capability
- Low overall negative feedback (20 dB)
- Separate selectors for tape-monitoring source, tape-recording source, and main signal source
- Digital-synthesis AM/FM tuner
- Eighteen station presets (twelve FM, six AM) in three groups
- Auto-seek and manual tuning modes
- External-processor loop selected by front-panel button
- Switchable subsonic filter, loudness compensation, and mono/stereo mode
- Center-detented bass, treble, and balance controls
- Outputs for two sets of speakers selectable from front panel
- Headphone jack
- Inputs for 300- and 75-ohm FM antennas
- Detachable wire-loop AM antenna
- Wireless remote control for source selection, tuning, preset selection, volume (motorized knob), and system power
- Two AC outlets, one switched

## LABORATORY MEASUREMENTS

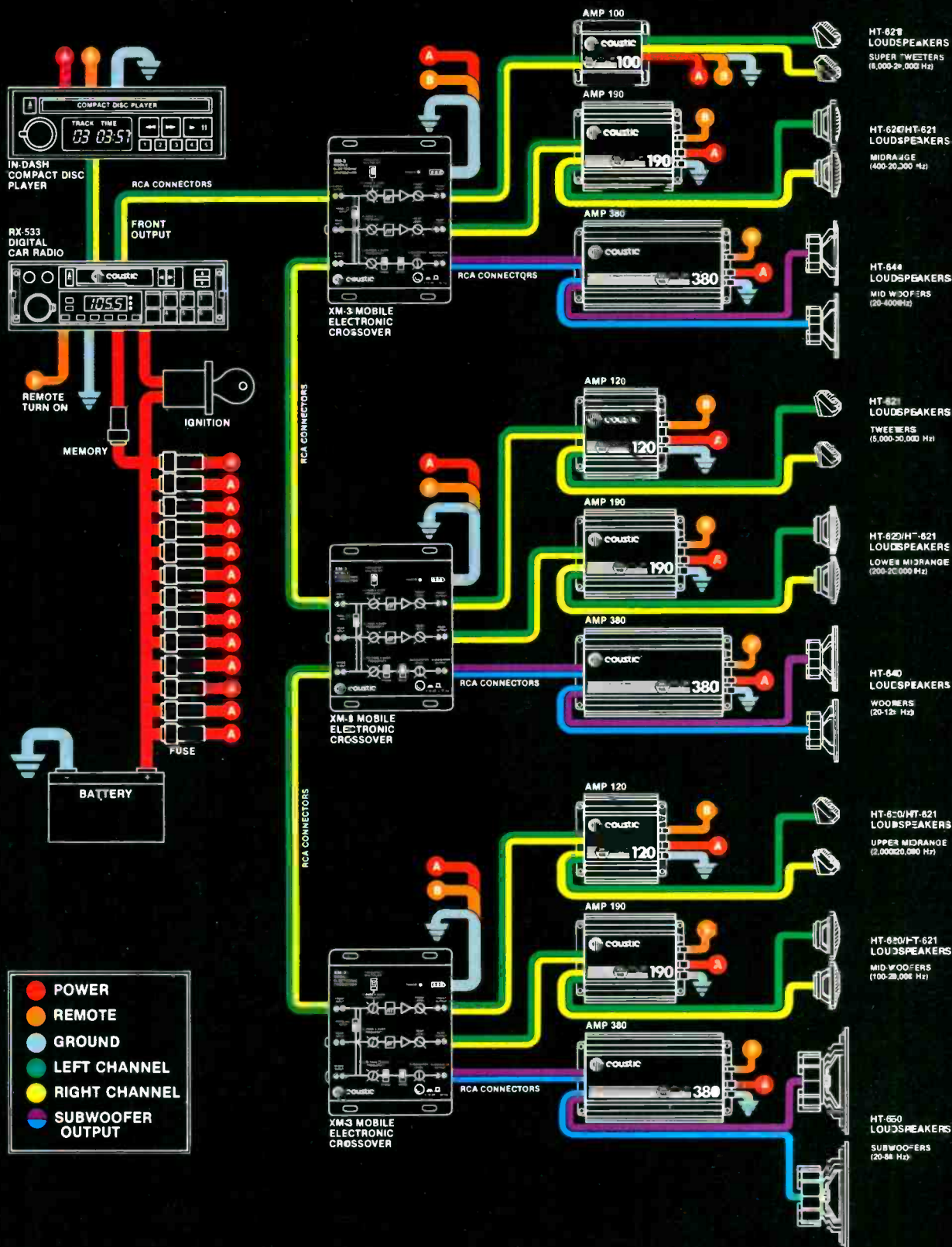
- Tuner Section** (all figures for FM only except frequency response; measurements in microvolts, or  $\mu$ V, referred to 300-ohm input)
  - Usable sensitivity (mono):** 9.5 dBf (1.6  $\mu$ V)
  - 50-dB quieting sensitivity:** mono, 12.5 dBf (2.3  $\mu$ V); stereo, 35.5 dBf (32.8  $\mu$ V)
  - Signal-to-noise ratio at 65 dBf:** mono, 80.5 dB; stereo, 73 dB
  - Harmonic distortion (rHD + noise) at 65 dBf:** mono, 0.082%; stereo, 0.098%
  - Capture ratio at 65 dBf:** 1.4 dB
  - AM rejection at 65 dBf:** 68 dB
  - Image rejection:** 80 dB
  - Selectivity:** alternate-channel, 69 dB; adjacent-channel, 7.5 dB
  - Stereo threshold:** 28 dBf (13.8  $\mu$ V)
  - Pilot-carrier leakage:** 19 kHz, -36 dB; 38 kHz, -38 dB
  - Hum:** -80 dB
  - Stereo channel separation at 100, 1,000, and 10,000 Hz:** 40.5, 40.5, and 39 dB
  - Frequency response:** FM, 30 to 15,000 Hz +0.4, -0.1 dB; AM, 20 to 2,100 Hz +2.7, -6 dB
- Amplifier Section**
  - 1,000-Hz output power at clipping:** 4-ohm setting, 57.8 watts into 8 ohms, 81 watts into 4 ohms, 109 watts into 2 ohms; 8-ohm setting, 81.3 watts into 8 ohms, 113 watts into 4 ohms
  - Clipping headroom** (relative to rated output): 4-ohm setting, 0.16 dB (8 ohms) and 1.3 dB (4 ohms); 8-ohm setting, 1.32 dB (8 ohms) and 2.77 dB (4 ohms)
  - Dynamic power output:** 4-ohm setting, 76.5 watts (8 ohms), 140 watts (4 ohms), and 200 watts (2 ohms); 8-ohm setting, 126 watts (8 ohms) and 200 watts (4 ohms)
  - Dynamic headroom:** 4-ohm setting, 1.05 dB (8 ohms) and 3.7 dB (4 ohms); 8-ohm setting, 3.22 dB (8 ohms) and 5.22 dB (4 ohms)
  - Maximum distortion** (20 to 20,000 Hz into 8 ohms): 0.1% at 60 watts, 0.025% at 10 watts, 0.08% at 1 watt
  - Sensitivity** (for a 1-watt output into 8 ohms): CD, 18.8 mV; phono, 0.275 mV
  - A-weighted noise** (referred to a 1-watt output): CD, -80 dB; phono, -79 dB
  - Phono-input overload:** 120 to 140 mV from 20 to 20,000 Hz
  - Phono-input impedance:** 47,000 ohms in parallel with 107 pF
  - RIAA equalization error:** +0.1, -1.7 dB from 20 to 20,000 Hz
  - Slew factor:** greater than 25



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watts. The slew factor exceeded 25.

The amplifier section clipped softly because of its relatively low overall feedback of 20 dB. The waveform rounded smoothly when the amplifier was overdriven, but the resulting distortion rarely extended beyond the third harmonic (high-feedback amplifiers often generate odd harmonics up to the eleventh harmonic or higher under these conditions).

The input sensitivity for a reference 1-watt output was 18.8 millivolts (mV) through a high-level input and 0.275 mV through the phono input. The respective A-weighted noise levels were -80 and -79 dB.

The bass control's turnover frequency shifted from a maximum of 300 Hz to below 100 Hz as the knob was turned from center. The treble control's response curves were hinged at about 2,000 Hz. The subsonic filter reduced the response by 0.5 dB at 30 Hz and to -3 dB at 10 Hz. The RIAA phono-equalization error was less than 0.1 dB from 20 to 2,000 Hz, reaching -1.7 dB at 20,000 Hz. The loudness compensation boosted both the low and high frequencies moderately, with respective maximum boosts of 9.5 and 5 dB at any volume setting below -30 dB.

The FM tuner of the hk880 Vxi operated with low distortion at any usable signal level in both mono and stereo. The measurements of total harmonic distortion (THD) plus noise consisted principally of the distortion component, which was typically 0.1 percent or less; the noise was substantially lower. Since noise, in the form of hiss, is generally the first symptom of insufficient signal strength in FM reception, the tuner gave a strong subjective impression of high sensitivity.

To our surprise, the demodulated stereo output of the tuner contained high levels of ultrasonic signals from the pilot carrier and the demodulation process. The 19-kHz component was at a -36-dB level, and 38-kHz signals were at -38 dB, yielding an apparent stereo distortion level of about 3 percent! Most tuners designed for home use have filters that remove most of these ultrasonic signals, which can inter-

fere with the operation of Dolby noise-reduction circuits in tape decks. Harmonics of these ultrasonic signal components can also "beat" (interact) with the bias-oscillator frequency of a tape deck, introducing "birdies" and other noises. We had to use an external, steep-cutoff, 15,000-Hz low-pass filter in order to measure the tuner's actual stereo distortion, which was a low 0.1 percent.

The receiver's other FM tuner measurements were good, if not necessarily outstanding. The stereo threshold/muting level of 28 dBf (13.8  $\mu$ V) was close to the 50-dB quieting sensitivity of 35.5 dBf (32.8  $\mu$ V), which had the practical effect of providing quiet, low-distortion reception from almost *any* receivable signal. The FM frequency response was flat within +0.4, -0.1 dB from 30 to 15,000 Hz. Stereo channel separation was flat across most of the audible frequency range, reading between 37.5 and 40.5 dB from 45 to 15,000 Hz. The AM tuner's frequency response rolled off rapidly above 1,000 Hz, reaching -6 dB at only 2,100 Hz.

### Comments

When we first listened to stereo FM broadcasts through the hk800 Vxi, using a simple indoor folded-dipole antenna (our normal practice before making any measurements), the clean and noise-free sound seemed too good to be true. Further investigation showed that the receiver was operating in mono. After we pressed the seek button to change mode, the display indications (and program) left no doubt that the receiver was operating in stereo, but the noise level did not change significantly!

It did not take long to confirm our initial impression that *all* signals—stereo as well as mono—seemed to have markedly lower noise levels than we are accustomed to hearing from receivers (or, for that matter, from many advanced separate FM tuners) using the same indoor antenna system. In addition to low hiss, the garbling distortions of multipath reception were conspicuous by their absence (our indoor antennas are an excellent source of multipath). The key question then was

whether these effects were real or merely the result of a purely personal reaction to an unconventional product design.

Measurements tended to confirm the reality of the quiet, clean FM sound of the hk880 Vxi. The tuner's steep quieting curve and low distortion, though not unique, were considerably better than average. Its operation was free of unwelcome artifacts; there were no noise bursts or other unexpected effects when we operated any of the controls.

What about the rest of the receiver? Playing CD's through several different speaker systems yielded uniformly satisfactory results. Since we do not, in general, find significant audible differences between good amplifiers, it was not possible to establish the degree to which the hk880 Vxi's amplifier section was contributing to its excellent sound. But it was apparent that the hk880 Vxi did not sound like a "60-watt" receiver; it could be played at high levels into inefficient speakers without sounding strained. Its high current-output capability, demonstrated in our 2-ohm measurements, and excellent dynamic headroom are possible explanations for this quality.

Although we would hesitate to use the hk880 Vxi for recording FM broadcasts on a tape deck lacking a good low-pass input filter, because of the ultrasonic components in its tuner output, our only real criticism involves its instruction manual. Besides such lapses as giving an incorrect location for the loudness-control button, the manual is occasionally vague about some of the control functions, which are not necessarily evident from the front-panel markings. A good example is the failure to state clearly that pressing the seek button also switches the tuner between its mono and automatic stereo modes.

Overall, we give high marks to the Harman Kardon hk880 Vxi, a very much above-average receiver housed in an unassuming but practical exterior. Although it sometimes appears that all receivers are pretty much alike, the hk880 Vxi shows that some still stand out from the crowd.

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### SYNTHESIS LM210 SPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**S**YNTHESIS loudspeaker systems are designed and manufactured by a subsidiary of Conrad-Johnson, a well-known manufacturer of high-end amplifiers and preamplifiers. While offering the quality and attention to detail for which Conrad-Johnson electronic components are

noted, the Synthesis products are priced to meet the needs of a somewhat broader market.

The compact and attractively styled Synthesis LM210, which looks like a miniature version of the flagship Synthesis Reference System, is the smallest and least expensive speaker in the line. A two-way

floor-standing system, it is only 10½ inches square and 33½ inches tall. Its 6½-inch polypropylene-cone bass/midrange driver operates in a ported enclosure with twin vents on the front of the cabinet. All internal wiring is soldered (no clip connectors are used). The system crosses over at 1,500 Hz to a 1-inch soft-dome driver, which, like the woofer, is made in Denmark. The crossover network uses high-quality polypropylene capacitors and air-core inductors. The enclosure's venting alignment and the crossover characteristics are designed to give the system a Bessel-type response with linear phase shift through the crossover region. The crossover slope is initially a gradual 6 dB per octave, increasing eventually to 12 dB per octave. The 1,500-Hz crossover frequency was chosen to minimize the audible breakup effects that can occur even in 6-inch drivers between 1,500 and 2,500 Hz.

The cabinet is constructed of ¾-inch Medite (a type of particle board) veneered with oak on all sides and with 1¼-inch solid oak along the edges. All the corners and edges are rounded. The drivers and ports are on the upper section of the front panel, which is angled backward about 20 degrees for time-alignment of the drivers and reduced internal low-frequency standing waves. Internal padding with 1½-inch-thick damping material reduces high-frequency standing waves. A black cloth grille snaps onto the front panel of the speaker.

The speakers are supplied with spikes that can be screwed into threaded inserts in their bases to make a more positive contact with the floor. Each speaker weighs about 32 pounds. Price: \$1,195 per pair. Synthesis, Dept. SR, 2800R Dorr Ave., Fairfax, VA 22031.

#### *Lab Tests*

The averaged room response of the pair of Synthesis LM210 speakers we tested varied only ±3 dB from 150 to 20,000 Hz. The only obvious departures from smoothness were a peak and a dip, each about 4 dB in amplitude, at 250 and 500 Hz, respectively. A room-response measurement at these frequencies (especially the lower one)



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## TEST REPORTS

is subject to boundary effects, so these anomalies in the room response cannot be clearly assigned to the speakers themselves.

Close-miked measurements of the woofer output, however, showed a similar peak and dip. The reason was apparent when we measured the low-frequency output at one of the vents—it had a 15-dB peak at 210 Hz and a minimum at 500 Hz. A similar 15-dB peak appeared at 2,000 Hz, although it did not appear distinctly in the room-response measurement. When the vent and cone outputs were combined (with allowance for the different diameters of the two sources), the resulting bass-response curve was flat within  $\pm 3$  dB from 30 to 1,700 Hz.

The system's composite frequency response was  $\pm 3$  dB from 28 to 20,000 Hz and quite smooth over that range except for a 5-dB depression, a little less than an octave wide, centered at 500 Hz. Our quasi-anechoic response measurements with the IQS FFT analyzer were in general agreement with the swept-frequency measurements. The horizontal dispersion of the tweeter was excellent, and the response curves on-axis and at 45 degrees off-axis diverged only above 10,000 Hz.

Because of the designers' obvious efforts to achieve linear phase shift, we were especially curious to check the LM210's group-delay characteristic. It was a pleasant surprise to find that the group delay—a meas-

ure of phase linearity—was exceptionally uniform. It varied less than  $\pm 0.1$  millisecond from about 700 to 30,000 Hz. Even in the woofer range, where group-delay variations are normally much larger (and where they generally have not been shown to be audible), the delay was constant within  $\pm 12$  milliseconds.

The minimum impedance of the LM210 was 6.7 ohms at 150 Hz, and its maximum was 35 ohms at 55 Hz. The two bass resonances were at 22.5 and 55 Hz. System sensitivity was moderately low, 85.5 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts of pink noise. The bass harmonic-distortion readings were relatively high with a constant input of 4.7 volts (equivalent to a 90-dB SPL output). Distortion readings were in the range of 3 to 6 percent from 200 Hz down to 50 Hz but rose rapidly at lower frequencies. In pulse-power tests, the woofer cone rattled with a 100-Hz input of 300 watts into its 7.5-ohm impedance. At 1,000 and 10,000 Hz, the 12-ohm speaker impedance limited the maximum power our amplifier could deliver. At both frequencies the amplifier clipped, at about 600 watts, before there was any sign of distortion in the speaker's output waveform.

### Comments

From our first hearing of the Synthesis LM210's, it was clear that their sound quality was well above

average. The frequency balance (the proportion of lows, middle, and highs in the output) was excellent, and the speakers always sounded much larger than they really were. Part of the reason for their big sound was their extended sound stage, with a noticeable feeling of depth and height. We placed the speakers about 2 feet from the wall behind them and 4 feet from the side walls, and the width of the stereo stage was also somewhat greater than the actual spacing between the speakers. We did not use their mounting spikes.

After making our measurements, we tried—unsuccessfully—to detect by ear the lower-midrange irregularities that showed up in our tests. Despite their apparently extended low-frequency response, however, the LM210's could not deliver a useful amount of bass below about 50 Hz. Any attempt to put more than a few watts into them at 30 Hz or below produced an audible fluttering of the woofer cone and accompanying rasping sounds. A good low-cut filter in the amplifier would be highly desirable in a system using these speakers.

Because of the exceptional spaciousness of their sound, we were curious to hear how the LM210's would perform with the Carver Sonic Holography system, which requires a very linear phase response for its best effect. The results were all we could have hoped for: The already sizable sound stage the speakers produced expanded to fill the room in a most spectacular way.

We never tired of listening to these speakers, whose sound belied their size, weight, and cost. All high-fidelity sound reproduction is an illusion, of course, but the LM210's managed to create and sustain that illusion more effectively than most speakers we have used. Doubtless this effect was enhanced by their compact dimensions. They really did not make themselves obvious, even in a small room, yet the sound managed to be as large as it should have been, whether we were listening to a solo voice or a full orchestra. The designer of these terrific little speakers obviously knew what he was about.

**Circle 141 on reader service card**



*"That's awful, Joe! Why do you buy violent albums like that?"*



# Remote Possibilities



With the **remote** control of the Dragon II Mobile Security System, the **possibilities** are tremendous.

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- Multi-Sensor System
- Starter Bypass Relay
- Remote Panic Alarm
- Valet Parking Override
- External Antenna Connector
- Automatic Door Lock/Unlock Interface\*
- Courtesy Light Interface\*
- Parking Light Interface\*
- Trunk Release Interface\*

## Dragon I Features:

- Remote Control Transmitter
- Audible Status Signal with Defeat
- LED Status Indicator with Prior Attempt Indication
- Electro-Magnetic Transducer (EMT)† Motion and Shock Sensor
- Multi-Sensor System
- Starter Bypass Relay
- Remote Panic Alarm
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## SONY CDP-C15ESD CD CHANGER

*Julian Hirsch, Hirsch-Houck Laboratories*

**S**ONY'S CDP-C15ESD is an upgraded version of the CDP-C10 CD changer, coupling the earlier model's mechanical design and operating features with extensively redesigned electronic circuitry. The C15ESD uses Sony's standard ten-disc magazines, which load through a large rectangular opening in the front panel. A single disc is played by loading it into a magazine.

The player provides some unusual features, including the ability to memorize up to ninety customized playback sequences from up to twenty-four magazines (or 240 discs). In addition, each disc can be assigned an alphanumeric title of up

to ten characters that can be viewed on the fluorescent display panel.

Each stored sequence or name is assigned to a particular magazine (keyed to the first disc in the magazine) and can be recalled from the player's nonvolatile memory whenever that magazine is loaded. Therefore, once a program sequence has been memorized, the selection and order of discs in the magazine should not be changed unless you want to reprogram them. The memorized program and title data can be deleted one disc at a time.

The C15ESD provides a full complement of operating features, including fast forward and reverse with audible sound and track step-

ping in either direction. Two rows of buttons provide direct access to any disc or numbered track. The player can be operated from an external timer switch, playing a magazine automatically when power is applied.

In addition to the long-term program memories, up to nineteen selections from any or all of the discs in a magazine can be programmed to be played in any order. In the shuffle-play mode, all the tracks on one or more discs are played in random order. Any track, disc, or complete program can be repeated as often as desired. When the repeat mode is selected together with shuffle play, playback can continue indefinitely without repeating the same sequence. The auto-pause mode suspends playback after each selection; play can be resumed by pressing the pause button.

The C15ESD's front panel has a stereo headphone jack whose output level is controlled by an adja-

## TEST REPORTS

cent knob. The knob can also be turned by an internal motor when the supplied wireless remote control is used. The remote unit duplicates virtually every other control on the panel.

The exceptionally complete display window of the C15ESD manages to look surprisingly uncluttered. A row of numbers in red circles corresponds to the disc slots in the magazine; a white line shows under the number for the disc currently loaded into the playing mechanism. A "music calendar" display shows the numbers of tracks on the current disc (up to twenty) or of the selected tracks in a program. As each track is played, its number disappears from the grid. Large numerals show the current disc and track and the elapsed or remaining time in the track. Conventional symbols appear when the machine is in its play or pause modes. Words identify the repeat and programmed

modes of operation and whether only a single disc or all the discs in the magazine are to be played.

Although its operating features are essentially identical to those of the less expensive CDP-C10, the

*The Sony C15ESD's specs are close to the limits of current technology, but in our tests it met or surpassed its specs in almost every case.*

C15ESD is entirely different electronically. Its dual 18-bit digital filters oversample at eight times the normal rate, or 352.8 kHz, producing negligible phase shift and requiring minimal analog filtering to remove ultrasonic components from the audio output. Sony has taken special care to isolate the various parts of the circuitry, including the

use of a dual-winding power transformer and ten separate voltage regulators. In addition to the fixed-level analog output, there is a variable-level analog output, controlled by the headphone volume knob, and two digital outputs (one coaxial and one optical) for use with an external digital-to-analog (D/A) converter. All electrical output jacks, including the phone jack, are gold plated.

The C15ESD measures 18 inches wide, including its wood-grain side panels, 14 inches deep, and 4½ inches high, and it weighs about 15 pounds. It is supplied with one disc magazine. The player carries a three-year warranty covering parts and labor. Price: \$800; additional XA-10B magazines, \$29.95 each. Sony Consumer Products Co., Dept. SR, Sony Dr., Park Ridge, NJ 07656.

### Lab Tests

Although the C15ESD's specifications are close to the limits of current CD player technology, its measurements in our tests met or surpassed the specs in almost every case. The total harmonic distortion (THD) was exceptionally low, ranging from 0.002 percent at 0 dB (the spec is 0.003 percent) to 0.008 percent at -20 dB. The fixed-level output was 2.06 volts, with no measurable difference between channels. The A-weighted signal-to-noise ratio (S/N) was 118 dB on one channel and 115 dB on the other, and the dynamic range was an excellent 97.6 dB (specified as 100 dB).

The channel separation, virtually identical for both channels, ranged from 118 dB at 100 Hz to 88.5 dB at 20,000 Hz. The D/A converters were obviously trimmed to close tolerances in their least significant bits, resulting in a linearity error of 0.2 dB at -80 dB and only 2.5 dB at -100 dB. The phase shift between channels would have been unmeasurable without our newly acquired Audio Precision test system, which indicated less than a 0.3-degree shift up to 10,000 Hz and only 0.75 degree at 20,000 Hz.

The slewing time of the transport was fairly short, though not quite as swift as some of Sony's single-disc CD players. Still, the 1.7 seconds it required to shift from Track 1 to

### FEATURES

- Eight-times-oversampling, 18-bit digital filters
- Loading magazine for up to ten discs, interchangeable with Sony car CD changer magazines
- Memory for names assigned to discs
- Memory for up to ninety different program items (each consisting of one track or one disc) for each magazine
- Programmed play for up to nineteen selections or entire discs in any desired order
- Shuffle play
- Repeat play for a single disc, all discs in the magazine, or a program; can run shuffle play indefinitely with new order each time
- Timer-play mode
- Track skipping (Automatic Music Search) in both directions
- Fast search in both directions with audible sound
- Selectable auto pause between tracks
- Front-panel headphone jack with volume control
- Multicolored fluorescent display of complete operating status
- Fixed- and variable-level analog outputs, coaxial digital output, and optical digital output
- Gold-plated electrical output jacks
- Wireless remote control of all front-panel functions except power, disc-magazine eject, auto-pause, memory clearing, and timer play

### LABORATORY MEASUREMENTS

**Maximum output level:** 2.06 volts  
**Total harmonic distortion at**  
1,000 Hz: 0.0031% referred to 0 dB, 0.0095% referred to -10 dB, 0.029% referred to -20 dB  
**Signal-to-noise ratio (A-weighted):** 115 dB  
**Channel separation:** 118 dB at 100 Hz, 112 dB at 1,000 Hz, 94 dB at 10,000 Hz, 88.5 dB at 20,000 Hz  
**Dynamic range:** 97.6 dB  
**Frequency response:** +0, -0.12 dB from 20 to 20,000 Hz

**Maximum phase shift (from 5,000 to 20,000 Hz):** 0.3 degree at 5,000 Hz, 0.75 degree at 20,000 Hz

**Low-level linearity error (with dither):** -0.2 dB at -80 dB, 1.2 dB at -90 dB, 2.5 dB at -100 dB

**Cueing time:** 1.7 seconds

**Cueing accuracy:** see text

**Impact resistance:** top, C; sides, B

**Defect tracking:** tracked maximum-level defects on Philips TS5A test disc



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## TEST REPORTS

Track 15 of the Philips TS4 test disc is at least on a par with most of today's better CD players. When a disc change was also involved, the time was typically in the range of 8 to 10 seconds.

The C15ESD had no difficulty tracking through the calibrated defects on the Philips TS5A test disc. Surprisingly, however, our test sample was fairly sensitive to impact, especially on its top cover. A light-to-moderate slap caused a brief dropout, with the sound generally resuming from the same place in the recording.

Another surprise was the way in which the player handled the transition between two adjacent tracks with no silent interval between them. Several tracks on the Philips TS4 test disc are recorded this way, and we use them to test the cueing accuracy of CD players. If there is a cueing problem, generally a player will clip the first syllable of Track 18 when making the transition from Track 17.

When it came to this transition, the C15ESD first played a fraction of a second of the second track, then muted for a fraction of a second and resumed play from approximately the point where the initial burst had ended. This effect occurred with all of the similar transitions on the test disc. We suspected that this behavior was peculiar to our test sample, so we ran the same tests on our photo sample, which did not have any problem in this regard. We feel confident that final production models will, in general, be satisfactory.

### Comments

Our test sample of the Sony C15ESD operated flawlessly except for the cueing problem mentioned above. The instruction manual is complete and explicit, which is fortunate in view of the player's flexibility and special features. Like all CD changers we have tested, it emitted audible mechanical noises during a disc change, but it was silent otherwise except for occasional faint clicks of its muting relays between tracks.

Considering the player's operating complexity, the control panel is not overwhelming. The buttons for selecting a disc are somewhat larger and more clearly marked than those for selecting a track. We assume this layout was based on the premise that in operating a changer, a user would normally select the disc first, then the track. If you are used to programming changers, this is a nice touch, but otherwise it could take some getting used to.

The only significant feature missing from the C15ESD is the ability to access indexed sections of a disc. Although relatively few discs are indexed, there are enough of them to make index cueing almost a must for a deluxe, full-featured player.

The Sony C15ESD left nothing to be desired with respect to convenience, versatility, performance, and, of course, sound quality. If you are looking for a superbly designed, state-of-the-art changer, don't miss the Sony C15ESD.

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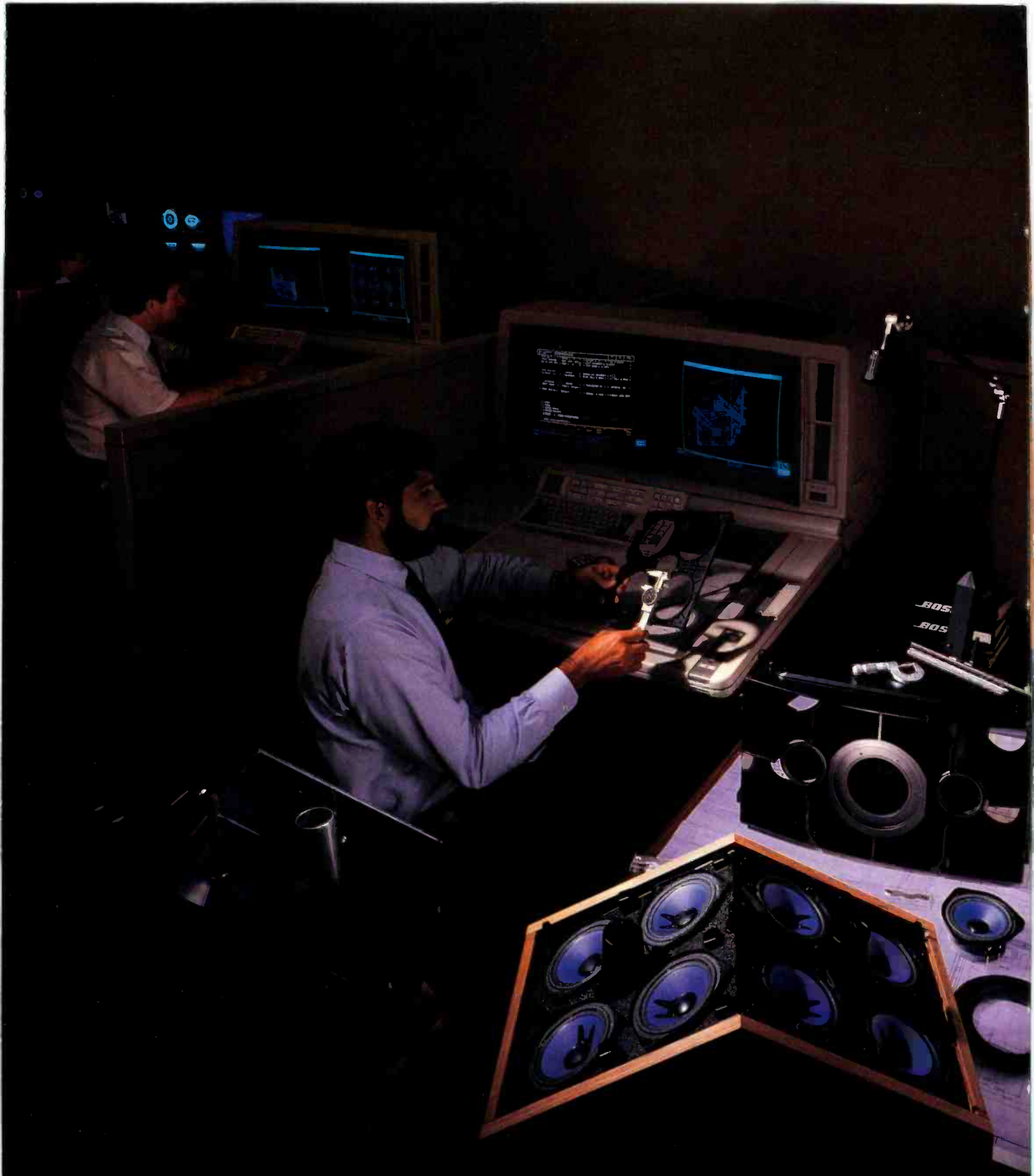
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—Julian Hirsch, *Stereo Review* 1968

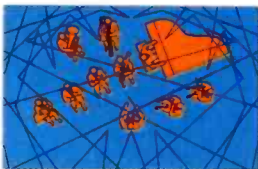
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—Bert Whyte, *Audio* 1969

**"Many people swear by these speakers as the ultimate."**

—*Complete Buyer's Guide to Stereo Hi-Fi Equipment* 1975

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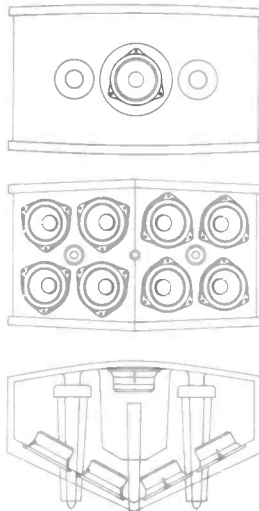
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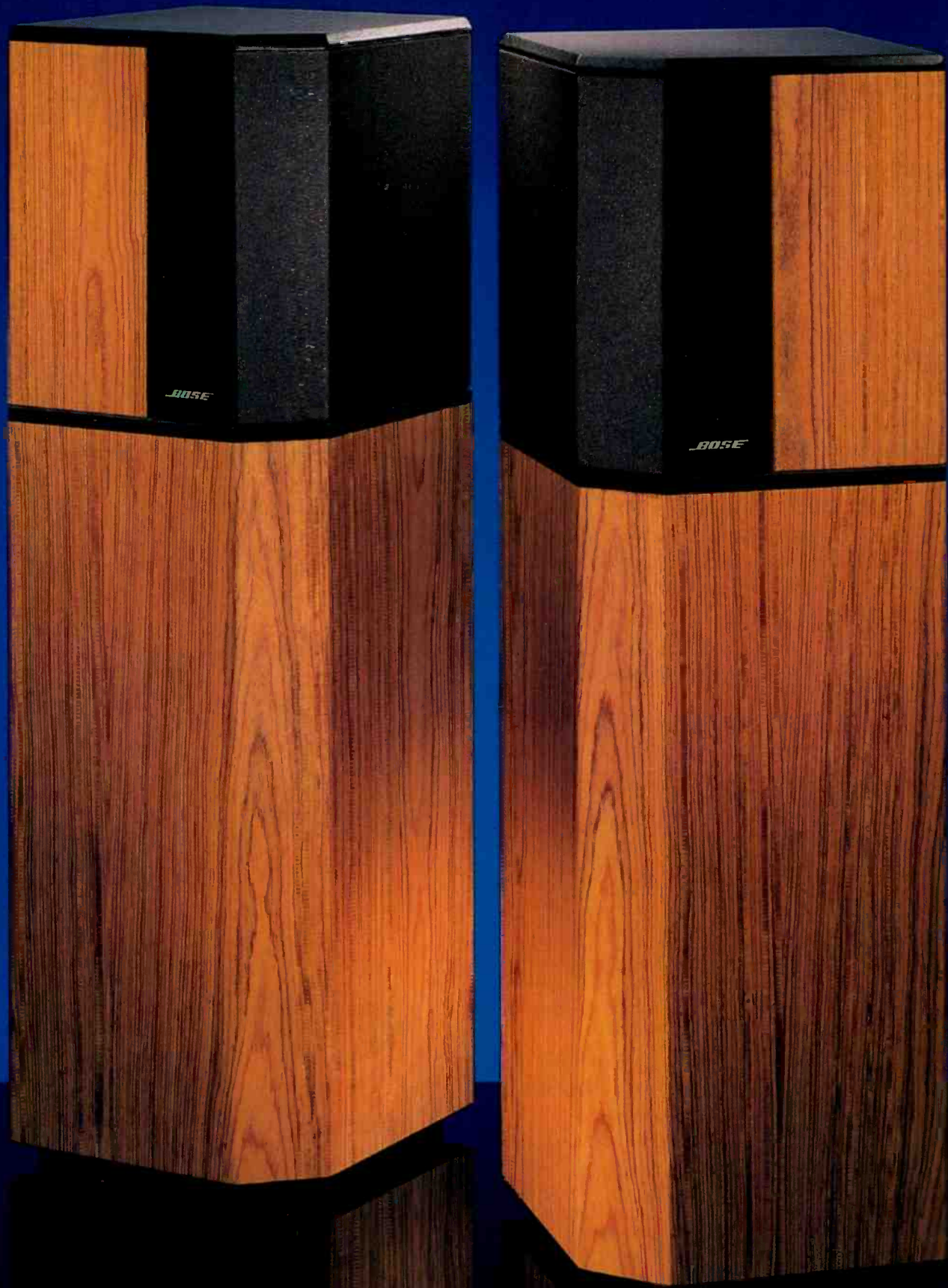
—Daniel Kurmin, *Digital Audio* 1988

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# Introducing the most powerful expression of a new technology:

## The Bose® 10.2™ Series II Direct/Reflecting® system with Acoustimass® speaker technology.

### Inside and out, it's a speaker unlike any other.

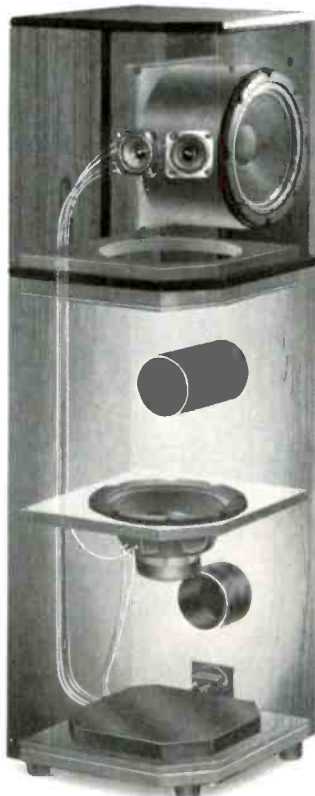
The new Bose 10.2 Series II speaker successfully harnesses a series of audio technologies to take the listener one step closer toward the goal of all speakers: the realism of live music. The 10.2 Series II speaker combines the most powerful version of Acoustimass speaker design available for the home with the proven, critically-acclaimed benefits of a Bose Direct/Reflecting® system. The result: a musical listening system with *no* compromises—one that's at home in any environment.

### Technology in harmony with home aesthetics.

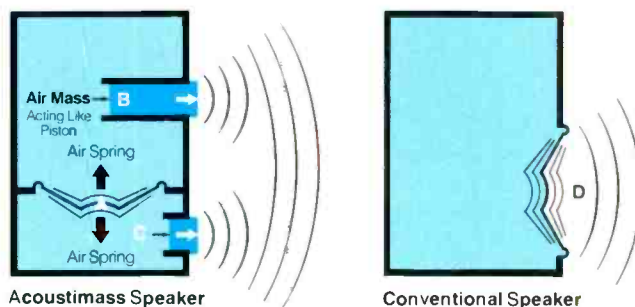
Moreover, the 10.2 Series II system brings lifelike sound into the living environment without overwhelming it. Each speaker's genuine wood veneer, hand-crafted Acoustimass enclosure produces the bass necessary to make even the most demanding music come to life, yet requires just *one square foot* of floor space. The system's Stereo Targeting® arrays precisely shape and control sound, providing listeners—regardless of where they stand or sit—with full, balanced stereo sound from both speakers. Where the speakers look best is also where they *sound* best.

### Greater musical realism with any sound source.

Like all Bose Direct/Reflecting® speakers, the 10.2 Series II system is designed to accurately reproduce much of the clarity and spaciousness of live music. This strict attention to sonic detail is carried through to the lowest notes, where Acoustimass speaker technology provides much of the realism and impact normally experienced *only* in the concert hall. The system's purer sound provides the dynamic range and high power capability required for optimum results with any audio or video system and software—especially digital.



## How an Acoustimass® speaker works.



Improving speaker performance means first reducing distortion. The design of an Acoustimass® speaker *substantially* reduces distortion (see diagrams and graph). The benefits of this patented speaker technology are purer sound and an increase in the dynamic range of bass performance.

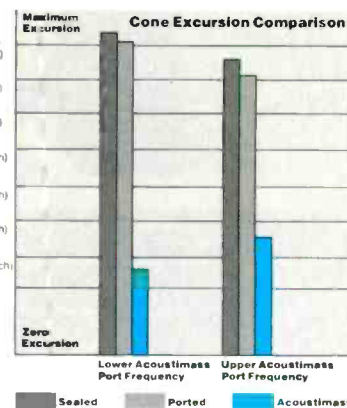
**Left:** An Acoustimass speaker *launches* sound into the room using two masses of air working like pistons (B&C, darker blue), rather than by a surface vibrating directly into the room. *The sound launched into the room by the Acoustimass speaker's air pistons is the purest sound that can be produced by present technology.*

**Right:** A vibrating cone radiating directly into the room (D) produces unfiltered sound.

## Cone Excursion Comparison.

(lower excursion means lower distortion)

**Graph:** The distortion produced by any speaker rises dramatically with its cone motion, or excursion. At port-tuned frequencies, a typical Acoustimass speaker's cone has less than 1/16 the maximum excursion\* of sealed and ported cones. Inside an Acoustimass speaker, the interaction of the air springs with the air masses in the ports produces a very high pressure at the surface of the cone. This greatly reduces the cone's excursion, and therefore reduces distortion. The air springs act with their respective masses to form low-pass filters, removing any small distortion components generated by the cone.



\*based on cone travel measurements at 128 watts RMS.

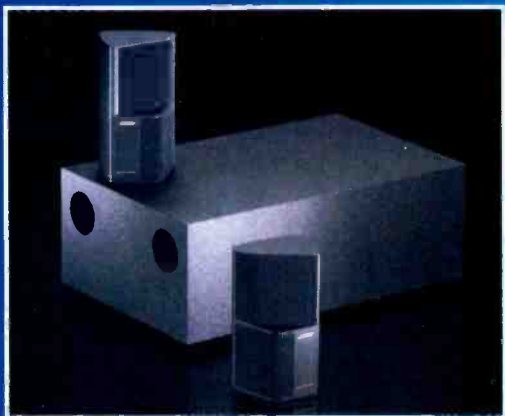
## Judge for yourself.

Ask your authorized Bose dealer to demonstrate the new Bose 10.2 system with Acoustimass speaker technology against any other speaker—and hear the difference for yourself. For more information, call Bose Corporation toll-free at 1-800-444-2673 between 9 a.m. and 5 p.m. EST.

**BOSE**  
Better sound through research.

# “Superb sound and virtual invisibility.”

—Stereophile Review, Julian Hirsch



The Bose® Acoustimass® SE-5 Direct/Reflecting® speaker system.



The Acoustimass® speaker array is a fraction of the size of even the smallest bookshelf speakers.



The system's heart—the Acoustimass® module—can be completely hidden, providing *virtual invisibility*.





# Presenting the newest Bose® Acoustimass® Direct/Reflecting® Speaker System

"In our listening room, side by side with speakers costing three to five times as much, the AM-5 consistently produced the more exciting and listenable sound in A/B tests.

—Stereo Review, Julian Hirsch

"... a sonic standout."

—The New York Times, Hans Fantel

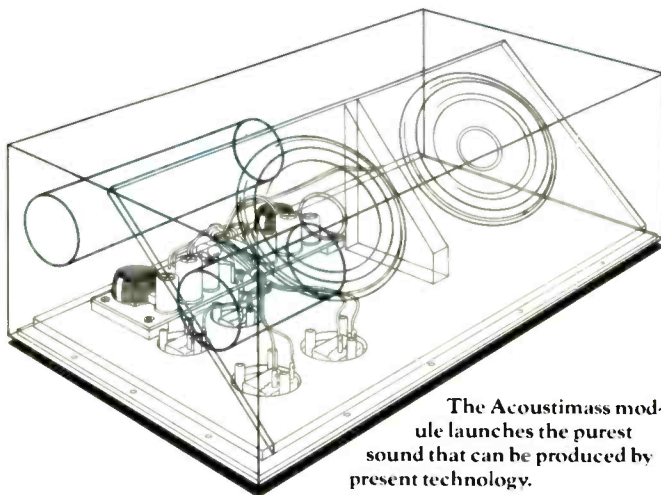
To hear the sound they're talking about, look for an Acoustimass® speaker system.

Take the room-filling, full fidelity sound you expect from full-sized speakers, and imagine it coming from two tiny arrays, each no larger than a quart carton of milk.

This is the Acoustimass speaker listening experience.

"Superb sound . . .

An Acoustimass speaker launches sound into the room by two air masses, producing the purest sound possible from any present-technology speaker design—regardless of size or price. Its purer sound, wider dynamic range and greater output mean that any sound source—music or video—will sound more lifelike, with much of its original realism and impact reproduced right in the listening room.

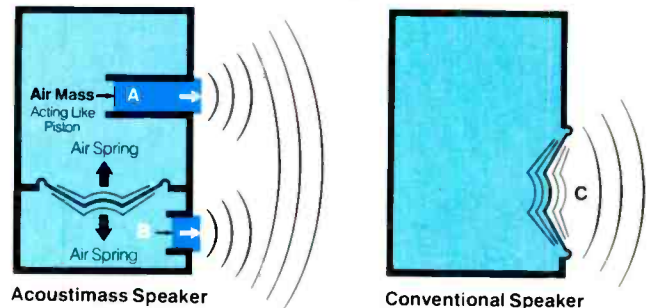


The Acoustimass module launches the purest sound that can be produced by present technology.

"... and virtual invisibility."

An Acoustimass system also leaves more of the listening room to enjoy. The Acoustimass module can be hidden out of sight, behind or under the furniture. All sound appears to come from two tiny arrays a fraction of the size of typical "satellite" speakers. Optional accessories allow them to be unobtrusively mounted in places beyond the reach of ordinary speakers—above the listening area like lighting fixtures, for example. The computer-optimized arrays precisely shape the sound, delivering the life-like spaciousness and clarity of a Bose Direct/Reflecting® speaker—while setting an open, natural stereo image listeners can enjoy throughout the room, regardless of where they sit or stand.

How an Acoustimass® speaker works.



Improving speaker performance means first reducing distortion. The design of an Acoustimass® speaker substantially reduces distortion (see diagrams and graph). The benefits of this patented speaker technology are: purer sound and virtual invisibility, along with higher power handling and wider dynamic range.

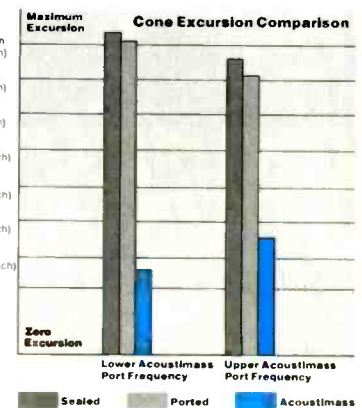
**Left:** An Acoustimass speaker launches sound into the room using two masses of air working like pistons (A&B, darker blue), rather than by a surface vibrating directly into the room. The sound launched into the room by the Acoustimass speaker's air pistons is the purest sound that can be produced by present technology.

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\*based on cone travel measurements at 128 watts input.

A difference you can see and hear.

There are a number of three-piece speakers available. But only Acoustimass speaker technology delivers the full benefits of "superb sound and virtual invisibility." Ask your Bose dealer to give you an A/B demonstration comparing the Acoustimass system to any other speaker on display—and judge for yourself. For more information call toll-free 1-800-444-2673.

# BOSE®

Better sound through research.

© Copyright 1988 Bose Corporation. Covered by patent rights issued and/or pending. Julian Hirsch, Stereo Review © Copyright 1987 The New York Times © Copyright 1987. Reprinted by permission. The product referred to in the reviews, excerpts is the original Bose Acoustimass AM-5 system. \* The product shown is the new Acoustimass SE-5 Direct/Reflecting system.



JOHN LEUNG

## TECHNICS SU-V90D INTEGRATED AMPLIFIER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**ECHNICS calls the SU-V90D a "digital" integrated amplifier because a portion of its circuitry can transform the digital output of a CD player or DAT deck to analog stereo form. These circuits include an 18-bit, quadruple-oversampling digital filter followed by four 16-bit digital-to-analog (D/A) converters that provide the equivalent of 18-bit conversion for all signal levels below  $-12$  dB. Unlike other "floating-bit" conversion systems, the Technics system uses two converters for each channel; they operate separately on the positive and negative portions of the signal waveform.

The quasi-18-bit conversion system used in the SU-V90D shifts the digital signal entering the D/A con-

verters up or down by 2 bits as required to fit the signal into a 16-bit operating range. For high signal levels (between 0 and  $-12$  dB), the converter operates as a conventional 16-bit device. When the signal drops below  $-12$  dB, the converter's range is shifted downward by 2 bits, extending its operation to the 16 bits of data from Bit 3 through Bit 18. Although the signal recorded on a compact disc has only 16 bits of information, the 18-bit digital filter of the SU-V90D creates the additional 2 bits. Whenever the converter range is shifted, a 6-dB attenuator is switched in or out of the analog signal path to compensate for the level shift that would otherwise occur.

The principal advantage claimed

for this mode of operation is an improvement in 16-bit conversion accuracy. Low-level signals are "rounded off" in the output of a digital filter, resulting in a slight error (nonlinearity) in the signal supplied to the D/A converters. The addition of 2 more bits of effective resolution improves the low-level linearity of the system, since the effect of the rounding off is reduced by a factor of 16.

Digital features aside, the Technics SU-V90D is a high-quality amplifier rated to deliver 100 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.003 percent total harmonic distortion (THD). Into 4 ohms, the rating is 125 watts with 0.007 percent distortion.

The input source is selected by a group of flat, short-travel pushbuttons. The analog inputs include phono, CD, tuner, auxiliary, TAPE 1, and TAPE 2/DAT. The phono input is switchable for a moving-magnet (MM) or moving-coil (MC) cartridge via a front-panel button. The coax-



# What happens when a real hi-fi company and a real VCR company builds an A/V receiver.



AA-V435-B  
Remote Controlled  
A/V Receiver



If you would only buy audio from a *real* hi-fi company and video from a *real* video manufacturer, from whom do you buy audio/video? The company that builds both *high-end* audio and video. Akai.

Akai's AA-V435-B A/V Receiver is proof of what happens when audio and video are fully integrated. Its audiophile features include a "clean" 125 watts per channel,\* variable loudness, external processor loop, motor-driven volume control, source direct and much more.

The AA-V435-B's extensive video capabilities include the widest assortment of audio/video inputs and outputs including S-VHS, front panel video, and video RF.

The true beauty of the sleek AA-V435-B is the way it

ties everything together. Featuring the most logical rear panel and internal switching designs, it takes full control of your audio/video system, even remotely with its universal remote (capable of "learning" up to 70 functions from almost any remote audio or video components).

Sight and sound are brought together to create a genuine theatrical experience via the AA-V435-B's Dolby® Surround Decoder, which even includes extra stereo amplifiers for two rear speakers.

The Akai AA-V435-B. Built for people who know that the very best in audio/video only happens when audio and video are treated as one.

\*Continuous average power output, both channels driven. Into 8 ohms, from 20 Hz to 20 kHz at no more than 0.05% THD. Dolby is a trademark of Dolby Laboratories Licensing Corporation.

## AKAI

Where audio and video are one.

## TEST REPORTS

ial and optical digital input jacks on the rear apron of the amplifier are also selected by front-panel buttons.

A REC(ORD) MODE button, used with the regular input selectors, permits any source to be selected for recording independently of the one being heard. An amber LED above each input selector indicates the current choice, and a separate red light shows which source is being recorded.

The SU-V90D also has a Power Amp Direct operating mode that uses separate input jacks on the rear apron. When this mode is selected, the signal passes directly from the input jacks through a buffer amplifier to the power-amplifier input, bypassing most of the preamplifier circuitry and controls. A separate, low-noise volume control used in this mode is driven from the same

shaft and knob as the regular volume control but has separate scale calibrations. The buffer amplifier, like the power amplifier itself, uses Technics's Class AA circuit, a combination of voltage and current amplifiers said to provide exceptional input/output isolation and low distortion.

After conversion to analog form, digital input signals follow a path identical to that in the Power Amp Direct mode. Front-panel indicators show the sampling rate of the source (32, 44.1, or 48 kHz). Three small center-detented knobs operate the bass and treble tone controls (which have a bypass button) and the balance control. Other buttons control the loudness compensation, the 20-dB audio mute, and independent switching for two pairs of speaker outputs.

According to the manufacturer,

the sound quality of the SU-V90D is enhanced by its use of "exotic" materials and components, including a new type of electrolytic capacitor, said to result in lower distortion in its Class AA stages, and oxygen-free copper (OFC) in its internal wiring and the windings of the power transformer. The input and output jacks are gold-plated. Three AC convenience outlets are provided, one of them switched. The speaker outputs are heavy-duty, insulated binding posts that accept only the stripped ends of the speaker wires (cables fitted with lugs or banana plugs cannot be used). The SU-V90D is a rather large amplifier, measuring 17 inches wide, 15 $\frac{3}{8}$  inches deep, and 6 $\frac{1}{4}$  inches high, and it weighs 29 pounds. It is finished in metallic gray with clear gold markings. Price: \$1,100. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

### FEATURES

- Optical and coaxial digital inputs
- Quadruple-oversampling digital filter with 18-bit resolution
- Two D/A converters for each channel, one for positive and one for negative signals; bit-shifting for effective 18-bit resolution
- Front-panel indicators for sampling frequency of digital input source (32, 44.1, or 48 kHz)
- Pushbutton input selection
- Switching for two tape decks
- Independent selection of sources for recording and listening
- Analog inputs for phono, auxiliary, CD, tuner
- Phono input switchable for MM or MC cartridge
- Power Amp Direct input mode to bypass all control circuits for lowest noise
- Oxygen-free copper in signal wiring and power-transformer windings
- Audio mute to reduce level 20 dB
- Tone-defeat switch
- Switchable loudness compensation
- Drives one or two sets of speakers
- Heavy-duty speaker binding posts accept large-gauge wire

### LABORATORY MEASUREMENTS

**Output power at clipping** (1,000 Hz): 128 watts into 8 ohms, 175 watts into 4 ohms, 180 watts into 2 ohms

**Clipping headroom** (relative to rated output): 1.07 dB at 8 ohms, 1.46 dB at 4 ohms

**Dynamic power output:** 150 watts into 8 ohms, 242 watts into 4 ohms, 180 watts into 2 ohms

**Dynamic headroom:** 1.76 dB into 8 ohms, 2.86 dB into 4 ohms

**Harmonic distortion** (THD + noise at 1,000 Hz into 8 ohms): 1 watt, 0.0034%; 10 watts, 0.0034%; 100 watts, 0.0185%

**Maximum distortion** (20 to 20,000 Hz into 8 ohms): 0.067% at 100 watts (20,000 Hz)

**Sensitivity** (for a 1-watt output into 8 ohms): auxiliary, 46 mV; MM phono, 0.25 mV; MC phono, 0.0185 mV

**Phono-input overload** (MM): 130 to 200 mV

**A-weighted noise** (referred to a 1-watt output): auxiliary, -92 dB; MM phono, -84.5 dB; MC phono, -71.5 dB

**Phono-input impedance** (MM): 46,000 ohms at 1,000 Hz

**RIAA equalization error:** +0.15 dB, -0.1 dB from 20 to 20,000 Hz

**Tone-control range:** 100 Hz,  $\pm 9$  dB; 10,000 Hz,  $\pm 8$  dB

**Frequency response:** -0.1 dB at 20 Hz, -0.5 dB at 20,000 Hz

### Lab Tests

The top of the SU-V90D became very hot during its 1-hour preconditioning period, but it ran quite cool during normal operation. Except as noted, all measurements were made in its analog mode. With both channels driven at 1,000 Hz into 8-ohm loads, the output clipped at 128 watts; into 4 ohms, the output at clipping was 175 watts. Although the amplifier is not rated to drive 2-ohm loads, with only one channel driven into 2 ohms the output clipped at 180 watts. In dynamic power measurements, the maximum output was 150 watts into 8 ohms, 242 watts into 4 ohms, and 180 watts into 2 ohms.

Driving 8-ohm loads at 1,000 Hz, the amplifier's distortion (THD + noise) was between 0.0034 and 0.01 percent for outputs from 1 to 50 watts, reaching a maximum of 0.0185 percent at 100 watts. With 4-ohm loads, the distortion at outputs up to 40 watts was about the same, reaching 0.02 percent at 100 watts. The 2-ohm distortion readings were much the same, although they reached a peak of 0.02 percent at 170 watts, just before clipping occurred. The amplifier's slew factor exceeded 25, and it was stable with reactive simulated speaker loads.

The frequency response, which

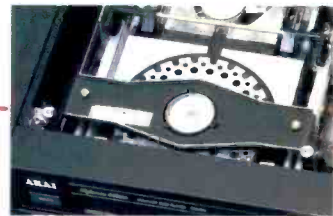


# The road to perfection has no shortcuts.

Most CD marketing has turned into a numbers and gimmicks race, with many manufacturers suggesting that one single feature leads to superior sound. Instead of looking for shortcuts, the Akai engineers have focused on *everything* connected with reading and processing the digital signal accurately.



This laser transport reflects Akai's 35 years of building tape transports.



Akai's disc clamber: because more stable rotation means fewer playback errors.

The result? The CD-93-B Reference Master CD Player. The moment a CD is inserted, disc rotation is stabilized by an oversized, die-cast disc clamber. Its die-cast anti-resonant disc tray further reduces unwanted vibrations, as do the player's entire aluminum honeycomb monocoque chassis and high-frequency absorbing ceramic pedestals.

The CD-93-B's die-cast 3-beam laser pick-up with "A" servo system further ensures that the disc is read with unsurpassed accuracy. By effectively minimizing playback errors, Akai engineers have reduced the distortion generated by error concealment.

The CD-93-B's excellence in design naturally extends to its circuitry, which features completely separate and shielded digital and analog sections. Independent and isolated power transformers prevent digital noise from interfering with the analog signal. Six stages of internal fiber optic coupling as

well as optical outputs ensure that no signal degradation occurs. For optimum decoding of the digital signal, the CD-93-B uses an 18-bit digital filter, dual glitchless D/A converters and a highly linear 3rd order Butterworth GIC analog filter.

Akai's extra attention to engineering, design and construction quality is proven out by *Stereo Review's* recent lab tests.\* The CD-93-B had one of the flattest frequency responses and the best low-level linearity they ever measured.

Let the other manufacturers search for the one thing that will make their players sound better. At Akai, that one thing is everything.

\*Stereo Review, August, 1988



With the Honeycomb Monocoque chassis, Akai puts digital audio on the firmest foundation.

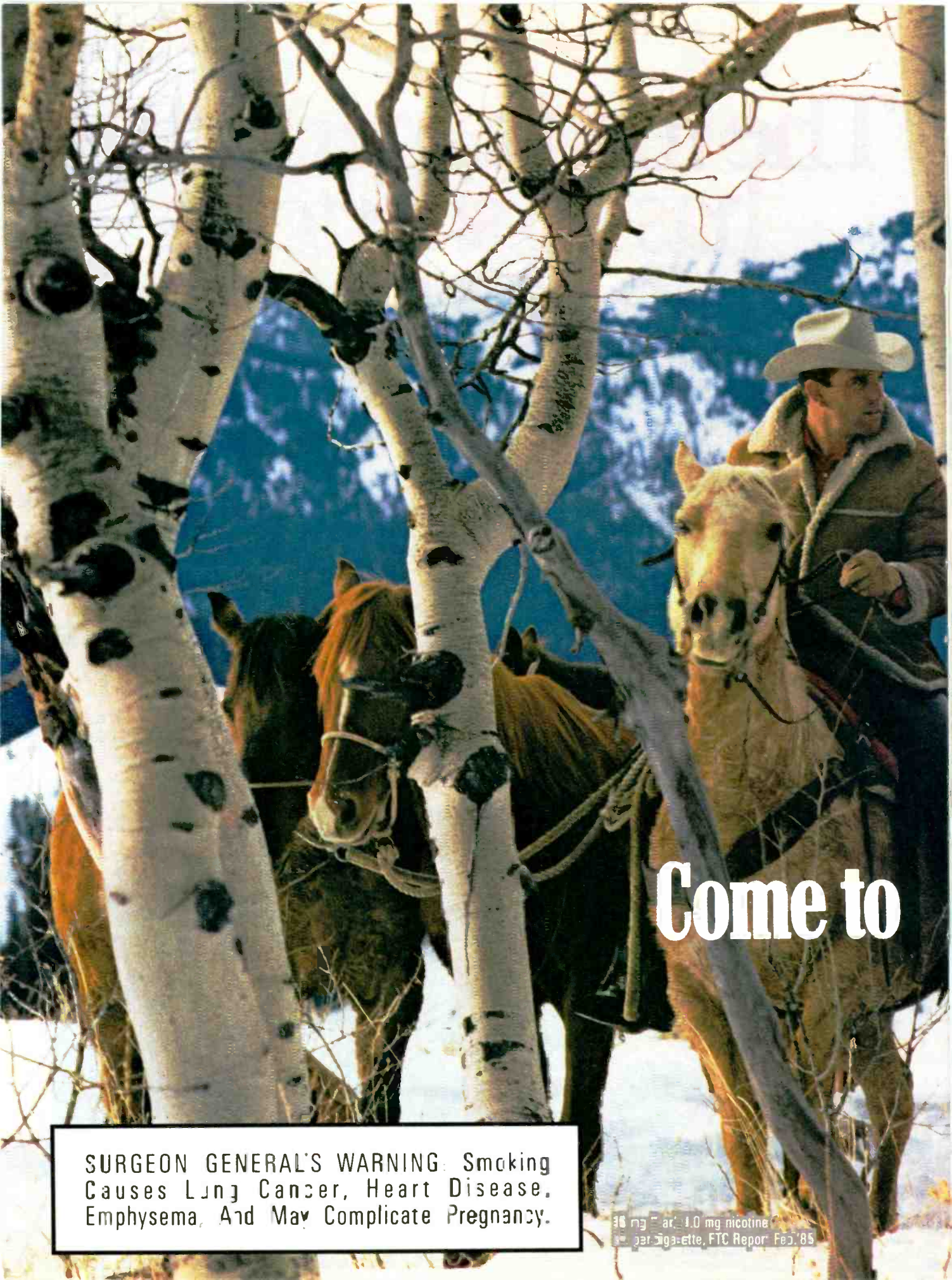


CD-93-B Reference Master CD Player

## AKAI

Where audio and video are one.





Come to

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

36 mg "tar," 1.0 mg nicotine  
per cigarette, FTC Report Feb. '85



A cowboy wearing a white hat and a tan jacket is riding a dark horse through a snowy landscape. The background features birch trees and a blue sky. The scene is set in a winter environment with snow on the ground and trees.

# Marlboro Country.



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



## TEST REPORTS

was down 0.1 dB at 20 Hz and 0.5 dB at 20,000 Hz, was identical through both the Power Amp Direct and the normal inputs. The bass tone control had a sliding turnover frequency from 500 Hz to below 100 Hz, and the treble curves were hinged at 3,000 Hz. The maximum control range was approximately  $\pm 10$  dB.

*The Technics SU-V90D's control flexibility is superb. The smoothness of its controls was outstanding, and its listening quality was on a par with its measured performance.*

The loudness-compensation circuit boosted only the low frequencies, with a +3-dB point at about 300 Hz. RIAA phono equalization was accurate within 0.25 dB overall from 20 to 20,000 Hz.

To check the performance of the SU-V90D's internal digital circuitry, we used a Denon DCD-1500 II CD player and the CBS CD-1 test disc. First, we measured the frequency response of the CD player through its own D/A converters and filters; it was flat within +0.15, -0.09 dB from 20 to 20,000 Hz. We then connected the coaxial digital output of the DCD-1500 II to the input of the SU-V90D and repeated the measurement at the amplifier's tape-recording outputs. A minute change in the shape of the curve at high frequencies was the only detectable difference; the overall variation was +0.09, -0.2 dB from 20 to 20,000 Hz. As far as frequency response is concerned, the Technics and Denon digital circuits were essentially equivalent.

A more distinct difference was detectable in low-level linearity measurements, however. Down to -70 dB, the Denon player and Technics amp had identical, and essentially perfectly linear, responses. In the left channel, they remained identical all the way down to the -90-dB limit of the measurement. In the right channel, however, the output from the Denon was about 2 dB high at -80 dB and 5 dB high at

-90 dB. Through the Technics circuits, a 1-dB error was barely visible at -90 dB.

### Comments

The Technics SU-V90D is an absolutely first-rate amplifier. Its control flexibility is superb, although some of its switching procedures are rather unconventional. Careful study of the complete, well-written manual should clear up any questions, however. The mechanical and electrical smoothness of the push-buttons and volume control was outstanding. No electrical transients or other unwelcome effects were in evidence at any time during our use of the amplifier, and its listening quality was on a par with its measured performance.

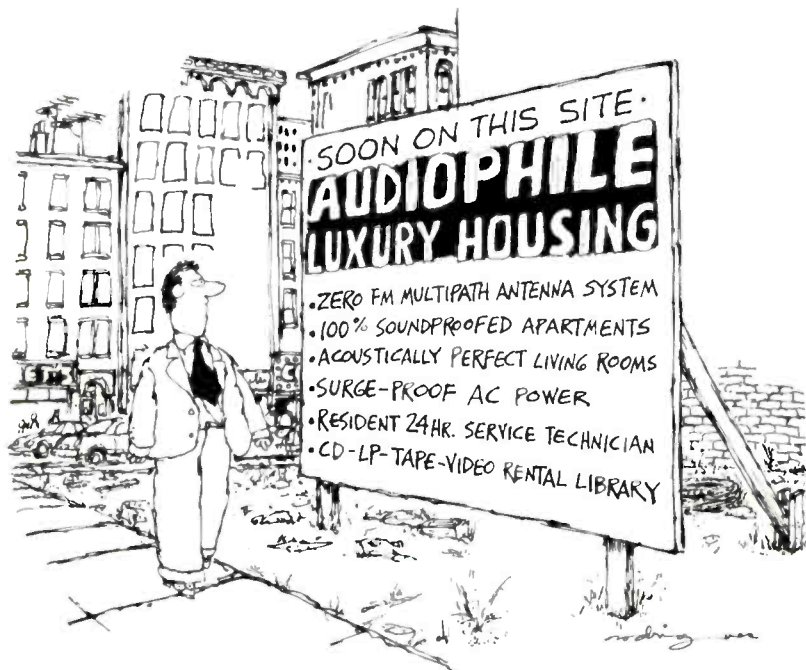
We found no differences—either measurable or audible—between normal and Power Amp Direct operation. Although this was the first amplifier with built-in D/A converters we have used whose digital circuits measured as well as (or even slightly better than) those of a good CD player, extensive A/B playback comparisons using the analog and digital output from several CD players failed to show the slightest audible difference between them.

Our comparisons were somewhat complicated by the fact that the playback level shifted slightly (a small fraction of a decibel) when we switched between the amplifier's analog and digital modes, but we are confident that any changes that might have been detected were truly insignificant.

Despite the claims often made for the supposed audible benefits of exotic materials such as oxygen-free copper wiring, we have never substantiated them. Likewise, the audibility with musical program material of the extension of D/A resolution from 16 bits to 18 bits (or more) has not been demonstrated. These design features do not appear to reduce the player's performance in the least, however, and when they are used in an already high-quality product such as the Technics SU-V90D they probably have little effect on its price.

Our impression of the Technics SU-V90D is emphatically positive. It is one of the most solidly constructed and smoothest-handling components we have used—the volume control's action was almost sensual—and it sounded every bit as good as it looked and felt.

**Circle 143 on reader service card**





New from **BOSE**

# Home quality stereo that doesn't have to stay home.



Today, a good stereo's place isn't just in the home. Simply plug the new Bose RoomMate® II portable powered speaker system into a portable CD player and you'll have a complete, compact, room-filling stereo system you can play anywhere—at home, work or play.

The RoomMate II system brings out the best in CD players and personal stereos. Since it has a built-in amplifier, you don't need a rack-full of electronic equipment for big component sound.

We've taken some of the best features from our top-of-the-line home and professional systems—such as active equalization for lifelike sound, a hybrid 901/402 HVC driver for performance and durability, and aerodynamically tuned ports for strong, powerful bass.

The result? A powered speaker

that rivals many home systems.

Better yet, with our new powercase, the RoomMate II system runs for up to 12 hours at full volume and recharges overnight. If music for the road is your desire, simply plug in the Car Adapter.

The RoomMate II system is as light and easy to tote as a camera outfit. Our new powercase is

designed to hold a portable CD player, power pack and discs. For maximum portability,



enjoy the convenient "play in the bag" feature.

To make mounting a snap, we've designed high-quality Mounting Arms and Wall Brackets.

Audition the Bose RoomMate II system at your authorized dealer soon. See and hear for yourself that high fidelity sound no longer has to stay home.

**Act Now:  
Get a \$50.00  
rebate on the  
purchase of any  
portable CD player,  
with purchase of a  
RoomMate II system.\***

\* Buy a new RoomMate II system and any portable CD player, between December 1, 1988 and February 28, 1989, and you'll qualify for a \$50.00 rebate from Bose. Simply send in your proofs of purchase

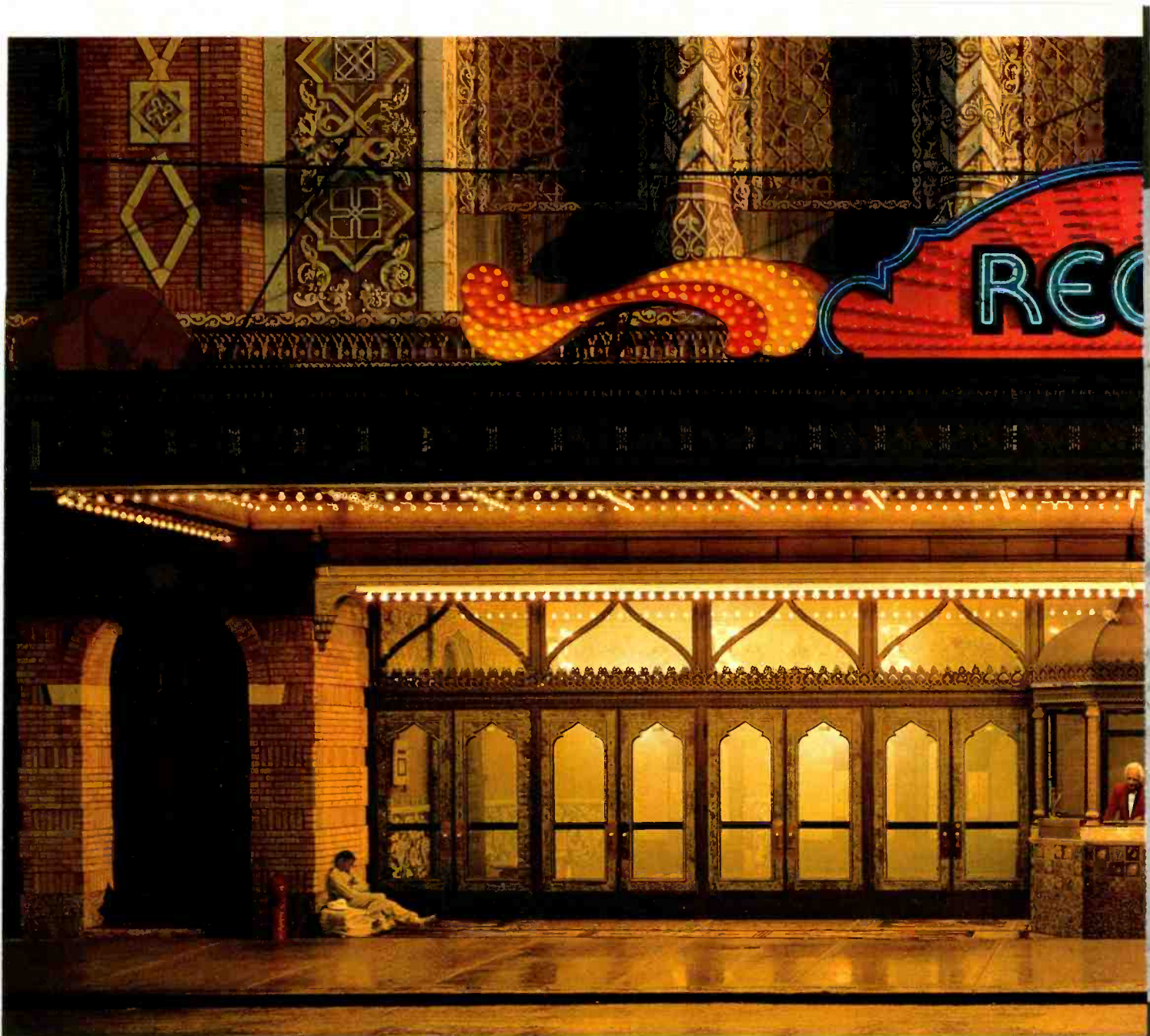


for both the RoomMate II system and your portable CD player, together with the speaker warranty card to: Bose CD Rebate Offer, Dept. 38, Bose Corporation, The Mountain, Framingham, MA 01701-9168. Allow 4-6 weeks for delivery. For further information call 1-800-444-2673.

**BOSE**

**Roommate II**

POWERED SPEAKER SYSTEM



In The Best Theaters, The Sound Is As Big As





## The Picture.

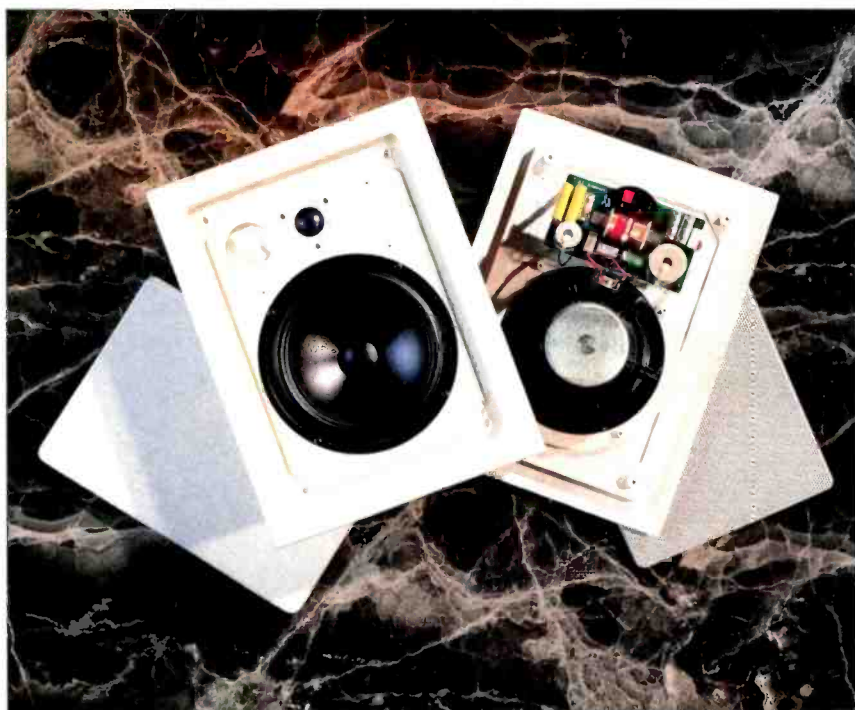
From the people who brought you big screen television comes the sound to go with it. Introducing Mitsubishi Home Theater Systems. For the Mitsubishi dealer nearest you, call (800) 556-1234, ext. 145. In California, (800) 441-2345, ext. 145. © 1988 Mitsubishi Electric Sales America, Inc.



 **MITSUBISHI**<sup>®</sup>

CIRCLE NO. 22 ON READER SERVICE CARD





### SONANCE MODEL IV SPEAKER

*Julian Hirsch, Hirsch-Houck Laboratories*

**L**OUDSPEAKERS designed for permanent installation in a room's walls used to be limited to providing background music in commercial locations such as restaurants and stores, but home hi-fi versions have appeared over the past few years and are now available from several reputable speaker manufacturers.

Sonance, a division of Dana Innovations, evolved from a company specializing in the design and installation of custom audio systems, and it has applied established hi-fi standards to the design of its line of in-wall speakers. According to Sonance, it developed the first high-fidelity in-wall speaker system back in 1981. The company currently manufactures several models, including a subwoofer, and markets a complete line of accessory products such as mounting hardware, brackets, volume controls, and switches.

The Sonance Model IV, which heads the Sonance speaker lineup, is a two-way system using imported Scandinavian drivers. The 8½-inch

woofer crosses over to a 1-inch polycarbonate-dome tweeter at 2,500 Hz. The drivers, together with their high-quality crossover network, are mounted on a rigid, molded white-plastic frame that is ribbed for strength. The entire speaker unit, only 3¾ inches deep, is designed to be installed between wall studs spaced on standard 16-inch centers. Mounting brackets are available for installation in new construction or in existing walls.

Two types of grilles are available, cloth or perforated metal. The cloth grille, which completely hides the drivers from view, has two layers of double-knit fabric. The metal grille comes with a removable foam insert to conceal the drivers, which are otherwise visible through the grille perforations. The metal grille and the plastic rim of the speaker mounting can be customized by painting, and the fabric grille can be replaced by another fabric of the user's choice. On the front of the speakerboard is a three-position tweeter-level switch that can pro-

vide some compensation for the absorption of high frequencies in the cloth grille or in the foam insert of the metal grille.

The low-frequency performance of a speaker is a function of its enclosure volume, and it might seem that a wall installation in an undefined volume could negate much of the original design of a speaker like the Sonance Model IV. Given the standard 8-foot home ceiling height and typical wall construction, however, the volume of a wall enclosure would be about 2½ cubic feet. According to Sonance, the Model IV speakers are designed to be operated in (and are specified for) an enclosure of 2 to 3 cubic feet, assuming there is some degree of damping from internal insulation and that the enclosure is bounded by drywall material—in other words, in a typical home wall. Price: \$650 a pair, including installation brackets. Extra grilles are available for \$60 a pair. Sonance, Dept. SR, 32992 Calle Perfecto, San Juan Capistrano, CA 92675.

#### *Lab Tests*

To simplify testing the Sonance Model IV speakers, the manufacturer supplied them to us in simulated wall sections measuring 79 inches high, 32 inches wide, and 4 inches deep. To help them withstand shipping from California to New York, they were made of ½-inch plywood instead of wallboard. One speaker was mounted in each panel, equidistant from the sides and about 5 feet above the floor. We placed the panels with the speaker centers 78 inches apart and at least 2 feet from any of our room walls.

Although the tweeters of the Sonance speakers were mounted considerably higher than those of any conventional free-standing speaker, and certainly not optimally located by conventional standards, they would probably be at least as high in a typical home installation. The tweeter-level controls were set at their middle positions for measurements and our initial listening tests. We used the perforated-metal grilles without their foam inserts for measurements; we installed the foam later for extended listening tests.

The averaged room response of



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SR 2



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## TEST REPORTS

the two speakers varied only  $\pm 2.5$  dB from 500 to 20,000 Hz. In fact, only a 5-dB peak at 300 Hz prevented the  $\pm 2.5$ -dB variation from applying between 75 and 20,000 Hz. Although traces of that peak showed up in some other tests, it was not present in our quasi-anechoic FFT response measurements. It appears likely that the peak was a result of the placement of a single system on a large, freestanding surface and probably would not occur in a normal room-wall installation.

The close-miked woofer response was excellent, varying  $\pm 2.5$  dB overall from 57 to 1,200 Hz. It spliced readily to the room curve, producing a composite frequency response of  $+1.5$ ,  $-3$  dB from 47 to 20,000 Hz (referred to the 1,000-Hz level). Between 1,700 and 3,000 Hz, the tweeter-level switch changed the tweeter's output by  $\pm 1.5$  dB relative to its output at the middle setting. Between 3,000 and 4,000 Hz the control had no effect, and over most of the frequency range above 6,000 Hz the control range was  $\pm 3$  dB.

The system's impedance was a minimum of 6.5 ohms at 150 Hz (the rating is 8 ohms, with a 6-ohm minimum), and we measured the maximum of 20 ohms at the bass resonance of 45 Hz. Sensitivity was relatively high, 91 dB sound-pressure level (SPL) at 1 meter with a pink-noise input of 2.83 volts. The woofer distortion, measured with a drive level of 2.5 volts, equivalent to a 90-dB SPL, was impressively low, less than 1 percent from 100 Hz to about 45 Hz and increasing to 1.3 percent at 40 Hz and 3.6 percent at 25 Hz. In pulse power tests, our amplifier clipped before the speaker was driven into obvious (audible) nonlinearity, at inputs ranging from 920 watts at 100 Hz to 600 watts at 10,000 Hz.

The horizontal directivity of the tweeter was good, with little divergence between the measured response on-axis and at 45 degrees off-axis until the frequency exceeded 10,000 Hz. The system's group delay was  $\pm 0.2$  millisecond (ms) from about 1,000 to 20,000 Hz (essentially the tweeter range), and the woofer delay was  $\pm 1$  ms from 100 to 2,200 Hz. Both sets of measurements indicate good phase lin-

earity over the system's operating frequency range.

### Comments

The measured performance of the Sonance Model IV shows it to be a very good speaker. Our instruments found no obvious flaws or deficiencies in its acoustic or electrical characteristics. Quite the contrary, it was notably free of such common speaker aberrations as excessive middle- and upper-bass output, excessive bass distortion, midrange irregularity, and beaming highs. If we were to judge a speaker solely by its measurements, this one would rank as a top-quality two-way system.

Of course, that is not the way we (or anyone else) would judge a speaker. Measurements are part of the story, and an important part, but only listening can disclose the true worth of a speaker—and that judgment, being subjective, is likely to be unique to each listener.

I have heard several in-wall speakers, though not in the environment for which they were designed, and by and large I have found them to be pleasant sounding and inoffensive. No doubt some are suitable only for generating "acoustic wallpaper," but thankfully I have so far been spared undue exposure to that variety.

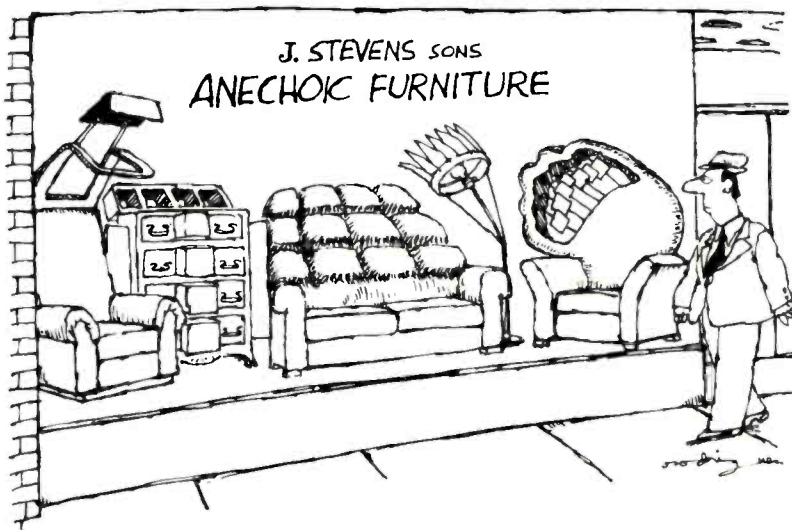
The Sonance Model IV is clearly a high-fidelity speaker system transplanted to a specialized acoustic en-

vironment, not just a couple of drivers mounted for insertion in a wall. It sounded as smooth and uncolored as its frequency-response measurements would suggest. Even in our admittedly artificial listening setup, the speakers never sounded out of place, and it took little imagination to appreciate how satisfying they could be in a proper wall installation.

For a number of reasons, these speakers (or others of the same genre) will not appeal to dyed-in-the-wool audiophiles. If precise imaging is important to you, for instance, there is little chance you will be satisfied by wall-mounted speakers, which lack the rear-wall reflections that can impart a sense of depth to the sound. Also, the near invisibility of such speakers eliminates the pleasure of displaying a pair of large—and expensive—cabinets to your friends.

But that same quality of invisibility is perhaps the strongest attraction of in-wall speakers to people who want good sound (not merely background music) but do not want to compromise room decor to achieve it. The Sonance Model IV accommodates both these requirements, which usually are mutually exclusive, in a way that will not offend any reasonable person's listening sensibilities nor do irreparable damage to his finances.

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Julian Hirsch, *Stereo Review*, 6/88

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LPI  
MODE  
LOAD IMPEDANCE  
OUT IN  
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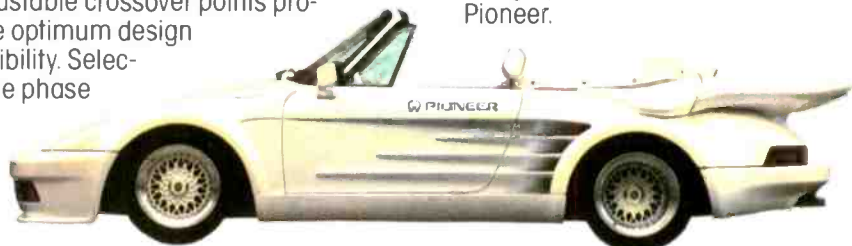
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## LISTENING TESTS

# 6 TOP CD PLAYERS: CAN YOU HEAR THE DIFFERENCE?

Scientifically designed tests  
using state-of-the-art  
equipment  
and expert listeners  
provide some answers.



BY KEN C. POHLMANN

**I**f there was a contest to find the most schizophrenic technology, audio technology would certainly be among the strongest contenders. On one hand, audio is a hardware-intensive technology, driven by computation and measurement; it is precisely the formidable challenge involved in accurately recording and reproducing audio signals that continues to attract the top engineers. On the other hand, audio is a subjective, intensely personal experience because it is only in the ear of the listener that sound is perceived, that music is enjoyed; it is the apparently fathomless depth of audio perception that attracts an audiophile. Is audio a science, then, or an art? That is a hundred-year-old question that is growing more and more complex.

At the center of the debate lies the question of the diminishing audibility of differences between







## LISTENING TESTS



audio components. Any listener must admit that the degree of audibility varies with the type of component. For example, it may be virtually impossible to find two pairs of loudspeakers that sound the same. Similarly, the differences among microphones are well known; indeed, microphones are selected by recording engineers according to their coloration properties, in much the same way that an artist selects paints from a palette. With other audio components, however, such as phono cartridges, turntables, and amplifiers, the differences grow smaller. The schizophrenia soon becomes apparent: Engineers, measurements in hand, may claim that any differences are inaudible, but audiophiles, golden ears pricked up, still claim they can hear differences.

When compact disc players were introduced in 1982, some manufacturers, probably on the advice of their engineering staffs, proclaimed pure and perfect sound forever. Clearly, with the advent of digital technology all sources would be reproduced perfectly, hence identically. It soon became apparent, however, that the sound was neither pure, perfect, nor identical. In the minds of some listeners, digital reproduction was the worst thing ever to happen to audio technology. Or at least the worst thing since transistors. And, as with transistor technology, the engineering pursuit of digital excellence began.

**T**ODAY, some six years after its debut, compact disc technology has indeed evolved considerably. In light of this evolution, STEREO REVIEW felt it was time to examine the question of the audibility of differences again. We assembled six players representing the state of the art in CD technology. Indeed, two of the players were engineering prototypes, fresh from the designer's

workbench and still unavailable to the public. We selected the Cambridge Audio CD2, the Denon DCD-1520, the Philips CD-960, the Sony CDP-707ESD, the Tandberg 3015A, and the Yamaha CDX-1110U. It was our intent to compare these six players by ear to determine the extent of audible differences between them. Because each player offers very high-fidelity reproduction, we expected that the differences, if any, would be subtle. Finding *any* statistically significant differences, however, would serve to determine whether audible differences between high-quality CD players actually do exist.

**B**ECAUSE we expected any differences to be slight, the test procedure itself was crucial, and we chose to use the double-blind ABX comparator system. In this system, a listener must decide which of two program sources, A or B—in this case, two CD players playing the same part of identical discs—sounds the same as a third source, X, which the ABX system randomly assigns in each test to A or B. Answers are manually recorded and compared with the actual sequence of assignments. The higher the percentage of correct identifications, the more likely it is that there is a real difference between A and B. (For more details, see the box on "Test Equipment and Methods," page 83.)

The listening room itself also required special consideration. On one hand, since the room would be common to all the players, it was not a testing variable. But in order to provide the highest possible sound quality for the test, thus increasing the ability to hear subtle differences, we used a room constructed for the sole purpose of critical listening. The room is well isolated from ambient noise and is treated throughout with fiber-glass baffles 1 foot thick. In addition, its

dimensions and geometry are designed to minimize room modes. It exhibits an ambient noise level of 25 dB SPL and has an essentially flat response down to 100 Hz. In short, it does not impose distracting characteristics on the sound.

Then we chose the listeners themselves. While the ABX method of testing allows no room for fudging, the selection of human subjects always does. In light of the rigorous testing method and the high fidelity of the CD players, we felt it necessary to field the best listeners we could find. We specifically selected listeners who were young and musically inclined. The group primarily comprised music students, music-engineering students, music faculty, and other audiophiles at the University of Miami. We made sure to select a number of women, because it is generally believed that women have better hearing than men. The listeners were thus inherently qualified to listen for differences. Our intent was not to ascertain whether a random sample of listeners could hear differences, but whether audible differences exist at all. Good ears would help us find out.

**W**ITH the six compact disc players and the playback system in place, the room acoustics characterized, the testing method finalized, pairs of identical test discs chosen, and twelve qualified listeners available, we were ready to begin. The tests were conducted with one listener at a time. Except when I was the subject, I was the only other person present in the room; my job was to certify that the players' output levels matched and that disc playback was synchronized. With each listener, the tests were conducted in two stages. Only success in the first stage allowed a listener to continue on to the next.

The first stage used the CBS CD-1 test disc, Track 20. This extremely useful track contains a 500-Hz dith-





**T**he Cambridge Audio CD2 (\$1,700) uses the Philips four-times-oversampling circuit-chip set in a highly unusual architecture. Following the initial quadruple oversampling, each sample is further oversampled by a factor of four. Then the resulting bit stream is divided between four dual-channel Philips 16-bit D/A converters. A one-pole passive analog filter completes the output stage. The

CD2 uses a Philips single-beam laser pickup mounted on a swing arm.

□ LAB MEASUREMENTS

Frequency-response variations (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	0	0
40 Hz	0	0
100 Hz	0	0
200 Hz	0	0

	Left	Right
500 Hz	0	0
5 kHz	0	-0.1
7 kHz	-0.1	-0.1
10 kHz	-0.2	-0.3
16 kHz	-0.3	-0.3
18 kHz	-0.4	-0.5
20 kHz	-0.5	-0.6

Harmonic distortion (THD + noise) at 1 kHz, 0 dB: left, 0.0163%; right, 0.0162%

Intermodulation distortion (SMPTE) at 0 dB: left, 0.0039%; right, 0.0030%

Channel separation at 1 kHz: left, 92.4 dB; right, 93.1 dB

Signal-to-noise ratio: unweighted, 103.7 dB left, 102.3 dB right; A-weighted, 115.6 dB left, 114.9 dB right

Linearity at -90 dB with dithered signal: left, -93.9 dB; right, -95.2 dB



**D**enon's DCD-1520 (\$750) uses two Burr-Brown 18-bit D/A converters (PCM-64) and converts two additional bits through a discrete-component conversion circuit. This 20-bit architecture is said to extend the player's signal-to-noise ratio. Each player has the most significant bit of its D/A converter calibrated individually at the factory. The DCD-1520 uses eight-times oversampling and a three-beam laser pickup.

□ LAB MEASUREMENTS

Frequency-response variations (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	0	0
40 Hz	0	0
100 Hz	0	0
200 Hz	0	0
500 Hz	0	0
5 kHz	0	0
7 kHz	0	0
10 kHz	-0.1	-0.1
16 kHz	-0.3	-0.3
18 kHz	-0.4	-0.4
20 kHz	-0.5	-0.6

Harmonic distortion (THD + noise) at 1 kHz, 0 dB: left, 0.0013%; right, 0.0014%

Intermodulation distortion (SMPTE) at 0 dB: left, 0.0020%; right, 0.0022%

Channel separation at 1 kHz: left, 99.1 dB; right, 100.1 dB

Signal-to-noise ratio: unweighted, 104.5 dB left, 103.5 dB right; A-weighted, 116.3 dB left, 115.8 dB right

Linearity at -90 dB with dithered signal: left, -88.0 dB; right, -87.3 dB

**P**hilips uses its own quadruple-oversampling, 16-bit D/A conversion chip set in the CD-960 (\$949). The laser is a single-beam Philips pickup mounted on a swing arm as in other Philips-made CD players.

□ LAB MEASUREMENTS

Frequency-response variations (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	0	0
40 Hz	0	0
100 Hz	0	0
200 Hz	0	0
500 Hz	0	0
5 kHz	0	0

	Left	Right
7 kHz	0	-0.1
10 kHz	-0.1	-0.1
16 kHz	-0.2	-0.2
18 kHz	-0.2	-0.3
20 kHz	-0.2	-0.3

Harmonic distortion (THD + noise) at 1 kHz, 0 dB: left, 0.0076%; right, 0.0082%

Intermodulation distortion (SMPTE) at 0 dB: left, 0.0025%; right, 0.0027%

Channel separation at 1 kHz: left, 106.4 dB; right, 106.5 dB

Signal-to-noise ratio: unweighted, 109.0 dB left, 108.5 dB right; A-weighted, 114.5 dB left, 115.3 dB right

Linearity at -90 dB with dithered signal: left, -91.3 dB; right, -95.2 dB



## LISTENING TESTS



ered tone that fades from  $-60$  dB to approximately  $-120$  dB. It is intended for subjective evaluation of the linearity of CD players at extremely low levels, to pinpoint problems in the digital-to-analog (D/A) converters, for example. In the course of our tests, we found that differences between these state-of-the-art players were clearly audible when they were compared playing this track. Given enough playback gain (the amplifiers were wide open), our subjects could reliably hear differences between all the players. The only errors in identifying players probably stemmed from simple lapses of attention. In all, our listeners made correct player identifications in 96 out of 100 trials. In addition, they were able to form a consensus of descriptions of the audible artifacts produced by each player (see box on page 84, "Subjective Evaluations").

The first stage of the tests was intended to screen out any unsuitable subjects; as it happened, all subjects were highly successful in this stage and "graduated" to the second stage. Here things were considerably tougher. Music was employed as the test signal. Listeners were given their choice of program material. Discs included Mahler's Symphony No. 5 (Denon 33CO-1088), Prokofiev's *Alexander Nevsky* (Telarc CD-80143), Flim and the BB's, "Neon" (DMP CD-458), Mozart's Piano Concerto No. 13 (Bainbridge BCD6273), and Gershwin piano solos (Stradivari SCD-8000).

**I**N many ways, ironically, music is the worst kind of signal to use when evaluating stereo equipment. The signal is dynamically changing, often with just enough pattern to confuse judgment. All of the subjects realized this immediately. There were no obvious differences between any two players when music

was the test signal; or, rather, the very differences we had just proved to exist (in stage one) could not readily be perceived with music. As a result, the difficulty in comparing the six players was enormous. Listeners spent hours listening for a detail, any detail, to help them. Often when a subject thought that some nuance had been pinpointed, the ABX box proved that it had not. On the other hand, often when a subject felt very insecure in his responses, the ABX box showed that the responses had been correct. Some of these discrepancies can be ascribed to the whims of probability, but overall the listeners managed to defy chance and showed an ability to hear differences between players.

**E**VERY player was compared with every other player in a total of fifty trials. The statistical results are shown in the table on page 82. Each comparison is expressed in four ways: the number of correct decisions versus total trials, the percentage of correct answers, the probability that the correct decisions were the result of chance, and the reverse of that, the level of confidence that the correct decisions did *not* result by chance. Because different listeners, with individually different success rates, were involved in comparisons of different players, it is not valid to draw specific conclusions about the various players.

There are a number of interesting conjectures that the data may support, however. For example, on average, the Cambridge and Denon players were correctly identified most often, supporting the idea that—whether because of poorer or better sound than average—they were the easiest to differentiate. Listeners achieved a 99.9-percent confidence level with the Cambridge when it was compared with the Denon, Sony, and Yamaha players,

and the Denon yielded a 99.9-percent confidence level in comparisons with the Cambridge, Tandberg, and Yamaha.

The Philips, on the other hand, was apparently the most difficult player to identify. The listeners achieved a confidence level of 89.9 percent when the Philips was compared with the Yamaha, 83.9 percent when it was compared with the Sony, and significantly lower confidence levels for other comparisons. Perhaps the fact that two other players, the Cambridge and the Tandberg, are derived from Philips-made components, including Philips D/A converters, was a factor in these results. Indeed, the confidence level was only 55.6 percent when the Philips was compared with the Cambridge and only 44.4 percent when it was compared with the Tandberg. Similarly, the Denon and Sony players both use 18-bit Burr Brown PCM-64 D/A converters, and listeners achieved only a 23.9 percent confidence level when comparing them; in other words, they could not hear any difference.

Overall, listeners scored 466 correct decisions out of 750 trials, a 62.1-percent success rate. While the level at which we can be sure differences are audible is often assumed to be around a 75-percent success rate, it is clear that *some* kind of audible differences prompted the listeners to make these decisions. Indeed, statistically, it is virtually impossible that the overall result was due to chance. Thus, although the determination is not clear-cut, we can conclude that there *are* audible differences between top CD players.

**T**HREE other interesting points should be noted: First, the listeners were always aware of the identities of the two players they were comparing. When they expressed uncertainty about their responses, they tended





**S**ony's CDP-707ESD (\$1,800) uses a pair of 18-bit Burr Brown D/A converters (PCM-64) as well as eight-times oversampling in a fixed, linear conversion system, with no floating bits. A third-order analog filter completes the signal path. A three-beam laser pickup is used.

**LAB MEASUREMENTS**

**Frequency-response variations** (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	0	0
40 Hz	0	0
100 Hz	0	0
200 Hz	0	0
500 Hz	0	0
5 kHz	0	0

	Left	Right
7 kHz	-0.1	0
10 kHz	-0.1	0
16 kHz	-0.1	-0.1
18 kHz	-0.2	-0.2
20 kHz	-0.3	-0.2

**Harmonic distortion** (THD + noise) at 1 kHz, 0 dB: left, 0.0012%; right, 0.0014%

**Intermodulation distortion** (SMPTE) at 0 dB: left, 0.0030%; right, 0.0029%

**Channel separation** at 1 kHz: left, 112.3 dB; right, 113.3 dB

**Signal-to-noise ratio:** unweighted, 113.2 dB left, 112.3 dB right; A-weighted, 117.6 dB left, 117.1 dB right

**Linearity** at -90 dB with dithered signal: left, -88.6 dB; right, -90.6 dB



**T**andberg uses the quadruple-oversampling, 16-bit Philips D/A conversion chip set in its Model 3015A player (\$2,500). The direct-coupled output stage uses only discrete components and no negative feedback. The player has a single-beam Philips laser mounted on a swing arm.

**LAB MEASUREMENTS**

**Frequency-response variations** (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	+0.1	+0.1
40 Hz	0	+0.1
100 Hz	0	0
200 Hz	0	0
500 Hz	0	0
5 kHz	0	0

	Left	Right
7 kHz	0	0
10 kHz	0	-0.1
16 kHz	-0.1	-0.2
18 kHz	-0.2	-0.2
20 kHz	-0.3	-0.3

**Harmonic distortion** (THD + noise) at 1 kHz, 0 dB: left, 0.0135%; right, 0.0155%

**Intermodulation distortion** (SMPTE) at 0 dB: left, 0.0030%; right, 0.0045%

**Channel separation** at 1 kHz: left, 98.3 dB; right, 99.3 dB

**Signal-to-noise ratio:** unweighted, 100.6 dB left, 100.1 dB right; A-weighted, 103.5 dB left, 102.5 dB right

**Linearity** at -90 dB with dithered signal: left, -91.2 dB; right, -91.9 dB



**Y**amaha's CDX-1110U (\$1,199) uses dual, 16-bit D/A converters operating in a floating "11i-Bit" architecture. By shifting the bit-stream input to the converter by 2 bits and correcting for the resulting changes in gain, the 11i-Bit system is said to provide 18-bit performance. In addition, eight-times oversampling is used in the digital filter. Two outputs are provided:

one using a third-order analog filter and the other bypassing the analog filter entirely. The latter output was used for our tests. The CDX-1110U has a three-beam laser pickup.

**LAB MEASUREMENTS**

**Frequency-response variations** (in decibels) at 0-dB level (referred to 1 kHz):

	Left	Right
20 Hz	0	0
40 Hz	0	0
100 Hz	0	0
200 Hz	0	0
500 Hz	0	0
5 kHz	0	0
7 kHz	0	0
10 kHz	0	-0.1
16 kHz	-0.1	-0.2
18 kHz	-0.1	-0.2
20 kHz	-0.2	-0.2

**Harmonic distortion** (THD + noise) at 1 kHz, 0 dB: left, 0.0031%; right, 0.0031%

**Intermodulation distortion** (SMPTE) at 0 dB: left, 0.0029%; right, 0.0029%

**Channel separation** at 1 kHz: left, 102.7 dB; right, 99.4 dB

**Signal-to-noise ratio:** unweighted, 112.9 dB left, 113.7 dB right; A-weighted, 117.2 dB left, 116.2 dB right

**Linearity** at -90 dB with dithered signal: left, -88.6 dB; right, -87.2 dB

# STATISTICAL RESULTS

	Cambridge Audio CD2	Denon DCD-1520	Philips CD-960	Sony CDP-707ESD	Tandberg 3015A	Yamaha CDX-1110U
Cambridge Audio CD2		38/50 76% .00015 99.9%	26/50 52% .44386 55.6%	39/50 78% .00005 99.9%	24/50 48% .66409 33.6%	39/50 78% .00005 99.9%
Denon DCD-1520	38/50 76% .00015 99.9%		26/50 52% .44386 55.6%	23/50 46% .76006 23.9%	40/50 80% .00001 99.9%	36/50 72% .00130 99.9%
Philips CD-960	26/50 52% .44386 55.6%	26/50 52% .44386 55.6%		29/50 58% .16112 83.9%	25/50 50% .55614 44.4%	30/50 60% .10132 89.9%
Sony CDP-707ESD	39/50 78% .00005 99.9%	23/50 46% .76006 23.9%	29/50 58% .16112 83.9%		38/50 76% .00015 99.9%	26/50 52% .44386 55.6%
Tandberg 3015A	24/50 48% .66409 33.6%	40/50 80% .00001 99.9%	25/50 50% .55614 44.4%	38/50 76% .00015 99.9%		27/50 54% .33591 66.4%
Yamaha CDX-1110U	39/50 78% .00005 99.9%	36/50 72% .00130 99.9%	30/50 60% .10132 89.9%	26/50 52% .44386 55.6%	27/50 54% .33591 66.4%	

**E**ACH of the six players was compared with every other player in a total of fifty trials. In each trial, the listener attempted to determine which of the two players under comparison was identical to the randomly assigned mystery source, X. A high number of correct identifications suggests that there are audible differences between a given pair of players. All of these trials used classical or popular music, not test signals, selected by the listeners from a varied group of CD's. The results for each pairing can be found by reading down the left side of the table and then across. The results are presented

in four different ways. Reading from top to bottom in each block, the figures represent: (1) the ratio of correct identifications to the number of trials, (2) the percentage of correct identifications, (3) the probability—expressed as a decimal between zero (an impossibility) and one (a certainty)—that the correct identifications were the result of chance (for statisticians, this figure is exactly equal to the cumulative binomial-function distribution), and (4) the level of confidence, again expressed as a percentage, that the correct identifications did not result from chance (any figure over 75 percent is statistically significant).

to identify their preferred players with source X. In addition, the number of successful responses often dropped toward the end of a long listening session. Given the concentration required to hear small differences between CD players, this isn't surprising. In other words, critical listening is hard work! Finally, although we did not independently test this effect, it seemed that the listeners' acuity was heightened when the lights were dimmed or the room was darkened altogether. Several listeners specifically requested darkened condi-

tions. One of the listeners scored significantly better with lights off, proving that sometimes it is indeed better to be kept in the dark.

The final part of the procedure was to analyze the subjects' personal preferences. Only the opinions of those who had fared well in the second stage were considered since, clearly, those who failed to hear differences reliably had no business expressing preferences. All of the subjects had been requested to note their subjective reactions during stage two. The reactions of the six most successful subjects (see "Sub-

jective Evaluations" box) were compared with the statistical results of the stage-two tests.

The comments generally favor the Denon, Sony, and Yamaha players over the Cambridge, Philips, and Tandberg. Although correlation with our earlier results is difficult, perhaps we can conclude, in a very general way, that the Denon was more easily identified because its sound was "better," while the Cambridge was more easily identified because its sound was "worse," compared with the other four players. The fact that the compari-



# TEST EQUIPMENT AND METHODS

**Q**UESTION almost as hotly debated as the audibility of differences between components is that of the method of comparison itself. We selected a method that we believed to be the most rigorous available: double-blind testing using an ABX comparator. This device consists of a switching box, a logic and display box, and a handheld control. In our tests, outputs from each pair of CD players being compared, arbitrarily designated A and B, were routed through the switching box and then to a preamplifier, power amplifier, and loudspeakers.

## THE REFERENCE SYSTEM

To permit high-resolution listening, we assembled a high-quality reference system. While audiophiles can argue endlessly over component selection, we were well satisfied with our system and felt that it never masked the audibility of artifacts in the CD players' outputs. This was particularly true of the amplification chain, which was called on to provide clean, audible listening levels for tones at -100 dB or below—a not inconsiderable feat.

The stereo preamplifier we selected was the Conrad-Johnson Motif MC9, which uses field-effect transistors. For our tests, the optional phono stage was not installed. The power amplifier was the Conrad-Johnson MS-100, also solid-state, which delivers 100 watts per channel into 8 ohms. All electrical components, including CD players and amplifiers, were left powered throughout the two-month duration of the tests.

All interconnects—between CD players and the ABX box, the ABX box and the preamplifier, and the preamplifier and power amplifier—were Monster Cable M1000. Lengths were kept as short as possible (3 feet or less). Two 20-foot lengths of Monster Cable M1 were used to connect the loudspeakers. Gold-plated Monster Cable connectors were used throughout. Because the MC9 preamp is phase-inverting while the MS-100 power amp is not, we were careful to insure a correct absolute-phase signal chain by inverting at the loudspeakers.

For loudspeakers we selected the B&W Matrix 801 Series 2 system, which has a vented-cabinet design. Used without an external filter, the speaker system provides a fourth-order Bessel response that's 9 dB down at 19 Hz. The bass driver uses a 13-pound magnet, and the high-frequency driver has a metal-domed diaphragm. The crossover has a fourth-order Butterworth response and crossover

frequencies at 380 and 3,000 Hz. There are two protection circuits, one for the bass driver and the other for the midrange/tweeter.

## A, B, OR X?

During each trial in the series of listening tests, the logic circuit in the ABX comparator randomly selected one of the two CD players connected to it, A or B, and designated its output as source X. The listener was free to switch between A, B, and X; a lighted indicator showed which was selected for playback through the reference system. The listener's job was to determine whether it was player A or player B that was identical with X. For each series of trials, the ABX comparator provided a record of which player was assigned to X in each trial, enabling the correctness of the identifications to be determined.

In other words, the test was solely a matter of perceived differences. If you can hear a difference between A and B, then you should be able to hear the difference between A and X or B and X; then you can determine which player is X. If there is no audible difference between A and B, then successful human determination of X becomes as random as its machine selection: That is, a listener will decide correctly 50 percent of the time. While some criticize the ABX test procedure—claiming for example, that it induces an unnatural stress on the listener—we feel it is an ideal method, at once convenient, fair, and rigorous. Any other method of A/B comparison, such as cable swapping, can introduce unwanted variables and fails to provide a quick means of comparison.

## CONTROLLING VARIABLES

The need for quick comparisons leads to a particular problem when testing audio sources. Ideally, the sources must be exactly synchronized for a fair test. Otherwise, when switching between A and X, for example, a slight time difference would

easily clue the listener that X is not A but rather B. Such clues would lead to a high score, but the success would not result from differences in sound character but rather from timing differences, an artifact of the test itself. Obviously, that would invalidate the test results.

It is difficult, however, to synchronize two CD players exactly. In a previous test for *STEREO REVIEW*, David Clark opted to vary the internal clocking of one player in each pair so that it could be brought into sync with the other; we decided against that for two reasons. First, we did not want to modify any player in any fashion. Second, because not all of the CD players under test permitted external clocking, it would have necessitated using a few players as references and comparing all the others only with them. That would have precluded comparing each player with all the others, as we wished to do.

To solve the synchronization problem we modified the ABX switcher instead. By adding capacitance values in a circuit, we lengthened the switching period to about a second, which introduced a mute between selections. We synchronized the players under test (by hand) to within a half-second or less, and the switching mute prevented listeners from using the slight time differences as clues. Independent tests (using identical players) confirmed that we had removed synchronization as a possible factor in the listeners' responses. On the other hand, the longer switching period made comparisons more difficult.

Another variable we had to control was player output levels. Levels are by no means standardized and can vary by a volt or more. Any disparity in level immediately invalidates a listening test. For a variety of reasons, the ear is drawn toward the louder signal and tends to prefer it. (Whenever you compare two components, make sure that the listening levels are exactly the same—otherwise you are wasting your time.)

In our case, any level differences would lead to a determination that there are audible differences—but only as an artifact of the test, not of CD player technology. To prevent this, we routed the four cables from each pair of players through four high-precision, ten-turn locking potentiometers with calibrated scales, and each player's output was normalized using a test disc and a voltmeter. In this way, level differences were kept to 0.001 dB or less. (In practice, differences of 0.1 to 0.2 dB at 1,000 Hz are clearly audible.)



The speaker: B&W Matrix 801 Series 2

## SUBJECTIVE EVALUATIONS

**T**he first stage of the listening tests, in which all the listeners were able to hear differences between the players they were comparing, involved Track 20 of the CBS CD-1 test disc. This track has a 500-Hz test signal that fades from -60 to about -120 dB. Given the high degree of audibility of the sonic artifacts produced by the CD players as they attempted to reproduce Track 20, it is not surprising that an almost complete consensus was obtained.

Listeners agreed that the Cambridge Audio player generated considerable distortion at extreme low levels (less than -90 dB) and also that, because of a mismatch between the channels, the tone appeared to drift to the left channel at lower levels. The Denon's noise floor was deemed the quietest among the six players; distortion was minimal, with no evidence of harmonics. In addition, the tone did not drift to either side.

The Philips player exhibited a small amount of audible distortion and slight noise; both decreased as the tone's amplitude decreased. The Sony provided an extremely quiet noise floor with minimal distortion, but there was a slight buzz in both channels, and the tone appeared to drift to the left. The Tandberg was extremely quiet, with only slight distortion and no channel drift. The Yamaha had relatively high hum and minute distortion at low levels.

It should be noted that in all of these tests amplification gain was boosted to its maximum to permit audibility of these artifacts.

All of the listeners were asked to make notes of their subjective reactions during the second stage of testing, in which the players were compared using music. Excerpts from the comments of the six listeners who had the best scores in this stage—that is, who were most reliably able to hear differences between the players—are given below, in no particular order.

□ "The Sony seems to be very transparent, without any hint of coloration. The sound seems to be solid, with firm placement of all instruments. The Yamaha is almost its equal. It certainly has the same kind of soundstage and impact, but with a different presence. I think I could differentiate between them because of the Sony's greater sense of depth. The Denon is also very good, but lacks something which, frankly, I cannot define. The other players are very good, but do not strike me as favorably. The Sony would be my pick."

□ "The Denon is an amazing player and seems to beat the others by a slight margin. I can't think of much that could be done to improve the sound; I think it's conveying virtually all the data on the disc. The Philips and Tandberg are excellent also, but seem harsher. The Sony, Yamaha, and Cambridge are very good, but evidently not in the same league. I think I was pretty reliably able to differentiate them—so they must be lacking something."

□ "This is a very difficult test—far tougher than I imagined. Clearly, whenever you hear an obvious difference between top players, either something is wrong with the players, or the test, or you're imagining things. As a group, I think I could tell the Denon, Sony, and Yamaha apart from the Cambridge, Philips, and Tandberg. However, I am not so confident within groups. I would favor the first group over the second. I think I'd buy the cheapest player in the first group and be pretty happy."

□ "This test was infinitely harder than I thought it would be. The differences between these players are negligible. Either the CD standard has locked everybody into sounding the same, or else they've all achieved true high fidelity. As far as favorites go, I think I would pick the Yamaha. I think I was able to hear a smoother quality to that player, especially at low listening levels. Also, placement in depth perspective seemed more realistic, somehow."

□ "In my opinion, there are no meaningful audible differences between high-end CD players. I could not tell them apart, and even if my scores show some kind of subliminal ability to hear differences, that wouldn't persuade me to pay a penny more for any particular player. So I can tell you that my favorite player is whichever one is cheapest. Other factors, like durability, would make me consider the Sony and Philips models."

□ "I think I would put them in this order: Denon, Yamaha, Philips, Sony, Cambridge, and Tandberg. But I would have to listen for a much longer time to get a better opinion. Can I take them home? Also, I think I would prefer listening over headphones. That would give a closer representation, as opposed to loudspeakers. Over your average, good-quality listening system, any of these players would be satisfactory. Take my word for it: It just doesn't get any better than this, at least not until the next Consumer Electronics Show."

son of the Cambridge against the Denon achieved a 99.9-percent confidence level tends to support this conjecture. And the fact that the Denon and Sony players proved to be statistically indistinguishable would place the Sony with the Denon in the "better" sound category, which is also supported by the subjective comments.

Given the subtlety of the audible differences, however, it is possible that slight differences in construction from player to player in the same line (for example, the D/A converter chips that a particular unit happens to have) may make it invalid to extend these results among all samples of the same model. In other words, strictly speaking, the comparisons are valid only for the particular six players we used.

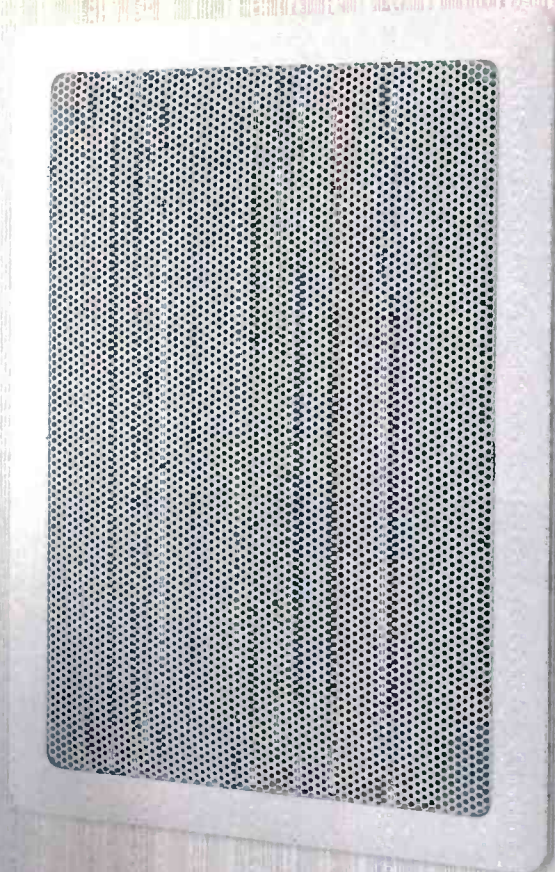
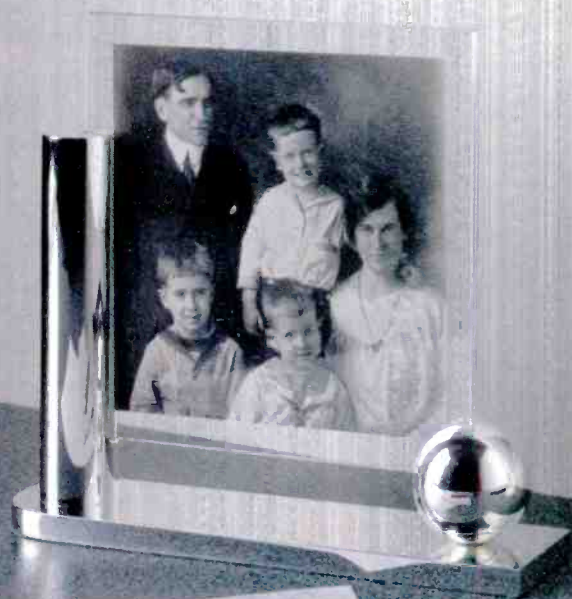
As for our original question—Can listeners reliably hear a difference between CD players?—our study can support two different answers: One answer is, yes, always. The other answer is, sometimes, but barely. Either answer is true, depending on the test conditions, and particularly on the type of audio signal that is used.

With a fade-to-silence test tone, all listeners were able to hear significant differences between the players. The few errors in their responses are probably attributable to simple attention lapses. It is clear that linearity at low levels remains the Achilles' heel of digital audio. With dynamically variable music, responses were far less accurate. Our statistics suggest that with music as the test signal, critical listeners *can* hear differences, but only some of the time and only under carefully controlled conditions. Finally, there may be some correlations between the particular technology employed and audible differences.

Because audio equipment is designed primarily for listening to music, not test tones, in the final analysis our listening tests must yield a qualified conclusion: All CD players are *not* created equal, but the audible differences depend both on what you are listening to and how good your ears are. That is not surprising. The important point is that listeners who still feel compelled to voice equipment preferences apparently have the weight of double-blind listening tests to back them up. And that, of course, is good news for the continued evolution of digital audio technology. □



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# USEFUL NOISE

EVALUATE YOUR COMPONENTS WITH RANDOM-NOISE SIGNALS



BY HOWARD FERSTLER

**T**EST reports in magazines can help you decide what equipment to buy, but they cannot indicate whether the particular equipment you already own is performing the way it's supposed to. Most audio and video enthusiasts eventually begin to wonder if their systems are up to snuff. Without the expensive test hardware needed to evaluate your system properly, though, how do you find out? You could turn your components over to a store repairman for evaluation—but that can be expensive, and you may never know for certain whether the repairman is technically competent and well enough equipped to do a proper job. A thorough electrical analysis of audio hardware is actually beyond the resources of

ILLUSTRATIONS BY HENRICK DRESCHER



typical consumer service facilities. But there *is* a cheap and easy way to evaluate your own hi-fi system.

Usually we want to banish noise from our systems, since noise—hum, hiss, or video “snow”—competes with what we want to listen to or watch. Random or “white” noise can be an excellent tool for evaluating certain kinds of audio gear, however, and it can even help you *improve* the audio performance of your equipment. Used properly, such noise can allow you to do a very exacting “subjective” analysis of your components.



Clean random noise has spectral and temporal properties that ordinary music lacks, even when it is well recorded. Music fluctuates in amplitude and frequency balance to such an extent that A/B testing often becomes an exercise in frustration, but the texture of random noise is such that the ear perceives it as uniform. An A/B test done with random noise—using either the interstation hiss that can still be heard from some FM tuners after the muting is turned off, the aural blast from a television receiver when it is tuned to a nonexistent station, or the more exactly uniform white or “pink” noise on some test discs or created by a signal generator—will reveal characteristics that even very critical musical listening tests will miss.

Testing an audio cassette recorder is easy. If you have an older FM tuner that allows interstation hiss to be heard with the muting off, simply find a place on the dial where the noise is smooth and steady, and then record it. How long you should record will depend on how much of a comparison you wish to do, but a minute or two will probably be enough. The record level to use will depend on the quality of the tape, the performance capabilities of the deck, and, not least, the accuracy of the deck's recording-level meters. With most cassette decks, a record level of  $-10$  to  $-20$  dB will probably be fine, but for an acid test you might also want to do at least part of the test at  $-5$  dB or even at 0 dB. A good starting point might be the level setting where you ordinarily get roughly equal volume from the recorder and the source, in this case your tuner.

After taping the noise, stop recording and rewind the tape to the starting point, *making certain that you do not disturb the setting of the tuner dial*. Then simply play back the tape and do an A/B comparison between the signals from the tuner and from the deck. Check each channel *separately*, by rotating the balance control to shut off the other. (Comparing them together introduces additional variables that will muddy up the test.) Remember that since you recorded the hiss at different levels, there will be volume differences between the deck's and the tuner's outputs that you will have to ignore. What you are comparing is the frequency content of the signals, not their relative levels.

If your recorder and tape are of high quality and are well matched, you will find that at  $-20$  dB the tape dub should be almost exactly the same in frequency content as the FM noise source. At  $-10$  dB, there may be a slight muting of the extreme highs as the tape begins to saturate. At  $-5$  dB and at 0 dB, you may find that your deck/tape combination cannot accurately reproduce the random noise you have recorded. This is normal and should in no way give you cause for concern. At 0 dB in particular, the frequency content of random noise will overload nearly any tape. If the deck did well at  $-10$  or  $-20$  dB, you can be pretty sure that it will do well when recording most music, at least in terms of tonal balance and tape saturation.

Many of today's digital tuners, unfortunately, cannot give us an unmuted, interstation random-noise signal. If you have that kind of tuner, or have no tuner at all, an alternative, and probably better, random-noise source is a good test CD. A number of these are available, two readily accessible ones being “The Digital Domain” (Elektra/Asylum 60303-2) and the “Digital Audio Check CD” (Denon C39-7441), both of which have additional test signals and music samples of value to owners of compact disc players.

The only procedural difference when using a disc rather than FM hiss is that you must recue the proper test signal before playing back the tape. One advantage to using a disc is that there is no way to lose the original signal, as would be the case if the FM tuner dial were disturbed during tape rewind. Most test discs

will also probably have a cleaner random-noise signal than will be found between FM stations.

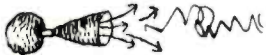
This procedure will enable you to evaluate a variety of tape-recorder functions and features quickly and efficiently. For instance, by making test recordings both with and without noise reduction, it is possible to make a precise evaluation of the overall performance of your deck's noise-reduction circuits and to isolate any problems they might have from those of the basic recorder electronics or the tape heads. In addition, the tests will not only help you to evaluate the quality and performance limits of your recorder but will also give you a clue which tape to use with your particular machine. Published tape tests are helpful but are actually only starting points, because they cannot tell you what tape is best for a *specific* recorder. By checking your deck's performance with a variety of good tapes in random-noise tests, you can select the specific tape that gives optimum results with your machine.

A random-noise test can also help you to pinpoint which tape brands are least plagued by dropouts and coating irregularities, since those deficiencies will be very evident during the source/tape comparison. And even if a recorder/tape combination has performed well in a previous test, a quick check of the combination just before an important recording session will tell you if the heads are clean or if something else, such as bias adjustment, has deteriorated since the last evaluation.



With many video recorders, all you need to do is tune the VCR to an empty TV channel to get an adequate random-noise signal. Once this is done, the procedure for audio evaluation can proceed as above. Many VCR's do not have adjustable input levels, but their automatic level controls should make them record at a level high enough for a meaningful evaluation. If the VCR *does* have adjustable inputs, the procedure is similar to that for audio cassette decks, except that levels as low as  $-10$  or  $-20$  dB may not be measurable on some VCR level meters. You will have to play this one by ear and try recording at a number of levels.

The performance of hi-fi video recorders should be better than what is typical of analog audio cassette decks and even good open-reel decks. Even a 0-dB record level should yield a tape dub that is nearly indistinguishable from the original in terms of frequency balance. If the audio performance of a VCR is substandard, all that may be needed is a good head cleaning. But if that does not correct the problem, the deck almost certainly needs professional servicing.



Some video recorders have an auto-mute feature that automatically silences the audio output when no signal is present. This prevents the viewer from being stunned by a blast of noise in the event of signal loss or if the set is inadvertently tuned to an empty channel. If your VCR has this feature, you can still evaluate it by hooking it into an audio tape loop and running the test using a test CD. As with FM tuners, the noise signal in most test discs will be cleaner than that from the empty channels on a video station selector.

While tape recorders are the components that can be most dramatically and accurately evaluated using random noise, other components can be effectively checked as well. Interconnect cables are easy to check, provided that *two* identical or near-identical random-noise signals are available. If you obtained a good match between your tape deck and a test disc or interstation noise, various cables can then be substituted for one pair of originals to compare the effects of various brands and types. Such comparisons can be particularly helpful if you plan very long cable runs, where capacitance effects might be audible. You could also perform this kind of test more precisely by using two compact disc players playing identical test discs, provided, of course, that the players themselves have passed an A/B random-noise comparison. (Individuals who think they hear *gross* differences between CD players can resolve at least some of their confusion by doing this kind of evaluation, but two *identical* random-noise test signals must be used.)

Besides facilitating the precise comparison of electronic compo-

nents without a bank of expensive test gear, random noise can also enable you to do at least a fair job of evaluating the condition of your loudspeakers. While this kind of test will not help evaluate the overall performance of your speakers, it will let you spot differences in a pair of speakers that should not ordinarily be present. Most so-called "identical" loudspeakers, for instance, do not sound as much alike as one might think. To verify this, try listening to a random-noise signal while using the balance control to make A/B comparisons between both speakers of a stereo pair. (Make sure that the input signals are the same by switching the amplifier or receiver's stereo/mono control to mono and bypassing the tone controls or setting them to neutral.) You may be very surprised to find that they sound quite different. Room modes will be playing a part in this kind of evaluation, so the best way to do a more exact comparison is to pull both speakers well away from nearby walls, put them very close to each other, and then sit the same distance from both. If you listen from up close, they may still sound quite different because of near-field effects, so you should sit well away from them, at least as far as you typically would when listening to them normally. (As a result, you may need an assistant to operate the balance control.)

Under such conditions, your speakers will almost certainly not sound as much alike as a good tape dub compared with a random-noise source, but they should *not* sound tremendously different. If they *do* sound very different, quite a number of factors could be contributing. Your amplifier or receiver itself may be a contributing factor if its tone controls are not tracking together. Another factor may be the level controls on the speakers themselves. Frequently, the continuously variable controls on some components are not properly aligned, and thus positions of the bass and treble tone controls or the tweeter and midrange controls on the speakers that are indicated as identical will *not* be the same. Often, simply playing with the control settings will correct most of the spectral-balance differences you hear. If those differences are fairly obvious, one way to make sure they are not the result of amplifier or preamplifier nonlinearities is to make a mental note of the

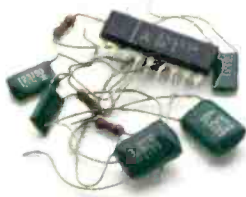
*kind* of differences between the speakers, switch the speaker or interconnect leads around (making sure to shut off the power first, to prevent shorting or overload damage), and then listen again to see if the frequency characteristics have switched also. If they have not, you can be sure the problem is in the speakers and not in the electronics.

Speaker problems may not be subtle at all. Perhaps the differences you hear are gross and are the result of an actual driver malfunction or failure. One way to check out each driver is, first, simply to listen to each one from very close up. Usually if a driver is working at all it will be working properly. Often, however, you may be surprised to discover that a driver (usually either a tweeter or midrange) is *not* functioning at all, either because it has been damaged by an overload or because there is a poor connection. A random-noise test will quickly isolate this kind of defect. But drivers *can* have more subtle problems, and it may be best to do an A/B check of each one in relative isolation. This can often be done simply by adjusting the tone controls to their extremes (being careful not to overdrive woofers and tweeters) and listening to the now well-amplified suspect drivers.



To compare woofers, for instance, turn the bass control all the way up and the treble control all the way down; if there are level controls on the speakers themselves, also attenuate the tweeter and midrange drivers. Evaluate the tweeters by setting the controls in the opposite direction, but take care not to overdrive them with excessive, high-powered treble input. Keep the overall gain low. The midrange drivers can be tested by turning down both the bass and the treble on the amplifier (and speakers, if possible) and repeating the random-noise test. Some speaker systems are designed to be biamplified or biwired, and in these cases the drivers can be electrically isolated by removing jumpers on the backs of their cabinets. Some systems also have level controls that allow complete attenuation of various drivers. A certain amount of ingenuity may be necessary, depending on the specific speaker models being evaluated. □





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# SYSTEMS

Probing beneath the surface for optimum speaker placement



by Rebecca Day

**W**

*HEN Polk Audio autosound manager Rick Lozano first took a look at the Ford Probe as a demo car for the Polk Stereo Dimensional Array*

*(SDA) Mobile Monitor speaker system, he thought it was an installer's dream. He saw a lot of surface area to accommodate speakers. Upon further inspection, however, he found that Ford had slipped several automotive devices under the prime surfaces, so locating housing for the side speakers became a real challenge. Undaunted, Lozano, who guesses that the Probe system is somewhere around his 2,501st installation, worked around the obstacles and came up with a system that is sonically sound and aesthetically appealing.*

*The front end of the system is an Alpine 7907 CD tuner, which is the first car CD player to have four-times oversampling. It feeds three Soundstream Class A-50 50-watt amplifiers: A high-frequency and a low-frequency amp power the front speakers, and the third Class A-50 amp drives the rear dimensional speakers. A Soundstream D-200 200-watt amp powers the two subwoofers.*

*The system features a pair of Polk MM6502 stereo speakers in front, a pair of MM10A directional speakers in the rear, and MM6501 subwoofers located in*



PHOTOS BY PAUL DI COMO/COURTESY POLK AUDIO







# SYSTEMS



reconfigured factory locations on the sides.

The speakers are part of the Polk SDA system, in which the left and right speaker complements are constructed as mirror-image pairs, each having its normal stereo drivers in the front of the car and what Polk calls the "dimension array" speakers in the rear. Each dimension array is fed signals from the opposite channel, and because of the spacing of the drivers and the system's crossover network (mounted in the trunk), the sound from each dimension array (ideally) cancels the interaural crosstalk from the stereo drivers of the opposite channel. The result is a broadening of the sound stage.

Each of the MM6502 speakers has a 6½-inch woofer, a 1-inch polycarbonate tweeter, and a 2-inch midrange. The midranges and tweeters are flush-mounted in the doors, and the woofers fit nicely into the factory enclosures in the doors.

**T**HE MM10A's have 6½-inch woofers and 1-inch polycarbonate tweeters. Lozano mounted each pair of drivers coaxially on an amp board in the rear hatch area. The MM6501's are 6½-inch subwoofers mounted in factory-location side pockets that required modification. When Lozano removed the grille on the right side he discovered a tunnel behind the factory speaker that was hanging in a bracket. Since the tunnel washed out any potential benefits of a speaker upgrade, he built back panels so that each subwoofer would, in effect, be playing in a cabinet, with the body panel of the car reinforcing its bass response.

Lozano used 04-gauge Esoteric Audio cable throughout the installation for its high-current capability, damping ability, and mounting flexibility. □





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# KRONOS quartet

by David Patrick Stearns

"Winter was hard. . . . There wasn't much for the ducks. Mother turned the bread bin upside down. The water was black and soon it froze." These lines from a choral piece with string-quartet accompaniment by the contemporary Finnish composer Aulis Sallinen open the latest Nonesuch recording, "Winter Was Hard," by the San Francisco-based Kronos Quartet.

The Sallinen piece sets the tone for the predominantly dark-hued album, and the subsequent works seem to represent various tests of the human spirit: elemental in Terry Riley's orgiastic *Half Wolf Dances*, mad in John Zorn's schizoid *Forbidden Fruit*, contemplative in Arvo Pärt's *Fratres*, obsessive in Alfred Schnittke's String Quartet No. 3. And then, after all that, the album concludes with Samuel Barber's ultraromantic warhorse, the Adagio for Strings. It feels like some sort of emotional thaw, a repose that comes at the resolution of a difficulty or at the end of a rigorous search for enlightenment.

Though founded a decade ago, the Kronos Quartet is a young group—first violinist David Harrington, second violinist John Sherba, violist Hank Dutt, and cellist Joan Jeanrenaud are all still in their thirties. They worked more than a year on the new album, longer than on any of their previous projects, in an effort to make it not just a collection of miscellaneous pieces but a total statement.

"We were composing a musical experience," Harrington told me when I interviewed the group recently. "and it's probably the most intimate recording we've ever done. I wanted to approach the wordless quality in the music and get closer to the sounds we all hear inside of us."

Having brought Jimi Hendrix's *Purple Haze* into the concert hall, along with lighting worthy of a rock show and clothes from a Sid Vicious look-alike contest, the Kronos Quartet has prompted a lot of skepticism in certain quarters. But the group has only become more adamant over the years in its exclusive commitment to twentieth-century music. The Kronos plays nothing older than Bartók or Shostakovich, but beyond that it's difficult to make generalizations about its repertoire. The only thing you can say for sure is that it's not academic.

"For us," Jeanrenaud told me, "a composer has to have a very strong personality that comes through in the music. There [has to be] an individual voice, but I know that's subjective."

Some critics say that the Kronos's repertoire, which includes such composers as Philip Glass and Thelonious Monk, is compulsively trendy. That criticism is perhaps prompted in part by the members' punk-style clothes and by the design of their album covers, which look as if they belong on rock albums, even going so far as to omit the usual brainy liner notes you'd expect on a "serious" contemporary-music album. The quartet admits that some of these effects are calculated. The members believe that the visual aspects of their presentation should be as modern as the music they play, and the lack of liner notes, they feel, forces listeners into making up their own minds about the music.

It's easy to take them at their word when you consider that the quartet's alleged trendiness isn't exactly making them rich. Harrington can remember being on food stamps not so long ago. And while the



**"We have many directions we can go in, and it's just a matter of choosing which way."**



Kronos: from left, violinists David Harrington and John Sherba, cellist Joan Jeanrenaud, and violist Hank Dutt

Kronos's concert series at San Francisco's Herbst Theater is sold out, the group still needs foundation money to keep ticket prices down.

Despite its freewheeling image, the Kronos is one of the hardest-working chamber groups in the business, and the members prefer doing it all without a manager. They maintain an office in San Francisco from which they book the quartet's 140 concerts each year and solicit funds to commission ten to fifteen new works a year. Those commissions don't include the long-shot composers the group is pursuing, such as Peter Townshend or Sting, or the twenty or so premières the Kronos plays each season.

The quartet takes very little time off during the year—a few weeks at Christmas and at the beginning and end of the summer. When they're not rehearsing for a specific concert, they comb through tapes and scores sent to them by hopeful composers. They receive anywhere from two to ten a week. "We've figured out a system," Jeanrenaud said. "Things are logged when they come into the office. David likes to listen to them right away, and then they're passed around. If something grabs us, we talk about it at rehearsal."

Harrington, particularly, takes an active role in the composition process. Sometimes he has an idea for a piece and goes in search of a composer to realize it. Recently he has been looking for a composer to write something that resembles silent-movie music or incidental music for cartoons. He's also working on "a kind of libretto" based on various images from the letters of Rain-

er Maria Rilke, hoping to collaborate with a composer on a programmatic work, maybe including voices, maybe not.

It was perhaps inevitable that the group itself would try composing. Hank Dutt recalls that one attempt "included some theatrics. Joan was cutting out some background paper and making sculptures with the lighting, and David was going wild, pulling all these different sound effects."

Harrington, in fact, believes in using recording-studio technology as a compositional tool. In "Winter Was Hard," this is most obvious in the Zorn piece (also heard in Zorn's own recent album, "Spillane"), in which the fabric of the music is dependent on effects possible only in the studio. Harrington foresees a time when the Kronos has an entire repertoire of pieces that are too studio bound to perform in concert and are actually composed in the studio. One such piece in the new album is a snippet of neopsychodelia titled *The Door Is Ajar*, which consists of howling wind and a flat, computerized voice telling somebody to close the door. "It's just something that happened in the recording session," Harrington said. "What does it mean? I'm not sure, but it felt like the right thing to do."

The Kronos also uses recording technology as an interpretive tool. For instance, in Pärt's *Fratres*, the aural perspective of the recording attempts to make the listener feel as though he is moving closer to the music—a technique similar to what Glenn Gould attempted in a recording of solo-piano music by Sibelius.

"Then my idea is that the listener would turn and leave," Harrington explained. "That's the way [Pärt] wrote his dynamics, and what we were trying to do was enhance that effect."

The quartet is also experimenting with sound-reinforcement systems for its concerts. Amplification tends to be a dirty word in classical music, but it's "silly not to take advantage of it," Jeanrenaud said. "If you're playing in a dead space, it doesn't matter how well or how badly you've played. You still sound bad."

While violist Dutt said that he finds it "easier to interpret than compose," because he's "not as imaginative as a composer is," he remains committed to the Kronos's experimental approach. "We have many directions we can go in, and it's just a matter of choosing which way."

Indeed, the group sometimes appears to be on the verge of bursting out of the string-quartet medium completely. Nevertheless, even leader Harrington is devoted to the quartet and, surprisingly enough, its tradition. "There's nothing else in life that, for me, provides the resonance that this sound does," he told me. "In the thick and thin of events, this sound is a tremendous natural resource. There's nothing else in music that could come close. What I'm trying to do is extend this [string-quartet] tradition, trying to use what I think are its strengths and reaching deeper into the music itself. How that's done, I'm not always sure."

Ending the "Winter Was Hard" record with Barber's lush *Adagio for Strings*, with its associations ranging from the death of President Franklin D. Roosevelt to the film *Platoon*, might seem inconsistent with the Kronos Quartet's mission of *extending* the tradition. But Harrington disagrees.

"I don't see [the piece] as being conservative or as having any label," he said. "It goes right to the center of things. I've always been amazed that anyone could write that piece. It stands outside of time or place or circumstances. It's just pure music, and I love it. Usually, the acoustical settings in concerts aren't good enough for it, so we've only played it in concert twice. But I'm told that in one concert people were *kissing* in the audience." □



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\* \* \* \* \*

# HOLIDAY LOOT



BY WILLIAM LIVINGSTONE



S more and more Americans shop by mail, an increasing number of companies fill the nation's mailboxes with beautiful Christmas catalogs. This fall's crop makes me afraid my friends and relatives will be tempted to order gifts for me that I don't really want—things like a heated bird bath (Hammacher Schlemmer, New York City, \$62.75), a John Wayne "lazer print" wall hanging (Shepler's, Wichita, Kansas, \$20), or the Fundoshi, a *very* brief after-shower wrap adapted from the breech cloth worn by samurai warriors and wrestlers (Undergear, San Diego, California, \$6).

Fortunately, such well-established suppliers of consumer electronics

equipment and accessories as Radio Shack and Crutchfield have also sent out their catalogs. Besides offering convenience to those who prefer to order by mail, these catalogs serve as wonderful "wish books" to give you audiophiles ideas of things to include in a letter to Santa Claus or to put on your shopping list before you head for your favorite mall.

And, as usual, the editors and contributors of STEREO REVIEW have been asked to suggest things they have used and consider to be suitable gifts for the readers of this magazine. Our suggestions are generally limited to accessories and recordings, things that cost less than a pair of main speakers or an actual piece of electronic equipment. We hope our suggestions will be useful

if you are looking for a present for an audiophile and that they will help you manipulate your loved ones to find suitable gifts for you.

\* \* \*

A large number of accessories are gadgets to help you keep your equipment and recordings in pristine condition for optimum performance. Now that LP's are being phased out in favor of compact discs, it is all the more important that you do everything possible to preserve your treasured 12-inch, black-vinyl discs. Contributing Editor Julian Hirsch, the head of Hirsch-Houck Laboratories, recommends Nitty Gritty's Record Survival Kit, which costs \$75. It consists of a wooden case, suitable for carrying twenty albums, and such things as a magnifying glass, twenty

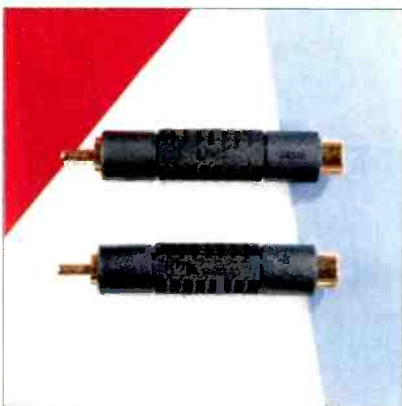
ILLUSTRATION BY ROSS MACDONALD

high-grade record sleeves, a powerful stylus-cleaning fluid, and a different cleaning fluid for records.



SSOCIATE Editor Laura Kelly recommends Discwasher's DiscKit record-care package (\$59.95). In addition to the well-known

D4+ cleaning fluid, it contains stylus-care products and a Zerostat antistatic instrument. Having used most of the products in the Allsop line, I can recommend the Model 55000 Orbitrac record-cleaning system (\$9.95) and the Model 71300 cassette cleaner (\$7.95) as useful inexpensive gifts. And for those happy few who have digital audio tape players, Allsop even has a DAT cleaning system for \$29.95.



*Nakamichi's SF-10 subsonic filters (\$15 a pair)*

Executive Editor Michael Smolen recommends TDK's HD 30 head demagnetizer for cassette decks (\$29.95). Housed in a cassette shell, it slips right into the loading slot to discharge magnetic buildup. An inexpensive gift that Smolen says will win you gratitude from experienced audiophiles is Audio-Technica's AT-609 headshell wire set (\$11.95), which replaces original turntable-cartridge headshell wiring with a set of four color-coded connectors made of special silver wire and gold plating. Another is a pair of Nakamichi SF-10 subsonic filters (\$15), which operate at line level to remove turntable rumble and other infrasonics.

Editor in Chief Louise Boundas thinks a generous gift for users of Walkman-type portable players would be a pair of the little speakers that plug into the headphone jack, permitting the whole family (or other group) to enjoy the music. She

recommends Sony's SRS-33 mini-speakers (\$69.95) or a pair of Koss KSC/8000 Sound Cells dual-amplified speakers (\$25).

Contributing Editor Louis Meredith suggests that you give a headphone listener a new lease on life with something like Azden's DSR-DM90 Digital Monitors (\$99.95). They have oversized drivers and a gold-plated mini plug with a gold-plated adaptor plug for standard jacks.

Thinking of users of portable equipment, Senior Editor Rebecca Day says it isn't easy to squeeze a standard set of personal headphones into an already-crowded handbag, but the Sony MDR-A15L in-the-ear collapsible headphones (\$24.95) make the job easier. Audio columnist Ian Masters, also thinking of travelers at holiday time, says an appropriate gift for the season would be an extra battery pack or a set of rechargeable batteries for those units that require them.

Stocking stuffers that are always welcome are blank cassettes from such standard manufacturers as BASF, Fuji, Maxell, Memorex, Sony, TDK, and Triad. Michael Smolen says the new 100-minute length, such as the Denon HD-8 100, is particularly useful for recording CD's because it contains an extra five minutes per side.

Technical Editor William Wolfe (also the editor of *Car Stereo Review*) thinks highly of Realistic's Tape Control Center (\$25.95), which permits the use of three tape decks for monitoring, recording, and dubbing. He also recommends the Canton Connect 10 switchbox (\$70), a classy gift that provides similar control over from one to three pairs of speakers.



CONTRIBUTING Editor David Hall, the dean of record reviewers, says stereo reception of public radio has been marginal at best in Castine, Maine, where he now lives. Not wishing to disfigure the roof of his 150-year-old house with an ungainly antenna array, he has tried a number of indoor systems and has gotten the best results with the 17-inch-high, obelisk-shaped Parsec LS-4 (\$59), with its transistorized gallium-arsenide field-effect circuit, which can be fed from any convenient 110-volt AC outlet. He points out that the whole thing can fit easily in a Christmas stocking.



*On CD: The first complete recording of Show Boat. "Love Songs," with Arleen Auger and Dalton Baldwin, and "20 Years of Jethro Tull"*

The traffic manager in our equipment area, Editorial Assistant Barbara Aiken, thinks the Chicago Collection sold by the Chicago Speaker Stand company offers a range of gifts that would be welcome in any hi-fi enthusiast's home. The stands vary in height from 8 to 30 inches and vary correspondingly in price from \$50 to \$110 a pair. Some of them come in wood finishes, others in black vinyl.

A visually oriented person, Assistant Art Director Catherine Fleming thinks most hi-fi installations need more light. She suggests

*Azden's DSR-DM90 Digital Monitor headphones (\$99.95)*





that you consider Custom Woodwork & Design's cabinet lights (\$40-\$47), which do the job effectively and unobtrusively.

To provide someone with stereo in the bedroom without having a cumbersome system, Rebecca Day suggests the Nakamichi AM/FM stereo clock radio. The main unit (\$139) has all the usual clock radio functions plus eight station presets, she says, and the companion module (\$89) can control radio power and alarm and snooze functions.

Along with superior sound quality, compact discs have brought a few problems. They don't fit in shelves designed for LP's, for example, and the hinges on jewel boxes break with maddening regularity. Jazz reviewer Chris Albertson says everybody with a CD collection needs replacement jewel boxes eventually. Recoton sells them in a five-pack, the CD 85, for \$7.99. Recoton also offers ring adaptors



TDK's HD 30 cassette-deck head demagnetizer (\$29.95)

for playing the new 3-inch CD's in standard players: \$3.99 a pair.

In the past we've recommended CD storage boxes from a variety of manufacturers, such as the Napa Valley Box Company (P.O. Box 2538, Rohnert Park, CA 94927) and Oak Tree Industries (147 Columbia Ave., Holland, MI 49423). This year Editor Boundas suggests the CD-Box by Hills Products (P.O. Box 1015, Hillsboro, NH 03244), which will help convert LP shelving without additional carpentry. Each box fits onto an LP shelf neatly, and its two drawers will hold up to sixty CD's. (The similar Hills Tape-Box has four drawers for up to sixty-four audio cassettes.) Prices vary from \$64.95 to \$69.95.

Compact disc collectors argue



Recommended videodiscs from Deutsche Grammophon. The Marriage of Figaro and a BBC documentary about the recording of West Side Story, and an RCA LP, K. T. Oslin's "This Woman"

about the best way to take care of these rather expensive records. Louis Meredith says he uses Signet's SK315 automatic (battery-powered) CD cleaning system, which combines wet and dry cleaning, and he does not hesitate to recommend it to others. A substantial gift for \$60 list.

A less expensive gift for a CD collector, recommended by Managing Editor David Stein, is CD Saver. Stein, who has been collecting CD's since Day One, says he has successfully used this liquid plastic to repair nicks and scratches on dam-

aged CD's. A 1-ounce bottle is \$10.95 postpaid from Buff Stuff, Inc., P.O. Box 43128, Upper Montclair, NJ 07043.



CONSTANT traveler, Music Editor Christie Barter likes the soft-sided Audio Organizers by Coast Manufacturing Company (118 Pearl St., Mount Vernon, NY 10550). They come in a variety of materials and in sizes that will organize fifteen CD's or twelve, twenty-four, or forty-eight audio cassettes. Prices depend on size and material.



Great books: The Billboard Book of Number One Hits, Jazz Giants, and Discovering Great Music



A CD organizer, for example, in chocolate or tan patch leather lists for \$44.95.

Barter also recommends this year's poster for the Juilliard School in New York (\$20 plus \$5 for shipping from Whiteprint Editions, 207 East 32nd St., New York, NY 10016). Designed by graphic artist Milton Glaser, the 2 x 3-foot poster depicts a man at a piano keyboard in a grove of trees. Sales of the poster, commissioned by TDK Electronics, will support Juilliard (a college of music, dance, and drama) and its international student body. A limited number of the posters have been signed by the artist, and these are on sale at the Juilliard bookstore at 144 West 66th Street, New York, NY 10023.



LIKE many STEREO REVIEW readers, our resident tape expert Craig Stark is very much involved with computers. For the computer-literate audiophile Stark recommends a fabulous gift of software for cataloging a record collection. Available in two versions—pop and classical—the program is called "For Record Collectors" (\$59.95 from HomeCraft Computer Products, P.O. Box 974, Tualatin, OR 97002). It permits ten million entries and twenty-two ways of cross referencing. Stark says it has a very good instruction manual and is sim-

ple to use on an IBM PC (and all clones).

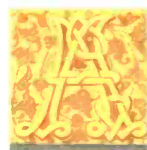
A very original suggestion was put forth by technical contributor Ken Pohlmann, a professor of music engineering at the University of Miami. Pohlmann recommends that we all have our hearing checked periodically, and although audiology clinics may not have printed gift certificates on hand, most will be



*The Signet SK315 automatic CD cleaning system (\$60)*

happy to accept payment in advance if you wish to make a present of a hearing examination to a friend or relative. Simply look under Audiologists in the Yellow Pages and try to avoid the ones that are only dispensers of hearing aids. Price? In Florida, about \$25. Pohlmann says our ears contain no user-serviceable

parts, but if properly diagnosed, many hearing ailments can be treated and sometimes cured.



AND when it comes to using her hearing apparatus for listening to music, Art Director Sue Llewellyn turns to rock. She says a splendid present she would like to give (or get) is Eric Clapton's "Crossroads" (Polydor 835 261), a survey of his entire career from 1963 to the present on six LP's, four cassettes, or four CD's. Michael Smolen recommends a similar package, "20 Years of Jethro Tull" (Chrysalis V3K-41653, three CD's), which contains rare recordings, previously unreleased masters, and essential Tull. For those who like their rock hard and their metal heavy, Editorial Assistant Maryann Saltser recommends "Appetite for Destruction" (Geffen GHS 24148) by Guns 'n' Roses.

Senior Editor William Goldman's choice is Stephen Sondheim's "Into the Woods" (RCA 6796, available in all formats). Although it's sophisticated, Goldman says, it is Sond-



*Discwasher's DiscKit record-care set (\$59.95)*



*The Chicago Speaker Stand line (\$50 to \$110 a pair)*

heim's most accessible show, and its fairy-tale subject matter makes it appropriate for the season and even good for children.

Country-music expert Alanna Nash says any up-to-date country fan who has been good this year should find K. T. Oslin's "That Woman" (RCA 8369) under the tree on Christmas morning. Associate Art Director Loren Falls speaks just as favorably of Roy Orbison's double album "In Dreams: Greatest Hits" (Virgin 90604) and k.d. Lang's "Shadowland" (Sire 25724), which, Loren says, recalls Patsy Cline. These country recordings can be had in all formats.





**'Driver for driver, panel for panel,  
each speaker is half of an exact pair.'**

—Frank Adams, KEF QUALITY ASSURANCE INSPECTOR

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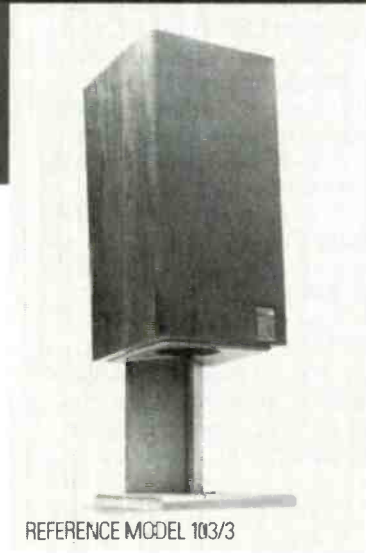
'But frequency response is not the only thing we match. Take a careful

look at the grain on these cabinets. Panel for panel, the real wood veneers on the left speaker perfectly match the right. And no two pairs are exactly the same.

'By the way, it's no use your snapping a picture. You'll never get a photo that does full justice to my wood grain.'

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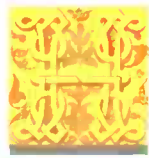
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Engineers*



For a gift that will raise anyone's spirits all year round, critic David Patrick Stearns recommends the new EMI/Angel complete recording of Jerome Kern's *Show Boat* featuring Frederica von Stade, Jerry Hadley, Teresa Stratas, and other soloists with the London Sinfonietta conducted by John McGlinn. He also recommends William Bolcom's Symphony No. 4 (New World 356-1 or 352-2), and if, instead of switches and ashes, you want to give someone the most gloriously awful Christmas record of all time, Stearns suggests Mae West's album "Mae in December" (AEI 2104), which includes such titles as *Santa, Come Up and See Me* and *Put the Loot in the Boot, Santa*.

As a boy our opera critic Robert Ackart wanted nothing for Christmas but records, and today he recommends three two-CD complete

the Bolero from Verdi's *I Vespri Siciliani* alone, and both CD's are generously filled with 70 minutes of music each.



HAVING attended most of the recording sessions for Deutsche Grammophon's new version of Wagner's *Die Walküre* (DG 423 389, four CD's or three cassettes, but no LP's), I've disqualified myself from ever reviewing it, but there's nothing to stop me from recommending it as a gift for anyone who thrills to Wagner's music. The soloists are Hildegard Behrens, Christa Ludwig, Jessye Norman, Gary Lakes, Kurt Moll, and James Morris, with James Levine conducting the Metropolitan Opera Orchestra. All are wonderful.

Our Baroque scholar, harpsichordist Stoddard Lincoln, worries about the fate of the good old light classics as public taste becomes increasingly edified. He suggests that you joyfully hang from your tree the Leroy Anderson CD "Fiddle Faddle" (Vanguard Everyman VDB-10016). Conducted by Maurice Abravanel, it contains such gumdrops as *Syncopated Clock*, *Sandpaper Ballet*, and *The Typewriter*. If exotica is your bag, Lincoln recommends Ketelbey's "In a Monastery Garden" (Angel CDC-47806-2), which will take you to Persia, Dresden, China, and Egypt.

Louise Boundas says there is something beautiful for everyone in "Love Songs" (Delos D/CD 3029), a CD-only recital of great love songs from around the world performed by Dalton Baldwin and soprano Arleen Augér, who was the soloist at the royal wedding of Prince Andrew and Sarah Ferguson.



Canton's Connect 10 switchbox for speakers (\$70)

It would not be Christmas at Rebecca Day's house without some old favorites (now on CD): Mitch Miller's "Holiday Sing-Along" (Columbia CK 38297), "A Charlie Brown Christmas" by the Vince Guaraldi Trio (Fantasy FCD 697-8431), and "Christmas with the Chipmunks" (Capitol ECM-48378).

Like candy and flowers, books are traditional gift items, and Louise Boundas recommends the very handsome *Jazz Giants, A Visual Retrospective* compiled by photographer K. Abé (Billboard Books). If you can't find it in your bookstore, you can order it directly: Send \$60 plus \$3 postage and handling to Billboard Books, Dept. DRWD 1040, P.O. Box 2013, Lakewood, NJ 08701. Another Billboard book that's easier to find in your local bookstore is the revised edition of Fred Bronson's *The Billboard Book of Number One Hits* (\$16.95).



SINCE our regular contributors are too modest to recommend that you consider buying their own books as gifts, the editors recommend the following: Chris Albertson's biography of Bessie Smith, *Bessie*, now in paperback (Stein and Day, \$8.95); Roy Hemming's *Discovering Great Music*, an introduction to the best classical music on LP, tape, and CD (Newmarket Press, \$19.95); Herbert Kupferberg's updated paperback edition of *The Book of Classical Music Lists*, an amusing collection of facts, figures, and trivia (Penguin, \$8.95); Alanna Nash's *Behind Closed Doors*, interviews with great country-music performers (Knopf, \$14.95); *The Great American Popular Singers*, a quite readable, yet serious, treatment of this subject by London Editor Henry Pleasants, now in paperback (Simon and Schuster, \$9.95); *Principles of Digital Audio*, which explains



Koss KSC/8000 Sound Cells (\$25) for personal portables

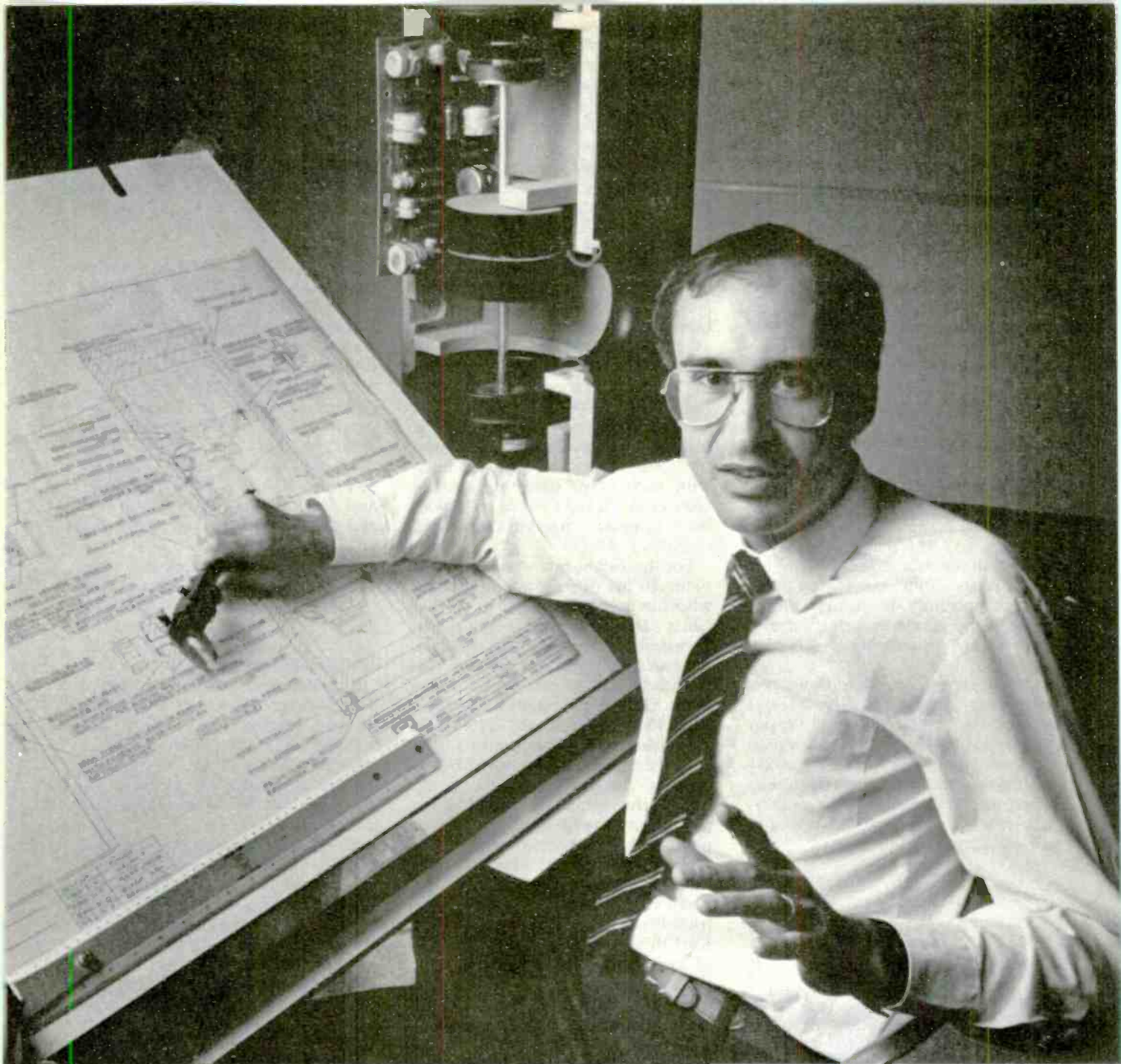
opera sets for gift-giving: Rossini's warm and witty *Il viaggio a Reims* (Deutsche Grammophon 415 498-2) with Ricciarelli, Gasdia, Araiza, and Nucci conducted by Claudio Abbado; the remastered 1959 recording of Verdi's *Macbeth* (RCA 4516-2) with blood-chilling performances by Leonard Warren and Leonie Rysanek and passionate conducting by Erich Leinsdorf; and Tchaikovsky's richly melodic *Eugene Onegin* (London 417 423-2) with Weikl, Kubiak, Ghiaurov, and others under Sir Georg Solti. Consider the recipient's tastes, Ackart advises, and take your pick.

Editorial Assistant Rocco Mattera recommends two CD compilations of arias recorded by Beverly Sills in her prime between 1968 and 1974. They are "The Art of Beverly Sills" (Angel CDC-47183-2) and "The Art of Beverly Sills, Album 2" (Angel CDC-47332-2). Mattera says the first would be worth its price for the soprano's scintillating rendition of



Sony SRS-33 minispeakers (\$69.95) plug into Walkman phone jacks





**'We can't break the laws of physics, only bend them.'**

*— Mike Sough, KEF CHIEF DEVELOPMENT ENGINEER*

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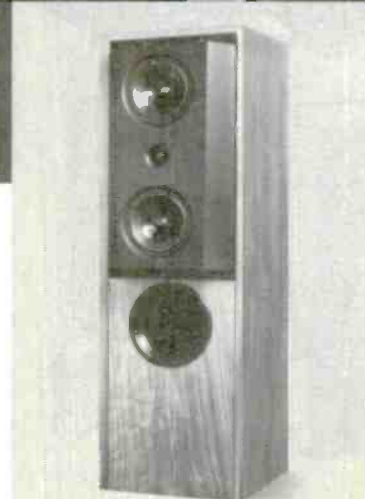
'We use two separate chambers

for bass loading: one damps back radiation, while the other forms an efficient resonant cavity with a tuned port. This "coupled-cavity" is the first reasonably-sized enclosure to combine outstanding bass extension with high efficiency.

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the technology behind the CD and other digital applications in sound reproduction, by Ken C. Pohlmann (Howard Sams, \$19.95); and the long-awaited collection of Charles Rodrigues cartoons from this magazine, *Total Harmonic Distortion* (Perfectbound Press, \$7.95). To order the Rodrigues book, send \$7.95 per copy plus \$1.50 per order for shipping to Perfectbound Press, 1120 Avenue of the Americas, Suite 4118, New York, NY 10036. New York State residents add 65¢ sales tax per copy.



VERY readable guide to buying and using hi-fi equipment is the choice of Senior Editor Robert Ankosko, who recommends *The New Sound of Stereo* by Ivan Berger and Hans Fantel (New American Library, \$12.95). Berger and Fantel are both former STEREO REVIEW columnists. Their book (and most others currently in print) can be ordered by phone and charged to a credit card by dialing 1-800-ALL BOOK.

Classical critic Richard Freed recommends *Perfect Pitch* by Nicolas Slonimsky (Oxford University Press, \$21.95), entertaining reminiscences of over nine decades of activity in the world of music involving such figures as Serge Koussevitzky, Charles Ives, Henry Cowell—and Frank Zappa.

Coast Audio Organizers  
for carrying, Hills CD-Box  
and Tape-Box for storing



Despite its somewhat gloomy title, critic Phyl Garland recommends *The Death of Rhythm and Blues* by Nelson George (Pantheon, \$18.95). Linking culture and commerce, it traces the rise and fall of a great form of black music, packing a lot of history into a small space.

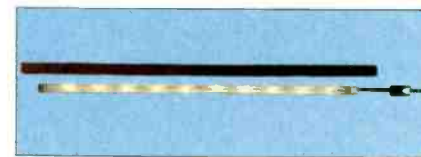
The Country Calendar for 1989, published by the Country Music Foundation (4 Music Square East, Nashville, TN 37203), contains album-size photos of such performers as the Judds, Ricky Skaggs, and Randy Travis and a lot of interesting facts about the history of country music. Alanna Nash says it is a great gift for only \$8.95 plus \$2 postage. You should also request the CMF Christmas catalog, filled with such other tempting gifts as Goo Goo Clusters made of chocolate, peanuts, marshmallow, and caramel.

For the audiophile who has added video to his hi-fi installation—and who has not yet bought a VCR?—Chris Albertson recommends a videocassette rewriter, which will save time and wear and tear on your video heads. Many companies make them. Chris recommends Ambico's VO 757 VHS Rewinder (\$49.95).

For the videodisc collector Christie Barter suggests the new 12-inch classical discs just released by the PolyGram labels. He recommends particularly the Deutsche Grammophon release of Mozart's *The Marriage of Figaro* (DG 072 503-1) with Maria Ewing, Mirella Freni, Kiri Te Kanawa, Hermann Prey, and Dietrich Fischer-Dieskau conducted by Karl Böhm, which takes three sides of two discs. No list price. Not cheap. A single-disc choice is the BBC documentary on the recording of Bernstein's *West Side Story* (DG 072-206-1) with Te Kanawa, Tatiana Troyanos, Marilyn Horne, and José Carreras.

Rock critic Steve Simels, also a videodisc fan and movie buff, says his consumerismo has been most inflamed by the Criterion videodisc of Orson Welles's classic film *The Magnificent Ambersons*. In addition to gorgeous picture quality, it has twelve chapters of supplementary material. Simels says, "It's expensive—\$99.95 list—but videodiscs don't come any more impressive."

But wait a minute. The Christmas and Chanukah holidays are really for kids, right? Last year Sony introduced a very successful line of real electronics—personal stereos, wal-



Custom Woodwork & Design's  
cabinet light (\$40-\$47)

kie-talkies, and so forth—styled specifically for children and called My First Sony. I gave one to some nephews who were wild about it. Among the new products added to the line this year is the D-5000, a portable compact-disc player that Assistant Editor Mark Lazarus says would be an excellent present for a child, but only one who has been very, very good because it lists for \$199.95. It has a built-in speaker and plays standard-size 5-inch CD's and the new, little CD-3's without an adaptor.



ELIEVE it or not, there are CD's of some children's records, especially by A&M's million-selling star Raffi, who has been called "the Springsteen of music for kids." My favorite recordings for young listeners are the ones made by Joe Scroggs, such as "Traffic Jams," a collection of songs for traveling in the car including his greatest hit, *Goo Goo Ga Ga*, which kids find hilarious.

My great-niece Kate O'Hare, age five, of Virginia Beach, Virginia, has protested my statement (April 1988) that red-blooded American boys really like Scroggs's work. She says that American girls also give Scroggs perfect 10's for "Traffic Jams," "Abracadabra," and his other albums, all of which are available on LP or cassette for \$9.95 each plus \$1.25 for shipping from Educational Graphics Press, P.O. Box 180476, Austin, TX 78716.

Among Kate's presents this year will be Scroggs's brand-new recording, "Even Trolls Have Moms" (who make them put their dirty jeans in the clothes hamper before they go out to lurk under bridges). I like it a whole lot, and I think Kate will too. I've tried to figure out why parents (and great-uncles) listen to Scroggs tapes even when the children are not around. The answer is in the Educational Graphics catalog, which says: "Joe Scroggs sings to the child in us all."

Happy Holidays! God bless us every one! □





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PHILIPS

Classics

Pavarotti Portrait/Vivianne Moos • © PolyGram Records



*Stereo Review's critics choose the outstanding current releases*

## TOM WAITS HITS THE "BIG TIME"

**T**OM WAITS is a strange bird, and he's getting stranger as he blurs the line between aural and visual formats. His new film, *Big Time*, is described as "a musictheatrical experience played in dream time," which is another way of saying it is a concert film. It is more amorphous than that, however. There are songs in the film that appear in different versions in the album of the same name, newly released on Island, and songs in the album that don't turn up in the film. Tracks were culled from performances in five cities around the world. Most of the songs were recorded live, direct to twenty-four-track. But some were cut on a lowly cassette machine and sound like it—on purpose, because Waits's guttersnipe characters are as out of place in digital trappings as they would be in three-piece suits. To confuse matters further, there's even a studio cut, *Falling Down*, employing an entirely different band. Finally, the CD is half again as long as the LP and cassette, with eighteen songs versus twelve.

Yes, reality has different vantage points, and different listeners' impressions of "Big Time" will vary as widely as they would in a concert hall or club. This may be the closest anyone's come to re-creating a live setting, warts and all, in a frozen medium. You might even find yourself shouting out requests.

Drawing from his loose record trilogy of the past five years—"Swordfishtrombone," "Rain Dogs," and "Franks Wild Years"—in "Big Time" Waits takes his listeners on a guided tour of mean streets, back alleys, blind alleys, and the minds of madmen. His characters are given to bouts of apoplexy as a response to the real world and

their niches in it—generally in an aimless little subcultural eddy where they fight for day-to-day survival on the streets—mixed in with expressions of regret for what might have been. There's black humor to burn, as when Waits admonishes the devil in *Way Down in the Hole*, and the somewhat bitter, acrid taste of life lived in a state of limbo fills the air like bus fumes.

Waits's fatalism is expressed most fervidly in *Strange Weather*, a moody cabaret song for saxophone, banjo, and accordion that was previously recorded by Mariane Faithfull for her album of the same name. Waits squeezes out the words in a guttural rasp, giving special emphasis to the line, "All over the world strangers talk only about the weather." But the central metaphor of Waits's oeuvre is probably that of *Rain Dogs*—to wit, that when it rains, the scent trail that a wandering dog would follow to guide him back home is lost and washed away. Something like that goes on inside men and women in a hostile world that makes increasingly less sense.

From lurching dissonance to

doleful threnodies, Waits's band goes with the flow of his difficult music, which is as unpredictable as the staggering steps of a drunk. As with the music of Captain Beefheart, there is a discernible inner logic and an innate sense of rhythm that mimics the complexity of living—breathing in and breathing out, up one minute and down the next. To call "Big Time" compelling only hints at Waits's achievement. Let's just say that it's the best collection of short stories anyone's recorded in years. It tastes of real life—not always a pleasant taste, but a vital one. *Parke Puterbaugh*

**TOM WAITS:** *Big Time*. Tom Waits (vocals and keyboards); instrumental accompaniment. *16 Shells from a Thirty-Ought-Six*; *Red Shoes*; *Underground* (CD only); *Cold Cold Ground*; *Straight to the Top* (CD only); *Yesterday Is Here* (CD only); *Way Down in the Hole*; *Falling Down*; *Strange Weather*; *Big Black Maria*; *Rain Dogs*; *Train Song*; *Johnsburg, Illinois* (CD only); *Ruby's Arms* (CD only); *Telephone Call from Istanbul*; *Clap Hands* (CD only); *Gun Street Girl*; *Time*. ISLAND 90987-1, © 90987-4, © 90987-2 (68 min).

*Tom Waits: a guided tour of mean streets and blind alleys*



DANIEL HAINES/ISLAND RECORDS

## BERNSTEIN'S NEW MAHLER SECOND

**T**AKEN from concert performances in Lincoln Center's Avery Fisher Hall in April 1987, Leonard Bernstein's new recording of Mahler's *Resurrection* Symphony is in much the same idiosyncratically expansive vein as his fabled second recording of the work, made at Ely Cathedral, England, in 1974 and issued on CBS. The major advantages of the remake, the latest in-



Leonard Bernstein: ecstatic

stallment in Bernstein's Mahler cycle for Deutsche Grammophon, are first-rate sound and good balances throughout.

Another conductor who took an expansive view of the *Resurrection* Symphony was Bruno Walter, Mahler's disciple and friend, but his recording of it clocks in at a little over seventy-nine minutes, compared with more than ninety-three minutes in Bernstein's new one. The main points of difference are in the *Ländler*-style second movement, where Bernstein's slow pacing deprives the music of much of its dancelike character, and in the apocalyptic finale.

Bernstein's reading of the opening movement, "*Totenfeier*" ("Celebration of Death"), is ultradramatic, and the scherzo is full of savage iron-

ny. In the finale, both here and in the earlier Ely Cathedral recording, he has come as close as possible to a realization in sound of what Mahler must have heard in his head when he conceived this musical counterpart to Michelangelo's *The Last Judgment*. The awesome pauses, hushed pianissimos, and ecstatic choral outbursts are bound to raise goose pimples.

The New York Philharmonic gives its all from start to finish, and though the Edinburgh Festival Chorus in the Ely recording may have a slight edge in sustaining power at the close of the work, the Westminster Choir surely does itself proud. Janet Baker's rendition of the "*Urlicht*" solo in the fifth movement in the earlier version remains uniquely rapt, but Christa Ludwig's performance here has a lovely intensity of its own. In the finale soprano Barbara Hendricks joins Ludwig to superb effect.

Bernstein's interpretation of the Mahler Second may not be to all tastes, but I urge you to experience it in this excellent new recording.

David Hall

**MAHLER: *Symphony No. 2, in C Minor* ("*Resurrection*").** Barbara Hendricks (soprano); Christa Ludwig (mezzo-soprano); Westminster Choir; New York Philharmonic, Leonard Bernstein cond. DEUTSCHE GRAMMOPHON 423 395-1 two LP's, © 423 395-4 two cassettes, © 423 395-2 two CD's (93 min).

## K. T. OSLIN: SMART AND SEXY

**W**ITH the release of K. T. Oslin's second album, the hit-laden "*This Woman*," music reviewers have sprinted to their typewriters to herald Oslin as *the* country story of 1988. For good reason. First, the title song of her 1987 disc debut, "*'80's Ladies*," established K. T. (for Kay Toinette) as an important new voice of the baby-boom generation, a generation often disillusioned in the life-tug between love and career, cynicism and ro-



K. T. Oslin: exhilarating

mance. That album entered the *Billboard* country charts at No. 15, higher than any other new album by a female artist. A Grammy soon followed, along with five Country Music Association award nominations, the most for any one performer. The word was out that her follow-up record, containing songs of her own and songs co-written with veteran tunesmiths Jerry Gillespie and Rory Michael Bourke, would be the ultimate Single Woman's Lament, an autobiographical moan that would nonetheless nudge the psyches of millions of women and hold both sexes spellbound.

What the news didn't say is that "*This Woman*," easily the most captivating country album of the year, is also exhilarating, funny, straight-ahead, smart, and sexy, a shattering plethora of searing emotion and full-scale musical exuberance. The program, spiked by Oslin's earthy humor and a rambling Texas accent—striking as a side-winder—is a sparkling collage of country, blues, and rock in which the sagacious and witty Oslin admits the character flaws and yearnings that gnaw at the Me Generation in middle age.

In a voice that throbs with emotion and boasts of new confidence in the upper register, Oslin comes on sassy one minute, plangent the next, dipping into bluesy, Bonnie Raitt-like vocal turns in *Where Is a Woman to Go* and drawing on her Broadway experience (she was in



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## BEST RECORDINGS OF THE MONTH

the 1967 cast of *Hello, Dolly!*) for confessional ballads like *Jealous*.

By the record's end, Oslin emerges as a wry clown trying to maintain her balance in a topsy-turvy world. She is, in a sense, Everywoman and, down deep, Everyman, anxious to slip a bit of reality into the pretense of everyday life. She is also, as anyone fortunate enough to hear her knows, solid gold. With "This Woman" offered in barter, K. T. Oslin, an example to late bloomers everywhere, is a commodity only improving with age. *Alanna Nash*

**K. T. OSLIN:** *This Woman*. K. T. Oslin (vocals, keyboards); vocal and instrumental accompaniment. *This Woman*; *Money*; *Round the Clock Lovin'*; *Where Is a Woman to Go*; *Hold Me*; *Hey Bobby*; *She Don't Talk Like Us No More* (CD only); *Jealous*; *Didn't Expect It to Go Down This Way*; *Truly Blue*. RCA 8369-1-R, © 8369-4-R, © 8369-2-R (42 min).

### JORGE BOLET REDISCOVERS RACHMANINOFF

IMAGINE a work of Rachmaninoff's, more or less "hidden in plain view" under the title *Variations on a Theme of Chopin*, qualifying as one of the year's major "discoveries." His *Variations on a Theme of Corelli*, of course, is a fairly familiar work from the same rich, final period that produced the masterly set of concerted variations on a Paganini theme that he chose to label a rhapsody. The *Chopin Variations*, a much earlier work, is very seldom performed. I can remember three recordings of it on LP, none by a celebrity pianist or on a major label.

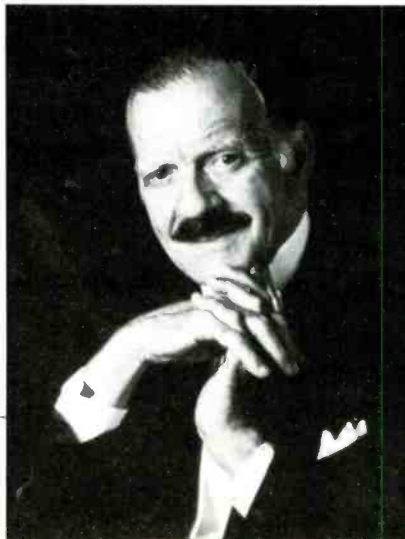
Those two conditions are met now in the *Chopin Variations*' first appearance on compact disc, in a superb performance by Jorge Bolet on London that makes the strongest case for regarding the work as a neglected masterpiece. It is a half-hour-long chain of twenty-one variations on Chopin's *Prelude in C Minor*, Op. 28, No. 20. Rachmaninoff composed it in 1902-1903, not

long after the Second Piano Concerto. The same sort of open-hearted lyricism prevails, and there are even near-echoes of the concerto in one or two of the variations, along with the inevitable allusions to the *Dies irae*. It must be fiendishly difficult to play, and its very dimensions give it a sort of inborn tendency to sprawl, but Bolet is characteristically in charge, not only in a technical way but with an unflinching sense of structural logic and balance. One might call it a *clarifying* sense. The effect, in any event, is to eliminate any question of difficulty from the listener's awareness and to let the contrasting moods and colors stream out with a seamless momentum.

Filling out the disc are eight short pieces, including five of Rachmaninoff's own preludes. Bolet's fresh approach makes these "discoveries" of a sort (or "rediscoveries") as well. A notable lapse in the packaging of the release is the failure to provide indexing or separate tracks for the individual sections of the half-hour variations, but that cannot lessen the pleasure of Bolet's performances, which London has enhanced with some of the most realistic piano sound yet captured in a recording. *Richard Freed*

**RACHMANINOFF:** *Variations on a Theme of Chopin, Op. 22. Preludes: C-sharp Minor, Op. 3, No. 2; F Major, Op. 32, No. 7; G-sharp Minor, Op. 32, No. 12; G Minor, Op. 23, No. 5; G-flat Major, Op. 23, No. 10. Mélodie, Op. 3, No. 3.* KREISLER (arr. Rachmaninoff): *Liebesleid; Liebesfreud*. Jorge Bolet (piano). LONDON ©421 061-4, ©421 061-2 (64 min).

*Jorge Bolet: seamless momentum.*



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□ **CARMEN MCRAE:** *The Great American Songbook*. ATLANTIC 2904-2. Recorded live at Donte's, Los Angeles. "At her very best" (November 1972).

#### CLASSICAL

□ **BELLINI:** *Norma*. Callas, Stignani; Gui. LEGATO LCD-130-2 (two CD's). The 1952 Covent Garden production in which Maria Callas made her first London appearances, with Joan Sutherland in a minor role, one of her first with the company.

□ **BERLIOZ:** *Benvenuto Cellini*. Gedda; C. Davis. PHILIPS 416 955-2 (three CD's). "A striking achievement" (December 1972).

□ **LISZT:** *Piano Sonata in B Minor; Three Paraphrases*. Barenboim. ERATO ECD 75477. Recorded in Munich in 1985.

□ **STRAUSS:** *An Alpine Symphony; Don Juan; Also Sprach Zarathustra; Festival Prelude; Till Eulenspiegel; Dance of the Seven Veils; Ein Heldenleben; Death and Transfiguration*. Böhm. DG 423 488-2 (three CD's). Landmark performances dating from 1957 to 1972.

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*Discs and tapes reviewed by  
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and Steve Simels*

**JOHN ANDERSON: 10.** John Anderson (vocals); vocal and instrumental accompaniment. *Down in the Orange Grove; If It Ain't Broke Don't Fix It; The Ballad of Zero and the Tramp; Lower on the Hog; Before I Met You; Light at the End of the Tunnel;* and four others. MCA MCA-42218, © MCAC-42218, © MCAD-42218 (31 min).

Performance: *Solid*  
Recording: *Very good*

John Anderson, who has been an erratic performer on record for several years now, checks in with a strong, varied program in "10," his second album on MCA with veteran producer Jimmy Bowen. The songs, eight of which Anderson co-wrote—with Tony Stampley (Joe's son), Bernie Taupin, Larry Cordle, and Anderson's long-time collaborator Lionel A. Delmore—range from semitropical harangues on the working man's plight (*Lower on the Hog*) to celebrations of children (*Just to Hold a Little Hand*) and love (*Before I Met You*). But Anderson, who has tempered his Lefty Frizzell vocal style somewhat, shines brightest in two originals. *Down in the Orange Grove*, one of his bouncy, slice-of-Southern-life sagas, and *The Ballad of Zero and the Tramp*, a pathetic tale of two degenerates who hold up a bank to make a name for themselves. The album suffers a bit from the preponderance of slower-tempo selections, but the occasional western-swing and rhythm numbers brighten up the mood. All in all, "10" is decidedly worth taking home. *A.N.*

**BON JOVI: *New Jersey.*** Bon Jovi (vocals and instrumentals); other musicians. *Lay Your Hands on Me; Bad Medicine; Born to Be My Baby; Living in Sin; Blood on Blood;* and seven others. MERCURY 836 345-1, © 836 345-4, © 836 345-2 (57 min).

Performance: *The usual*  
Recording: *Good*

No doubt about it. Bon Jovi found the magic formula with its last album,

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LITTLE FEAT



**F**IRST a confession: I believe Little Feat was the greatest American rock-and-roll band of all time. No other group ever summed up American rock music, with all its myriad influences and variations, as well as Little Feat, and no other group ever rocked the melting pot as hard. When you listened to them, you heard the pumping rhythm-and-blues of New Orleans, the plaintive country sound of Austin, Texas, the soaring blues of the Mississippi Delta, the pounding soul of Detroit, and the electric cool of Los Angeles. When founder Lowell George disbanded Little Feat in 1979 and then died during a subsequent solo tour, it was more than the end of a great band; it seemed to be the end of an era.

Now the surviving members of Little Feat have reunited, with a new vocalist, Craig Fuller, formerly of Pure Prairie League, and a new guitarist, session man Fred Tackett. They've recorded a strong new album, "Let It Roll," that manages to keep the spirit of the original band without simply repeating what's come before. "Let It Roll" has many of the musical trademarks of the old Little Feat—the bump and glide of

the rhythm section, the jackhammer piano, the searing bottleneck guitar, the sweet and growly vocals. *Hate to Lose Your Lovin'* is classic, syncopated Little Feat funk. *Cajun Girl* is a blistering zydeco run-down. *Hangin' On to the Good Times* is a sentimental reflection, etched with country sadness. And there's straightforward, plain-spoken rock as well.

Of course, the memory of Lowell George remains, and comparisons must be made. Nowhere in this album can you find the humor, or the sarcasm, or the danger of his music. But "Let It Roll" must be judged on its own terms, and, as such, it's a wonderful new start. The current Little Feat keeps faith with its past while offering great hope for its future. *Ron Givens*

**LITTLE FEAT: *Let It Roll.*** Little Feat (vocals and instrumentals). *Hate to Lose Your Lovin'; One Clear Moment; Cajun Girl; Hangin' On to the Good Times; Listen to Your Heart; Let It Roll; Long Time Till I Get Over You; Business As Usual; Changin' Luck; Voices on the Wind.* WARNER BROS. 25750-1, © 25750-4, © 25750-2 (50 min).

JIM SIEGA/WARNER BROS. RECORDS

"Slippery When Wet." In the two years or so since its release, "Slippery" has sold almost nine million copies in the U.S. and more than seventeen million around the world. Bon Jovi manages to be nice *and* nasty—a soft-core kind of hard rock that can appeal to teenagers of either sex. Paul Revere & the Raiders meet Deep Purple.

The band's new album, "New Jersey," begins where "Slippery When Wet" left off. The songs have strong melodies, catchy hooks, and springy rhythms. Even if the lyrics aren't particularly memorable or insightful, the song titles are snappy. The combination is entertaining, if not particularly enlightening or enriching, and far better than the average soundtrack for an MTV video.

*Lay Your Hands on Me* and *Bad Medicine* lead off the record with an arena-rock double feature: gutsy thumpers with sweet vocals. Other numbers feature plain-vanilla rock (the Springsteenish *Born to Be My Baby*) and whumping metal (the Van Halen-like *Homebound Train*). Even if the slow songs are a little on the sappy, juvenile side, *Living in Sin* and *I'll Be There for You* are built around multiple-Platinum riffs.

The band gives its best throughout. Jon Bon Jovi sings as if he means it, and Richie Sambora is an expressive, if restrained, guitarist. Where they lead, the rest of the group follows energetically. So will millions of fans around the world. R.G.

**JIMMY BUFFETT:** *Hot Water.* Jimmy Buffett (vocals, guitar); vocal and

instrumental accompaniment. *Home-made Music; Baby's Gone Shoppin'; Bring Back the Magic; My Barracuda; L'Air de la Louisiane;* and six others. MCA MCA-42093, © MCAC-42093, © MCAD-42093 (47 min).

Performance: *Good variety*  
Recording: *Good*

Few artists would be expected to extend their stylistic range in their eighteenth album, but in "Hot Water" Jimmy Buffett is all over the map—and not just the state of Florida. Working with Memphis soul stalwarts Steve Cropper and Donald "Duck" Dunn (both ex-MG's), he flirts with the Stax-Volt sound in *Baby's Gone Shoppin'*, sings *en français* in the Cajun rondelet *L'Air de la Louisiane*, and waxes poetic in the ambitious, suite-like *Prince of Tides*.

However varied the musical settings, though, they remain tethered to Buffett's equatorial outlook, best expressed by the lines, "I'm king, king of somewhere hot/King like every man should be." After playing musical chairs on side one and opening the second with a cocktail-jazz horror called *Pre-You*, he reverts to form for the rest of the album—yearning for the islands, looking for a *Great Heart*, lusting for a *Smart Woman (in a Real Short Skirt)*, and, finally, pursuing an introspective tangent inspired by Mark Twain's line, "Be good and you'll be lonesome."

A passel of guest musicians—including the Neville Brothers, James Taylor, Steve Winwood, and Rita Coolidge—hop aboard for a spin around Buffett's bay of plenty. In this tropical fantasy world, the days are golden, the nights

are long, the margaritas are served in goldfish bowls, the women are willowy and willing—and Buffett is the troubadour who paints this largely untroubled paradise in words and music.

Parke Puterbaugh

**ERIC BURDON:** *I Used to Be an Animal.* Eric Burdon (vocals); vocal and instrumental accompaniment. *I Used to Be an Animal; The Dream; American Dreams; Going Back to Memphis; Leo's Place;* and four others. STRIPED HORSE SHL 5006, © SHK 5006, © SHCD 5006 (35 min).

Performance: *Animal crackers*  
Recording: *Good*

Eric Burdon, former lead singer of the Animals, wrote up his riotous rock-star memoirs in a book called *I Used to Be an Animal, but I'm Alright Now*. The first half of that title was appropriated for his new album on the Striped Horse label. If you've ever wondered what it might be like hearing the gruff-voiced Burdon rapping (yes, *rapping*) about his long-defunct British Invasion band over beatbox and Vegas-funk accompaniment, here's your answer. Recorded in Malibu (yes, *Malibu*), this album is one step removed from Wild Man Fisher-style senility. When Burdon isn't raving about life on the highway ("We out on the road who live in motels/We all live a different kind of life"), he's sermonizing about life "out on the streets." The rapping is bad enough, but Burdon hits rock bottom with the shameless U2-isms of *I Will Be with You Again*. His singing voice still bites, but this Animal's barking up the wrong tree. Parke Puterbaugh

**KIM CARNES:** *View from the House.* Kim Carnes (vocals, synthesizer); vocal and instrumental accompaniment. *Brass & Batons; Just to Spend Tonight with You; Heartbreak Radio; Crazy in Love; If You Don't Want My Love; Fantastic Fire of Love;* and four others. MCA MCA-42200, © MCAC-42200, © MCAD-42200 (39 min).

Performance: *Likable*  
Recording: *Very good*

As with everybody else whose pop career eventually falls off, Kim Carnes knew it was time to go to Nashville to rejuvenate her hit status. But unlike a Nicolette Larsen, say, or a Bill Medley, Carnes at least has some legitimacy there—in 1980, she and old friend Kenny Rogers rode *Don't Fall in Love with a Dreamer* to the top five on the country charts. And as a songwriter, Carnes has watched untold numbers of Nashville acts take her tunes to No. 1 as late as this year, when Rogers and Ronnie Milsap scored with *Make No Mistake (She's Mine)*.

"View from the House," which Carnes co-produced with the very busy Jimmy Bowen, isn't really a country record, of course, but the kind of good-

*Bon Jovi: a soft-core kind of hard rock*





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time, feel-right pop that fits into almost any format these days. Carnes has successfully mixed her own, sometimes opaque, songs (*Blood from the Bandit, Brass & Batons*) with two winners from the folksy pen of John Prine, a cover of Johnny Otis's funky *Willie and the Hand Jive*, and a hard rocker about a heart stealer, *Heartbreak Radio*. Somehow it all works, and would have even if Carnes hadn't recruited a star roster of accomplices—Lyle Lovett, Vince Gill, and Steve Wariner on background vocals and Bruce Hornsby and John Casella (of John Cougar Mellencamp's band) on accordion. The pace never slackens, the program remains interesting throughout, and Carnes's "so scratchy it's painful" voice seems to have had the rougher edges buffed away. "View from the House" is quirky, jumpy, soothing, and—not a little bit surprising—a blast. *A.N.*

**PETER CETERA: *One More Story.*** Peter Cetera (vocals); vocal and instrumental accompaniment. *Best of Times; One Good Woman; Heaven Help This Lonely Man; Save Me; You Never Listen to Me; Scheherazade;* and four others. WARNER BROS. 25704-1, © 25704-4, © 25704-2 (47 min).

Performance: *Typical*  
Recording: *Very good*

You've heard Peter Cetera, on his own and with Chicago. You don't need me to tell you what he sounds like or whether you should like him. You already know by now. "One More Story" is typical Cetera pop—the equivalent of a Brooks Brothers suit. It has neatly tailored arrangements. It captures a conservative musical personality without drawing much attention to itself. Cetera is a fluid, restrained singer who never really hauls off and belts a tune. Some of the music in this album

Robert Cray: in fine form



sounds like Toto, and other tracks sound a little less insistent. It's a nice record, but not a bit surprising. *R.G.*

**TOMMY CONWELL AND THE YOUNG RUMBLERS: *Rumble.*** Tommy Conwell and the Young Rumlbers (vocals and instrumentals). *I'm Not Your Man; Half a Heart; Workout; Everything They Say Is True; Gonna Breakdown; Tell Me What You Want Me to Be;* and four others. COLUMBIA FC 44186, © FCT 44186, © CK 44186 (41 min).

Performance: *Earnest*  
Recording: *Good*

I wanted to like "Rumble" more than I do. The band sounds good—crisp rhythms and stinging, fluid guitar leads. The songs are nice—mostly co-written by Tommy Conwell with such collaborators as Rob Hyman and Eric Bazilian (of the Hooters) and Jules Shear. Rarely, however, does the music catch fire. Conwell is an uneven singer. He seems hamstrung by the limits of his vocal range, and his phrasing is often awkward. This uncertainty doesn't mesh with the confident, surging instrumental sound of the album. I hope his next one fits him better. *R.G.*

**THE ROBERT CRAY BAND: *Don't Be Afraid of the Dark.*** Robert Cray (vocals, guitars); instrumental accompaniment. *Don't You Even Care?; Your Secret's Safe with Me; I Can't Go Home; Night Patrol; Acting This Way;* and five others. MERCURY 834 923-1, © 834 923-4, © 834 923-2 (42 min).

Performance: *Polished*  
Recording: *Clean*

"There's so many reasons a man will commit a crime/Frustration's gnawing at him, twisting his mind/He's ticking like a bomb that could go off at any time." So muses Robert Cray in *Across the Line*, one of ten case studies of the war between the sexes in "Don't Be Afraid of the Dark." It is an album filled with infidelity, drinking, drugs, money grubbing, voyeurism, blackmail, bad faith, and dark surprises. Near the end, Cray sings about leaving a lousy relationship in a song called *At Last*, and you can't help but share his relief.

Musically, Cray and his band don't break a sweat, keeping a stylish, pop-flavored groove going over ready-made blues and soul changes. The mix is roomy, allowing Cray to insert his skittering, round-toned guitar solos without having to compete for space. He's in fine form vocally, playing it cool and controlled but turning on the passion when the mood calls for it, as when his voice rises to an anguished shout in *Can't Go Home*.

In places, "Don't Be Afraid of the Dark" is a little too cautious. *Your Secret's Safe with Me* and *Laugh Out Loud* are flat-out dull, and Cray skirts boredom elsewhere. The sticker on the



Kim Carnes: a blast

front cover—"Place in Pop/Rock Section"—doesn't help matters, implying that the album has been whipped to a homogenized froth for mass consumption. While it is true that Cray's music doesn't take the chances his characters do, listen closely: There's a fire burning down below. *Parke Puterbaugh*

**CROWDED HOUSE: *Temple of Low Men.*** Crowded House (vocals and instrumentals); vocal and instrumental accompaniment. *I Feel Possessed; Into Temptation; When You Come; Love This Life; In the Lowlands; Better Be Home Soon;* and four others. CAPITOL C1-48763, © C4-48763, © C2-48763 (39 min).

Performance: *Schizoid*  
Recording: *Very good*

Surrealism has seldom been as catchy as it is in "Temple of Low Men," a dizzying album to experience. As in the first Crowded House album, songwriter Neil Finn was strongly influenced here by the music of the Beatles—not just the sweeter McCartney side, but the harsher Lennon side, too. "Temple of Low Men" has much of the charm of the Fab Four in their early days. *Into Temptation*, for example, sounds as if it could have come from "Rubber Soul." Derivative as this may seem, and it is, Crowded House makes beautiful, easily digestible music.

The lyrics, however, are often impenetrable. Here is the first verse of *Kill Eye*: "Kill eye tumbling come out of the sky/Kill eye a fiery retreat from the stars/Kill eye he came clambering over the wall/Kill eye halfway to hell and beyond." Now, you may argue that "kill eye" symbolizes violence, or the impulse behind violence. Or you may argue something else. Or you may choose to ignore the symbolism and



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simply enjoy the melody. Other songs in "Temple of Low Men" have lyrics that are a little more transparent, or, perhaps, translucent, such as *When You Come*, a quiet, oblique song about love-making—at least, I think that's what it's about.

On a visceral level, you can listen to this music and have a good time. You can memorize the catch phrases of each chorus and sing along for fun. You can even try, if you're ambitious, to puzzle through Finn's verbal thicket. No matter which approach you choose, you will have a good time. *R.G.*

**BOB DYLAN:** *Down in the Groove.* Bob Dylan (vocals, guitar); vocal and instrumental accompaniment. *Let's Stick Together; When Did You Leave Heaven?; Death Is Not the End; Had a Dream About You, Baby;* and six others. COLUMBIA OC 40957, © OCT 40957, © CK 40957 (32 min).

Performance: *Dylan's garage sale*  
Recording: *Erratic*

A ten-track hodgepodge stitched together from half a dozen sessions dating back to 1983, "Down in the Groove" finds Bob Dylan fumbling for direction like a lost motorist without a road map. He delivers romping, off-the-cuff rock and blues, moralistic plainsongs about Christian matters, and ragged interpretations of country and folk chestnuts like *Shenandoah*.

Only four of the songs are Dylan originals. His musical accompanists vary from track to track, as do his stylistic and thematic intentions. You wonder whether he even bothered to rehearse some of these songs beforehand. On the funereally paced *When Did You Leave Heaven?*, the keyboardist and drummer seem uncertain of their timing, colliding with Dylan's clumsy guitar like bodies bumping in a dark room. A somber "Infidels" outtake titled *Death Is Not the End* is sung in a flat deadpan with absurd, Barbie Doll vocal assistance from Clydie King.

Aside from a spirited but superfluous runthrough of *Let's Stick Together* (a hit for Canned Heat many years ago), the sole track worthy of the Dylan canon is *Sylvia*, sung with the Grateful Dead and co-written with Dead lyricist Robert Hunter. A lively and purposeful piece of songcraft, it embarrasses the mediocre company surrounding it.

*Parke Puterbaugh*

**EUROPE:** *Out of This World.* Europe (vocals and instrumentals). *Superstitions; Let the Good Times Rock; Open Your Heart; More Than Meets the Eye; Coast to Coast;* and seven others. EPIC OE 44185, © OET 44185, © CK 44185 (48 min).

Performance: *Progressive schlock*  
Recording: *Good*

Europe is a second-generation descendent of the progressive-rock school of the

Seventies. Much like its forebears, the band doesn't have a lot to say, but it goes to great lengths to say it. "Out of This World" presents a grand facade of keyboard frippery and Olympic-class slalom runs around the guitar's neck. Lumbering hard-rock riffs jostle against slabs of ponderous pseudoclassicism. Singer Joey Tempest's grunts punctuate the former, and he slips into an operatic yowl when the band aspires to pomp and grandeur. When the shrieking harmonies fall in, dogs whine and mice leave the house. If this band were really representative of the European continent, concerned historians would be reassessing the wisdom of the Marshall Plan right now. *Parke Puterbaugh*

**MICHAEL FEINSTEIN:** *Isn't It Romantic.* Michael Feinstein (vocals); orchestra, Edward Karam cond. *Isn't It Romantic; A Fine Romance; I Can Dream Can't I/I'll Be Seeing You; My Favorite Year; No Other Love; How About You;* and five others. ELEKTRA 60792-1, © 60792-4, © 60792-2 (48 min).

Performance: *His best yet*  
Recording: *First-rate*

Michael Feinstein's last few albums have shown that he is at his best when he's crooning gently and not trying for the glitz or pow of a Jolson or Minnelli. In this marvelous new set, it's easygoing ballads all the way. That doesn't mean that Feinstein sings them all the same way—far from it. Some are dreamily romantic; some are warmly wide-eyed; some are lightly swinging. All are projected with a clear concern for the meaning of the lyrics, a Feinstein trademark, and for the first time he has forsaken the accompaniment of his own piano or a small combo and recorded with a luxurious thirty-piece band—with great results. Whether it was the setup that made it possible for him to concentrate on just singing, or the terrific Johnny Mandel arrangements, or a combination of the two, Feinstein has never sounded better. And his concise, informative liner notes are a perfect example of what liner notes *should* be and so seldom are. *R.H.*

**JANIE FRICKE:** *Saddle the Wind.* Janie Fricke (vocals); vocal and instrumental accompaniment. *Sugar Moon; I'll Walk Before I'll Crawl; Heart; I'm Not That Good at Goodbye; Where Does Love Go (When It's Gone);* and five others. COLUMBIA FC 44143, © FCT 44143, © CK 44143 (29 min).

Performance: *Engaging*  
Recording: *Very good*

Under the direction of producers Billy Sherrill and Norro Wilson, Janie Fricke hit the country charts consistently enough to build a reputation as a bankable commodity, even winning the Country Music Association's Female Vocalist of the Year award in 1982 and



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Highway 101: no gimmicks

1983. Problem was, Fricke's albums weren't very interesting instrumentally or lyrically—she was cast largely as the wronged heroine of a dime-store novel—and she came across as a splendid vocalist with no real emotional attachment to the material. The new "Saddle the Wind," however, was produced by Steve Buckingham, and things have perked up considerably.

Fricke spins out *Sugar Moon*, the old Bob Wills western-swing classic, as convincingly as if she had once sung with the Texas Playboys, and she invests Hank Cochran's *Don't Touch Me* with the kind of torrid emotion that Elvis Presley gave his recitational weepers like *Are You Lonesome Tonight?* Buckingham even has her sailing through Peter Rowan's semi-bluegrass *Where Does Love Go (When It's Gone)*, in which she sounds both spirited and confident. Actually, those two adjectives pretty much describe this whole venture. A delightful collection. *A.N.*

**COREY HART: *Young Man Running*.** Corey Hart (vocals, keyboards); vocal and instrumental accompaniment. *Don't Take Me to the Racetrack; In Your Soul; So It Goes . . . ; Still In Love; Lone Wolf; Crossroad Caravan; Chippin' Away*; and four others. EMI E1-48752, © E4-48752, © E2-48752 (41 min).

Performance: *Déjà vu*  
Recording: *Good*

Corey Hart's earlier work reminded me a lot of Bryan Adams. This record

reminds me a lot of Sting. Depending on what you think of those two artists, therefore, "Young Man Running" may or may not represent progress. Hart's melodic gift cannot be denied; he writes clear, strong tunes that convey a wide variety of moods. Even *Truth Will Set You Free*, which sounds like a warmed-over version of *Every Breath You Take*, rocks out steady and sure.

Hart's lyrics are less consistent. Often he strains for too much—trying to combine two divergent concepts or reaching for a statement of overriding metaphysical importance—and this gives many of the songs a puzzling or pretentious quality. When he sticks to the more mundane he achieves much more. *Crossroad Caravan*, written about his own childhood experiences as part of a family on the move, imparts a universal message through a deeply felt reminiscence rather than lofty verbiage. If Corey Hart had the confidence to stick to writing from his own experiences, he could do some great things. *R.G.*

**HIGHWAY 101: *Highway 101*².** Highway 101 (vocals and instrumentals). *Honky Tonk Heart; Road to Your Heart; Setting Me Up; Somewhere Between Gone and Goodbye; (Do You Love Me) Just Say Yes*; and five others. WARNER BROS. 25742-1, © 25742-4, © 25742-2 (35 min).

Performance: *Improved*  
Recording: *Very good*

With their 1987 debut album, *Highway 101* racked up an impressive list of No.

1 and Top 10 hits—*Somewhere Tonight, Cry, Cry, Whiskey, If You Were a Woman*, and *The Bed You Made for Me*—and established itself as An Act to Watch in contemporary country music's reeling whirlwind of change. Lead singer Paulette Carlson, with her wounded, lost-little-girl voice, was obviously the band's trump card, but there was something annoying about the band's overall sound, something that seemed contrived and manufactured. Indeed, the band members had been hand-picked and assembled much as the Monkees were back in the Sixties—although at least the members of Highway 101 were real musicians.

Now comes the band's sophomore effort, a sparkling collection of involving, intelligent tunes delivered with only a trace of the artificiality that marred its predecessor. There's a nicely loping version of Mark Knopfler's *Setting Me Up*, and, in a braver move, the band dusts off Buck Owens's 1956 *There Goes My Love*, which seems so fresh it virtually grabs you by the lapel. But the real gems here are the "women's songs," Matraca Berg and Ronnie Samoset's *Somewhere Between Gone and Goodbye*, detailing the empty nights of a cheated-on wife, and Beth Nielsen Chapman's *Long Way Down*, examining the insecurities of a woman who "came so far playing that guitar" and who knows that "it's a long way down." Even the obvious hits—especially *(Do You Love Me) Just Say Yes*—appear free of the gimmicks that characterized the group's earlier material. And producers Paul Worley and Ed Seay aren't afraid to let lead guitarist Jack Daniels, bassist Curtis Stone, and drummer Scott "Cactus" Moser stretch out in the instrumental ensemble sound, challenging the band's reputation as "just a radio act."

Today's crop of new country acts is probably the most talented in the history of the genre. How far Paulette Carlson and company can ride Highway 101 across this busy landscape is anyone's guess. But "Highway 101" goes a long way toward assuring an eventful journey. *A.N.*

**IN TUA NUA: *The Long Acre*.** In Tua Nua (vocals and instrumentals); instrumental accompaniment. *Woman on Fire, All I Wanted; Wheel of Evil; Meeting of the Waters; The Innocent and the Honest Ones; Seven into the Sea; Some Things Never Change*; and four others. VIRGIN 90948-1, © 90948-4, © 90948-2 (44 min).

Performance: *Rich*  
Recording: *Okay*

Here is yet another terrific Irish band, a septet featuring—in addition to the standard rock lineup of singer, guitarist, keyboardist, bassist, and drummer—a fiddler and a uilleann piper. In Tua Nua, which is Gaelic for "in a new kingdom," seamlessly melds Irish folk mu-





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sic with rock-and-roll. With the help of producer Don Dixon, who's helped many an American band blend folk and rock, In Tua Nua has produced an intense Irish stew.

In Tua Nua may strike some listeners as a happy medium between U2 and the Pogues. "The Long Acre" relentlessly explores the explosive nexus of love, politics, and religious faith with the driving energy of U2, while the fiddle and pipes give the music a heady ethnic flavor more closely associated with the Pogues. Without actually sounding much like either of them, In Tua Nua blends the two styles in a way that's rich and satisfying. *Woman on Fire*, for example, is a lamentation about being trapped in a fatal attraction, and the band's varied instrumental voices pack an orchestral wallop that increases the clout of the strong lyrics. In rock-and-roll, as in so many other areas of the arts, Ireland seems to be an unending source of talent.

R.G.

**LITTLE RIVER BAND: *Monsoon*.** Little River Band (vocals and instrumentals); instrumental accompaniment. *It's Cold Out Tonight; Parallel Lines; Love Is a Bridge; The Rhythm King; Face in the Crowd; A Cruel Madness; Inside Story; Son of a Famous Man;* and two

others. MCA MCA-42193, © MCAC-42193, © MCAD-42193 (43 min).

Performance: *Topnotch*  
Recording: *Excellent*

Glen Shorrock has rejoined the Little River Band. Granted, this isn't quite like McCartney reconvening the Beatles or Roger Waters making amends with Pink Floyd, but in Australia (where they're enormously popular) and America (where they've had their share of success), it could signal a comeback. Vocalist Shorrock, you see, was the driving force behind their twelve-hit winning streak, and after he left in 1982 the river bed went dry.

"Monsoon" ought to bring the greenery back to their banks. If you've pegged LRB as an easy-listening band, prepare to be surprised. This is a respectable, even bracing pop-rock album. Imagine a livelier Genesis, shot through with solid harmonies and more guitars than keyboards. *Shadow in the Rain, It's Cold Out Tonight,* and *Parallel Lines* are crisp, driving tracks performed with real Sixties-style verve. (For those who'd scoff, the Little River Band has its roots in the Twilights, a group that vied with the Easybeats for top-pop honors Down Under.) They've left the midtempo love songs and draggy bal-

lads to Air Supply and their ilk and sound impatient to make up for lost time. It feels odd to sing their praises, but the Little River Band deserves credit for bouncing back stronger than ever.

Parke Puterbaugh

**THE MCCARTERS: *The Gift*.** The McCarters (vocals); instrumental accompaniment. *I Give You Music; Timeless and True Love; Flower in the Desert; Loving You; My Songbird; A Quiet Desperation; Where Would That Leave Me;* and three others. WARNER BROS. ● 25737-1, © 25737-4, © 25737-2 (32 min).

Performance: *Homespun*  
Recording: *Very good*

The McCarters may sound like a made-up group—their name a combination of a fast-food restaurant and one of the most honored old-time country-music families—but in truth they are three sisters from Sevierville, Tennessee, who have Charlemagne hair and voices that could melt the sun. Like the early records of another woman from Sevierville, one Dolly Parton, the McCarters' "The Gift," lovingly produced by Paul Worley and Ed Seay, shimmers with a true mountain quality, from the acoustic instrumental approach to the girls'

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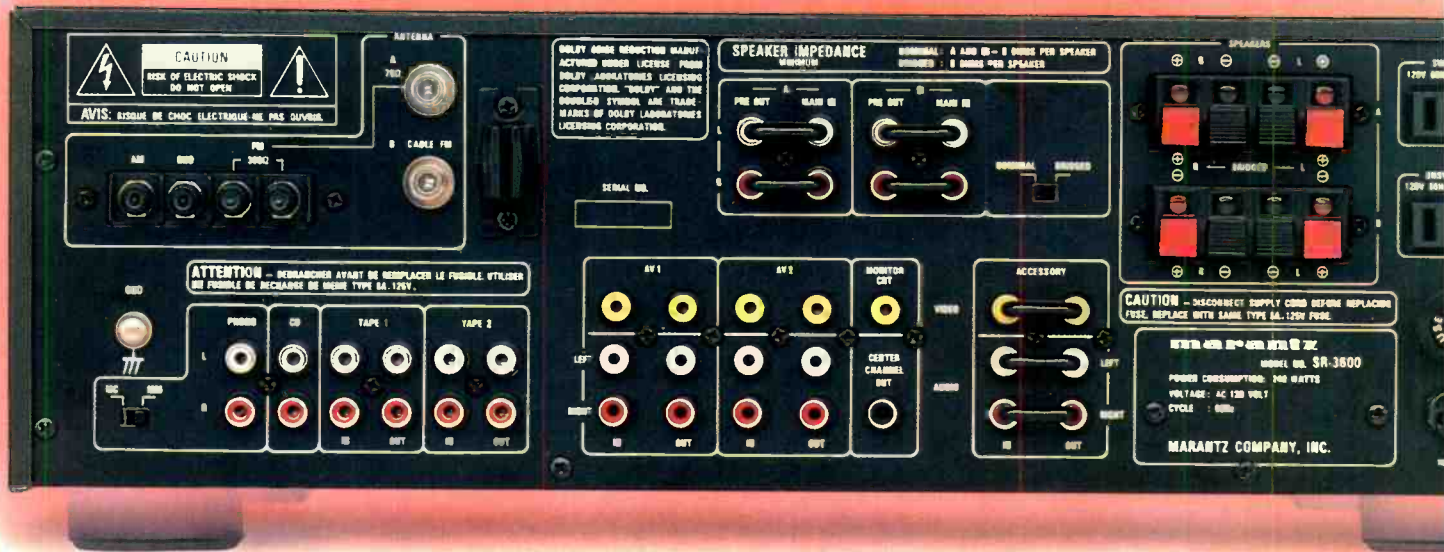
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pronunciation and intonation, and even the timbre of their healthy sopranos.

The McCarters—twins Lisa and Teresa and sister Jennifer—are stronger on harmonic blend than on emotional interpretation, as evidenced by their weak-kneed rendition of the Jesse Winchester classic, *My Songbird*. But they are a refreshing alternative to canned country radio, and, with songs that celebrate old-fashioned values without getting syrupy about it, they are also a boon to Nashville's thriving new traditionalism. Welcome. *A.N.*

**MELBA MOORE: *I'm in Love*.** Melba Moore (vocals); vocal and instrumental accompaniment. *Love and Kisses; I'm in Love; Love Always Finds a Way (to Your Heart); I Can't Complain; I Don't Know No One Else to Turn To*; and five others. CAPITOL C1-46944, ©C4-46944, ©C2-46944 (46 min).

Performance: *Polished and pretty*  
Recording: *Very good*

Much of Melba Moore's appeal as a singer lies in her ability to infuse any song she does with a kind of vitality and dramatic intensity that must stem from her initial success in the theater. Her treatment of lyrics is exceptional, even when the words themselves are pedestrian. All her inflections and flourishes are carefully placed, and she has the vocal power and control to make everything work. In her utterly stunning, gospel-flavored performance here of *I'll Never Find Another You*, for example, she starts out in a taut, emotional mood, and as the song progresses she builds to higher and higher dramatic peaks, climaxing with a high note that raises goosebumps.

Another major attraction is Moore's duet with Freddie Jackson in *I Can't Complain*, though musically it is overshadowed by *Test of Time*. Recently recorded by Ben E. King, *Test of Time* has a mellow, old-easy-chair feel to it and a hummable, memorable melody, but when Moore works it over, with another of those dazzling high notes, she truly makes it her own. Not all of the songs in "I'm in Love" are on the same high level as these three, but all of Melba Moore's performances are. Every song should be so lucky as to get her special treatment. *P.G.*

**K. T. OSLIN: *This Woman*** (see Best of the Month, page 114)

**SAM PHILLIPS: *The Indescribable Wow*.** Sam Phillips (vocals); instrumental accompaniment. *I Don't Want to Fall in Love; Flame; What Do I Do; I Can't Stop Crying; Holding On to the Earth*; and five others. VIRGIN 90919-1, ©90919-4, ©90919-2 (34 min).

Performance: *Sweet and sour*  
Recording: *Good*

Sam Phillips comes at you from two decades at once. Musically, "The Inde-



*Sam Phillips: angry irony*

scribable Wow" has deep roots in the innocent and upbeat Sixties, echoing the Beatles from different periods, the British Invasion in general, and pop psychedelia. Her lyrics, however, are definitely from the depressing Eighties, when love is something that smart women do all too foolishly. The title of *I Don't Want to Fall in Love*, for example, has an angry irony: She doesn't, yet she does. Phillips is a pragmatic romantic, filled with all the contradictions this entails. When she sings, in *Out of Time*, "Did we say forever/Well, whatever did we mean," the questioning seems sadly inevitable. For Phillips, love is the awful price we pay for being alive—and our greatest reward. *R.G.*

**KENNY RANKIN: *Hiding in Myself*.** Kenny Rankin (vocals); vocal and instrumental accompaniment. *Lovin' Side; Before the Fall; Delila; Hiding in Myself; Keep the Candle Burnin'*; and seven others. CYPRESS YL 0114, ©YC 0114, ©YD 0114 (54 min).

Performance: *Loosen your tie*  
Recording: *Satiny and warm*

A honey-throated tenor capable of jazz scatting, Kenny Rankin had some followers in the last decade but then dropped from sight—that is, until Cypress Records, that Eighties haven for Seventies singer/songwriters, signed him. As on previous records, he glides his way here through a program of light jazz-pop originals (and two Marvin Gaye covers) that are more pleasant than challenging.

Rankin's direction is similar to that of James Taylor on his recent outings, as both marry Brazilian percussion and lilting, jazzy keyboards to a folk sensibility rooted in shallow soil. His songs

have a bouncy L.A. ambience, nestled somewhere between Spyro Gyra and Kool and the Gang, with a soupçon of rock by way of Kenny Loggins, soul by way of Peter Cetera, and folk-pop sincerity by way of Art Garfunkel. Rankin's Latin rhythms and supple vocalise allow his music to transcend that company, but only by inches.

*Parke Puterbaugh*

**TONY RICE: *Native American*.** Tony Rice (vocals, guitar); vocal and instrumental accompaniment. *Shadows; Why You Been Gone So Long; Urge for Going; Go My Way; John Wilkes Booth; Summer Wages*; and five others. ROUNDER 0248, ©C-0248, ©CD-0248 (42 min).

Performance: *Eloquent*  
Recording: *Excellent*

Tony Rice, the much-lauded guitar virtuoso who rose to prominence nearly twenty years ago with New South, returned to singing two albums ago, with "Cold on the Shoulder," after all-instrumental stints with David Grisman and with his own band, the Tony Rice Unit, in the late Seventies and early Eighties. In "Native American," Rice offers an eclectic and beautifully paced program of modern folk and acoustic music by such composers as Gordon Lightfoot, John Mayall, Mickey Newbury, Joni Mitchell, James Taylor, Ian Tyson, and Mary Chapin Carpenter.

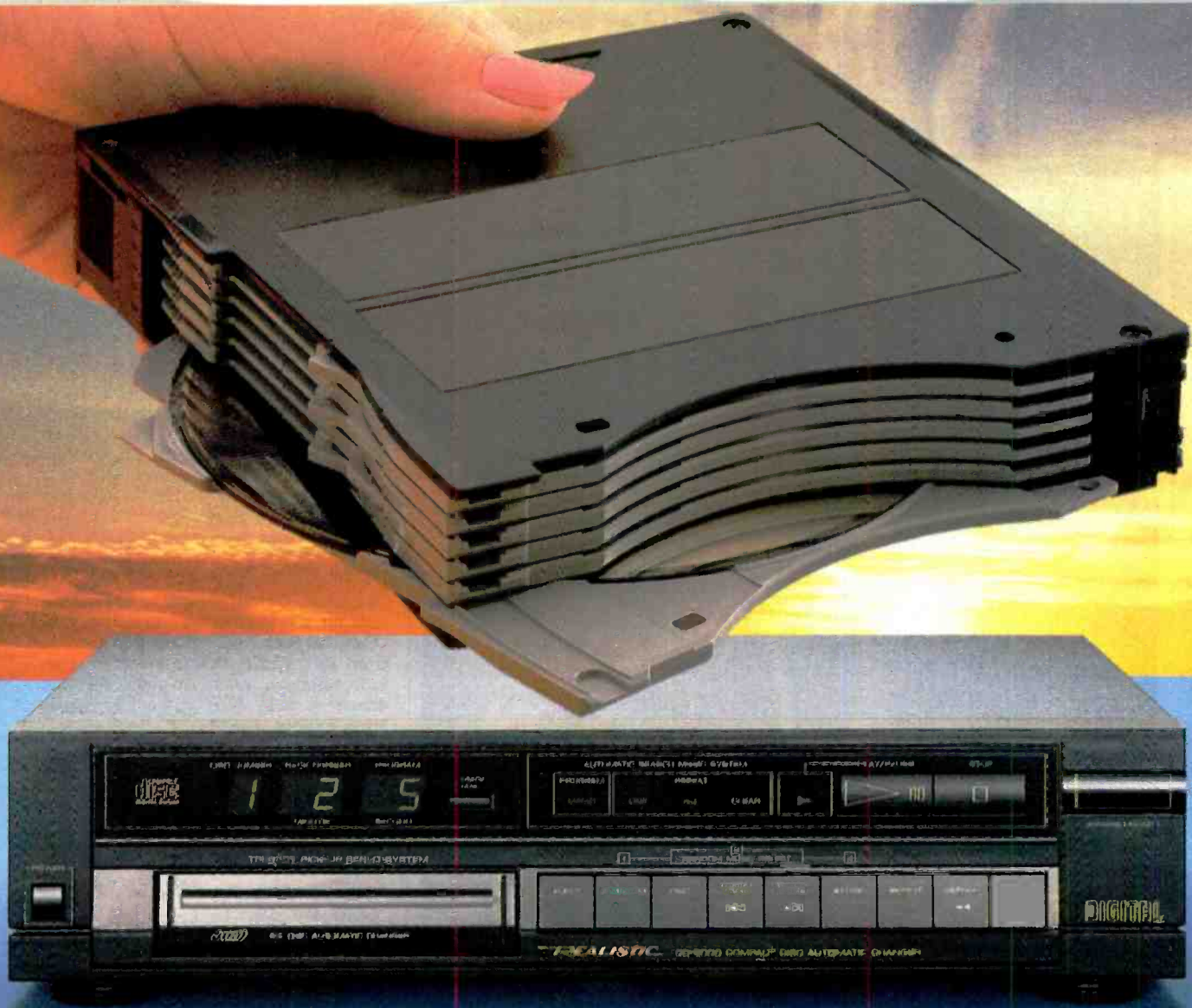
While vocally Rice sounds too much like Lightfoot, whom he obviously admires (mentioning him four times in the liner notes), it is rare to find an instrumental master who sings this well, or a singer who plays an instrument with such command. Rice also emerges here as an innovator of surprising depth, seeking—and finding—a superb balance between tradition and experimentation, as when he uses acoustic piano and bass as the primary rhythm section in Mitchell's underrated folk classic, *Urge for Going*, or delivers John Mayall's silvery *Night Flyer* with an ensemble of mandolin, dobro, acoustic bass, and guitar. From start to finish, *Native American* is a work of integrity, verve, and passion. It is not to be missed. *A.N.*

**TRACIE SPENCER.** Tracie Spencer (vocals); vocal and instrumental accompaniment. *Hide and Seek; Symptoms of True Love; My Heart Beats Only 4 U; In My Dreams; Imagine*; and five others. CAPITOL C11E-48186, ©C41E-48186, ©C21K-48186 (44 min).

Performance: *Bright young talent*  
Recording: *Very good*

Tracie Spencer looks and sounds like somebody's kid sister who was let loose in a recording studio. The marvel is that she displays so much natural ability that this album yields many moments of genuine musical pleasure. She's had a lot of help from a battery of successful





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## "FREEDOM" RINGS



**T**HE trouble with Bruce Springsteen is that he's been far too good to be true for far too long. First, he just made great records. Then, faced with the horrendous musical black hole that was the late Seventies and early Eighties, he became the *de facto* exemplar of the entire rock-and-roll tradition. And later, his politics inching unmistakably leftward, he emerged as a moral philosopher, America's conscience. Clearly, the only job left for him is at the Vatican.

All of this would seem to be an impossible burden for a guy who, let's face it, is at heart just a rock musician from New Jersey. And so, even though he's one of the handful of superstars whose music remains uncompromised by *The Business*, and even though he seems to be every bit the swell guy of his image, some people—even fans—have begun to get a little cynical about him of late. One well-known comedian, for instance, noting the Boss's highly publicized marital problems, rechristened Springsteen's last concert stint the "Tunnel of Community Property" Tour, a bit of irreverence that would have been all but unthinkable as recently as a year ago.

Speaking as a lapsed fan, then, it's nice to be able to report that "Chimes of Freedom," Springsteen's latest release, exhibits all the old integrity and power.

It's a live EP he recorded as he prepared to go out with Sting, Tracy Chapman, and others on the Amnesty International Tour (a portion of the proceeds from sales of the record go to Amnesty International, according to the jacket). Featuring the newly reconstituted E Street Band, it contains a heartfelt performance of *Tougher Than the Rest*, one of the better songs from "Tunnel of Love," an odd but compelling acoustic version of *Born to Run*, and a nicely modulated remake of the former B side *Be True*. But the title track—a Bob Dylan classic performed here in a version derived from the Byrds—is worth the price of admission all by itself. This is the first time Springsteen has documented his incalculable debt to Dylan, and with the band going full throttle behind him, he inhabits this magnificent song in a way that's ineffably moving. Incidentally, the CD-3 version omits Springsteen's spoken introduction, a pitch for the Amnesty tour, and is thus clearly preferable. The music speaks for itself.

Steve Simels

**BRUCE SPRINGSTEEN:** *Chimes of Freedom*. Bruce Springsteen (vocals, guitar); E Street Band (vocals and instrumentals). *Tougher Than the Rest*; *Be True*; *Chimes of Freedom*; *Born to Run*. COLUMBIA 4C 4445, © 4CT 4445, CD-3 CSIG 000125 (22 min).

producers, but her youthful vitality and childish wonder illuminate the album's best selections, especially the opener, *Hide and Seek*. She also does an admirable job of tackling John Lennon's anthem *Imagine*. At her best, Spencer is reminiscent of the young Michael Jackson in her self-assurance and vocal ability, but there are times, particularly on the second side, where she succumbs to stridency, with a harsh edge. Though there is room for growth, Tracie Spencer is a welcome newcomer. P.G.

**TANGERINE DREAM:** *Optical Race*. Edgar Froese, Paul Haslinger (keyboards). *Marakesh*; *Twin Soul Tribe*; *Optical Race*; *Cat Scan*; *Turning Off the Wheel*; *Ghazal (Love Song)*; and four others. PRIVATE MUSIC 2042-1, © 2042-4, © 2042-2 (53 min).

Performance: *Programmed*  
Recording: *Good*

Tangerine Dream would be lost today without its sequencers. The tunes in "Optical Race" get their momentum from this synthesized pacemaker and, unfortunately, most of their melodic thrust as well. This makes for spare, fairly tedious music, and all the instrumental voices and effects generated by Edgar Froese and Paul Haslinger's electronics don't help. Call it New Age minimalism or minimalistic New Age, but "Optical Race" sounds like music made on a machine *by a machine*. R.G.

**TOM WAITS:** *Big Time* (see *Best of the Month*, page 113)

**HANK WILLIAMS, JR.:** *Wild Streak*. Hank Williams, Jr. (vocals); instrumental accompaniment. *If the South Woulda Won*; *You're Gonna Be a Sorry Man*; *Love M.D.*; *Early in the Morning and Late at Night*; *Social Call*; and five others. CURB/WARNER BROS. 25752-1, © 25752-4, © 25752-2 (38 min).

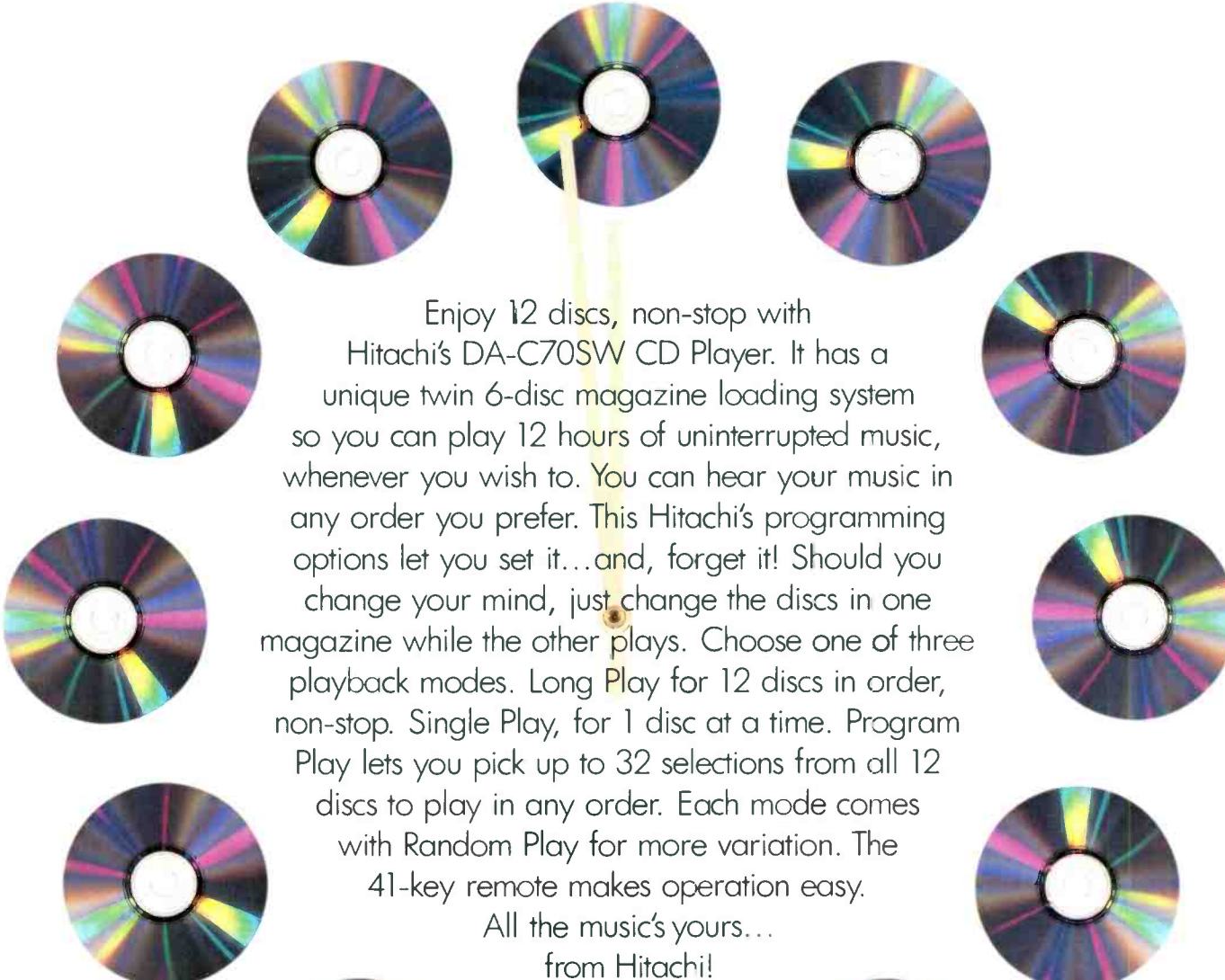
Performance: *Coasting*  
Recording: *Very good*

Hank Williams, Jr.'s new album, "Wild Streak," is many things. It is, first of all, more of what Hank Jr. always sings about—his insatiable sexual appetite, his deep-fried jingoism, and his moldy-oldie daddy. It is also an attempt to expand his sound through the use of outside material, namely some old Lynyrd Skynyrd, some new Troy Seals, some Tony Joe White swamp-blues, and, most successfully, a wonderful song called *You're Gonna Be a Sorry Man* by NRBQ's Al Anderson.

In the Anderson tune Junior rides a fine line between country-blues and down-tempo r-&-b, or between Delbert McClinton and Boz Scaggs. It is a style he handles easily, with urgency and with conviction, and a style "Wild Streak" could use more of. But most of all, this album is Hank Williams, Jr. trying hard not to be boring. And not succeeding very well. A.N.



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**ELIANE ELIAS:** *Cross Currents*. Eliane Elias (piano); Eddie Gomez (bass); Jack DeJohnette (drums); other musicians. *Hallucinations; Beautiful Love; Impulsive; When You Wish upon a Star; Campari and Soda*; and four others. BLUE NOTE B1-48785, © B4-48785 (48 min).

Performance: *Harmless*  
Recording: *Good*

A memorable moment occurred at the 1985 Umbria Jazz Festival in Perugia, Italy, when Eliane Elias appeared at an open-air concert with Steps Ahead, the group in which her future husband, Randy Brecker, was playing. During one of her eminently forgettable piano solos, a giant dragonfly forced her to flee from the keyboard. The audience applauded, and one sensed relief. Elias has since indicated that she felt restricted in her role with Steps Ahead, which may explain why she sounds far better in "Cross Currents." Here most of the accompaniments are by bassist Eddie Gomez and drummer Jack DeJohnette, and except for *Coming and Going*, a bit of musical levity written by Elias's grandmother in 1927, the accent is on jazz. Most of the compositions are by Elias, and I am happy to report that they belie the blandness I heard in Perugia. I don't think we have a major talent

here, but certainly a talent to be taken seriously. C.A.

**PEGGY LEE:** *Miss Peggy Lee Sings the Blues*. Peggy Lee (vocals); Mike Renzi (piano); other musicians. *Kansas City; Squeeze Me; Basin Street Blues; Love Me; You Don't Know; God Bless the Child*; and five others. MUSICMASTERS © CIJD 60155F (48 min).

Performance: *Easygoing*  
Recording: *Very good*

You'd have to look hard to find a more mellow vocal album that this one. Peggy Lee has been caressing our ears for close to half a century now, but her smooth, laid-back style shows no sign of wear, and it lends itself perfectly to the kind of material collected for "Miss Peggy Lee Sings the Blues." Notwithstanding the title, the program does not consist entirely of blues, at least not in the strictest sense, but a blues feeling does prevail. Accompanied by Mike Renzi's piano and a rhythm section that includes guitarist John Chiodini and drummer Grady Tate, Lee squeezes new life out of old songs like *Baby Won't You Please Come Home*, which she sings at a most effective snail's pace, and such Handy standbys as *Basin Street Blues* and *Beale Street Blues*. She also does Billie Holiday proud with soft

Leeward looks at *God Bless the Child* and *Fine and Mellow*, and she gives Bessie Smith a nod with *Tain't Nobody's Bizness*. Jennifer Holliday, Diane Schuur, Patti Labelle, and all the other screamers who mistake volume for soul ought to be locked up with this album until they get it right. C.A.

**WYNTON MARSALIS:** *Live at Blues Alley*. Wynton Marsalis (trumpet); Marcus Roberts (piano); Robert Leslie Hurst III (bass); Jeff "Tain" Watts (drums). *Just Friends; Chambers of Tain; Au Privave; Autumn Leaves; Cherokee; Much Later*; and ten others. COLUMBIA ● PC2 40675 two LP's, © PC2T 40675 two cassettes, © C2K 40675 two CD's (117 min).

Performance: *Much improved*  
Recording: *Very good remote*

My original enthusiasm for the young Wynton Marsalis, who sparkled in one of Art Blakey's Jazz Messengers groups a few years back, faded somewhat as he seemed to lose some of his creative fire. Too much hype was his undoing, I thought. All those nonplaying public appearances take their toll, and when you have the kind of name recognition Columbia's publicity department won for Marsalis, you have a lot of people listening to you with an ear deaf to flaws. But I'm happy to say that Marsalis has gotten it together again. His new album, a live double set from Blues Alley, in Washington, D.C., is as fine as anything he gave us in the past, and if he keeps his focus on the music, and on performing, his future will redeem that early promise.

Sharing the honors with Marsalis here is a fine rhythm section headed by pianist Marcus Roberts, a twenty-five-year-old Floridian who is simply extraordinary. His work on *Juan* is a sometimes Monkish tour de force that by itself makes this a must album. Yes, Wynton Marsalis has returned from the doldrums, proving he always had that special something worth waiting for. C.A.

**CARMEN MCRAE AND BETTY CARTER:** *The Carmen McRae-Betty Carter Duets*. Carmen McRae, Betty Carter (vocals); instrumental accompaniment. *What's New?; Stolen Moments (You Belong to Her); But Beautiful; Am I Blue?; Sophisticated Lady*; and three others. GREAT AMERICAN MUSIC HALL GAMH-2706-1, © GAMH-2706-4, © GAMH-2706-2 (41 min).

Performance: *Duel of divas*  
Recording: *Very good*

A vocal summit bringing together Carmen McRae and Betty Carter could not help but generate excitement. Their approaches to the art of singing encompass some significant differences. Mc-

*Peggy Lee: no sign of wear*



Rae reaches out assertively and grabs a song with her robust contralto, immediately imposing her imprint on lyrics and melody alike. Carter insinuates her way into the conceptual center of a piece, dissecting and reconstructing it with a cool, flat, almost vibratoless sound. And together they exemplify the art of jazz at its most exalted, the sort of inspired creation in motion that is at the heart of improvisation.

These eight duets are the result of a joint appearance by these two vocal giants at San Francisco's Great American Music Hall in early 1987. It was an ideal setting, since both have made some of their best recordings there in the past. Drawn from six shows, the performances here are illuminated by a spontaneity found only in sets recorded before an appreciative audience. Both singers seem comfortable and relaxed, and mutual respect informs every chorus they sing as they let loose with straight-ahead scatting, play off each other's ideas, and spur each other on. Indeed, these moments of give and take, as in *Sometimes I'm Happy* and *It Don't Mean a Thing (If It Ain't Got That Swing)*, are among the best in the album. Not to be overlooked, though, is the excellent backing by Eric Gunnison on piano, Jim Hughart on bass, and Wynard Harper on drums. Since it all worked out so well, let's hope an encore is in the offing. *P.G.*

**HELEN MERRILL AND GIL EVANS:** *Collaboration*. Helen Merrill (vocals); Gil Evans Orchestra. *Summertime*; *Where Flamingos Fly*; *By Myself*; *I'm a Fool to Want You*; *Any Place I Hang My Hat Is Home*; *Troubled Waters*; and six others. EMARCY ● 834 205-1, © 834 205-4, © 834 205-2 (45 min).

Performance: *Stellar*  
Recording: *Very good*

With the exception of one track, this is a re-creation of a Mercury album Helen Merrill and the late Gil Evans made in 1956, "Dream of You." The exception is *Summertime*, which borrows its chart from the highly acclaimed Miles Davis-Gil Evans "Porgy and Bess" album of 1958. The other arrangements are the same ones used in the 1956 collaboration, but there is a difference: Merrill's vocal delivery has matured to great advantage, and advanced recording techniques bring out details of these great Evans charts that were simply lost on the earlier tapes. It is a measure of his talent that the charts seem as fresh today as they did in the summer of '56. The combination of Merrill's smooth, pliable voice and Evans's rich orchestral tapestry makes this "Collaboration" a richly rewarding listening experience. *C.A.*

**HERMETO PASCOAL AND GRUPO:** *Só não toca quem não quer*. Hermeto Pascoal (flute, keyboards, guitar,

bass); instrumental accompaniment. *Canção da tarde*; *Quiabo*; *Rebuliço*; *Zurich*; *Viagem*; *Inocável*; and six others. INTUITION/CAPITOL C1-90559, © C4-90559, © C2-90559 (45 min).

Performance: *Exhilarating*  
Recording: *Very good*

Hermeto Pascoal is one of Brazil's most original and consistently exciting artists. His new album, "*Só não toca quem não quer*" ("Only If You Don't Want It, You Can't Do It") is full of delightful surprises, a set of wild sounds that often combine both traditional and original elements. The blend of a fertile, venturesome imagination and reverence for the past is a winning one in any musical idiom. Pascoal simply bubbles with creativity, and rarely have I heard him in such fine form. You don't often hear music so full of life and so fascinating, the expression of an extraordinarily active mind. I don't just like this album, I love it. Hermeto Pascoal belongs on my special shelf along with Edith Piaf, Bessie Smith, Carlos Gardel, and Lotte Lenya, artists I never get tired of listening to. *C.A.*

**DAVE VALENTIN:** *Live at the Blue Note*. Dave Valentin (flute); instrumental accompaniment *Columbus Avenue*; *Afro Blue*; *Monkey Buttons*; *Blackbird*; *Footprints*; and four others (five others on CD). GRP GR-9568, © GRC-9568, © GRD-9568 (57 min).

Performance: *Processed*  
Recording: *Good remote*

Remember Les Baxter's plastic jungle sounds? I won't say that flutist Dave Valentin's music is quite that insipid, but it does tend to lack surprises. It works as background music, however,

and a great many people love it. I just happen to prefer more substantial sounds, which I *did* find in Valentin's treatment here of Wayne Shorter's *Footprints*. It builds up nicely and actually cooks. But then came Dave Grusin's *Marcosinho*—complete with verbs and sound effects—and Baxter was back in full plastic bloom. Another fine player gone awry. *C.A.*

**GROVER WASHINGTON, JR.:** *Then and Now*. Grover Washington, Jr. (saxophone); Tommy Flanagan, Herbie Hancock (piano); Ron Carter (bass); other musicians. *Stella by Starlight*; *Stolen Moments*; *In a Sentimental Mood*; *French Connections*; and four others. COLUMBIA ● OC 44256, © OCT 44256, © CK 44256 (57 min).

Performance: *A surprise*  
Recording: *Quite good*

Until I heard "Then and Now," Grover Washington, Jr.'s latest album, I had more or less dismissed him as a tolerable Kenny G. Mind you, this set does not knock the argyles off my feet, but it is uncharacteristically articulate, in keeping with the current tendency of pop-fringe players to seek a purer jazz sound. Of course, it helps to have players like Ron Carter, Tommy Flanagan, and Herbie Hancock aboard. Over the years, Hancock has dished up more than his share of mindless sounds, but here he gets down to business and comes close to rising to his old level. Washington still lacks a distinctive style, and his tone is General Issue, but this album proves that he *can* get away from simple clichés and produce results that are quite palatable. Who knows, *originality* might be lurking around the corner. *C.A.*

*Carmen McRae and Betty Carter: vocal summity*



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## SHOW BOAT

**J**OHN MCGLINN is a man with a mission: to restore the lost glories of the great old American musical. *Show Boat* was Jerome Kern's magnum opus. And the new EMI/Angel recording of it is John McGlinn's. It is the most extraordinary and painstaking reconstruction of a musical ever attempted. Every note of the 1927 original is here. So is everything that was cut—everything, at least, that could be located. New numbers for various revisions and revivals—notably four songs written for the 1936 film—are here. These first thoughts and afterthoughts alone take up almost one whole CD out of three—a sort of swollen appendix.

But it is the casting, not the scholarship or archeology, that makes us sit up and take notice. Frederica von Stade as Magnolia and Teresa Stratas as Julie! Jerry Hadley as Gaylord Ravenal, Bruce Hubbard as Joe, Steve Barton (of *Phantom of the Opera*) as Steve Baker, and Karla Burns as Queenie! Lillian Gish in a cameo! The orchestra is the London Sinfonietta, better known for avant-garde music. The chorus is the Ambrosian Chorus. Serious.

Robert Russell Bennett's orchestrations have been recovered from a warehouse in Secaucus, New Jersey. Here is the original dark-hued overture. Here are restored lyrics and spoken lines (including some that had been altered because they were thought to be racially offensive). Here are acres of original underscoring and all the dance numbers with their wonderful Twenties feel.

There is an essay by Miles Kreuger about the history of *Show Boat* and McGlinn's own extensive notes on "Refitting a Masterpiece," including sections titled "Restorations and Re-evaluations," "Diverse Variants," "Appendix Material," and "Lost Songs, Fragments and Ephemera"—all worthy of a missing Monteverdi opera or a lost Bach *Passion*.

And then there is the performance.

There are two ways of approaching this recording. One is just to listen to it. The other is to measure it against the claims. Better just to listen.

The truth is that *Show Boat* is a work of a certain antique charm, but it can hardly stand up under all the serious claims made on its behalf. Edna Ferber's original novel was hardly a deathless work of art ("potboiler" might be closer to the mark), and Oscar Hammerstein's version is full of sentimental turns and awkward loose ends.

Character? Social significance? Go on. *Show Boat* is based on the oldest and hoariest of themes—what show-biz folks are like behind the scenes. The really serious touches—*Ol' Man River*, for example—seem to have nothing to do with the rest.

Remember, in 1927 Puccini was already dead, *Wozzeck* was starting to be heard around the world, Eugene O'Neill was in mid-career, and Brecht-Weill had just begun to be hyphenated. Why make claims that *Show Boat* can't possibly live up to?

From many points of view, the cast in the new recording is great, but do these performers do anything for *Show Boat* but make it seem like a very old-fashioned, if inspired, operetta? The one truly original aspect of *Show Boat* lies in its use of jazz- or blues-inspired material in an operetta score, musical qualities that helped give a stale, old form new life. These singers, all great in their own domains, are not jazz or blues performers, and McGlinn's direction is almost invariably straight as an arrow and usually too fast to allow any real blues feeling. Not even Karla Burns, a heavy jazz and blues performer of the old school, is ever given a chance to show her stuff.

In Gershwin's *Strike Up the Band* from the same year, a real jazz band with a rhythm section was used as the nucleus of the pit band. Was that true of *Show Boat* as well? Perhaps not. At any rate, it doesn't appear here; there is no proper, functioning rhythm section to create the kind of time that the jazz- and blues-inspired numbers need.

What about larger musical construction? Some of the tunes in the show are repeated so much that they are almost beaten to death (fortunately, *Can't Help Lovin' Dat Man* can withstand almost anything). This should not be confused with a Wagnerian leitmotiv construction. There is also, it is true, a lot of instrumental music, including dance numbers and underscoring, all of which extends the musical dimensions of the work considerably.

I could go on about why, with all the care and genuine affection lavished on this recording, the work and the production cannot live up to the billing. So let's forget the billing. Let's try to listen to *Show Boat* naively, for what it is.

Suddenly this becomes quite a special performance. The newly restored old material is highly effective. It is delightful to have all the extras in that huge appendix. Von Stade and Stratas are, in their way, wonderful. They are too savvy to operatize Kern's vocal lines, and the operetta idiom that they find instead is perfectly apropos.

Enthusiasm is the keynote here, not dramatic or musical profundity. Some of McGlinn's tempos are just too fast, but he has a feeling for pacing, and he takes the bigger numbers (where he is at his best) up to some rather breathless and even thrilling heights.

*Show Boat* works its magic if we don't ask it to do more than it can do. It is one of the great pieces of the old-fashioned American musical theater—with, it is true, an up-to-date touch or two. It is one of the few musical-theater pieces to mix jazz and other Americana into the operetta form successfully. It has Kern's endlessly lavish musical invention, aided and abetted—almost as co-composer, I think—by Bennett and his exceedingly skillful talents in orchestration and dance music.

Oscar Hammerstein's abilities as a dramatist seem to me to be—here at least—fairly primitive. But he was a good and sometimes great lyricist, and the best songs of *Show Boat*, words and music, have not lost any of their luster. That alone is reason enough for *Show Boat* to continue to be performed and to be recorded with the kind of devotion, talent, and enthusiasm found here.

Eric Salzman

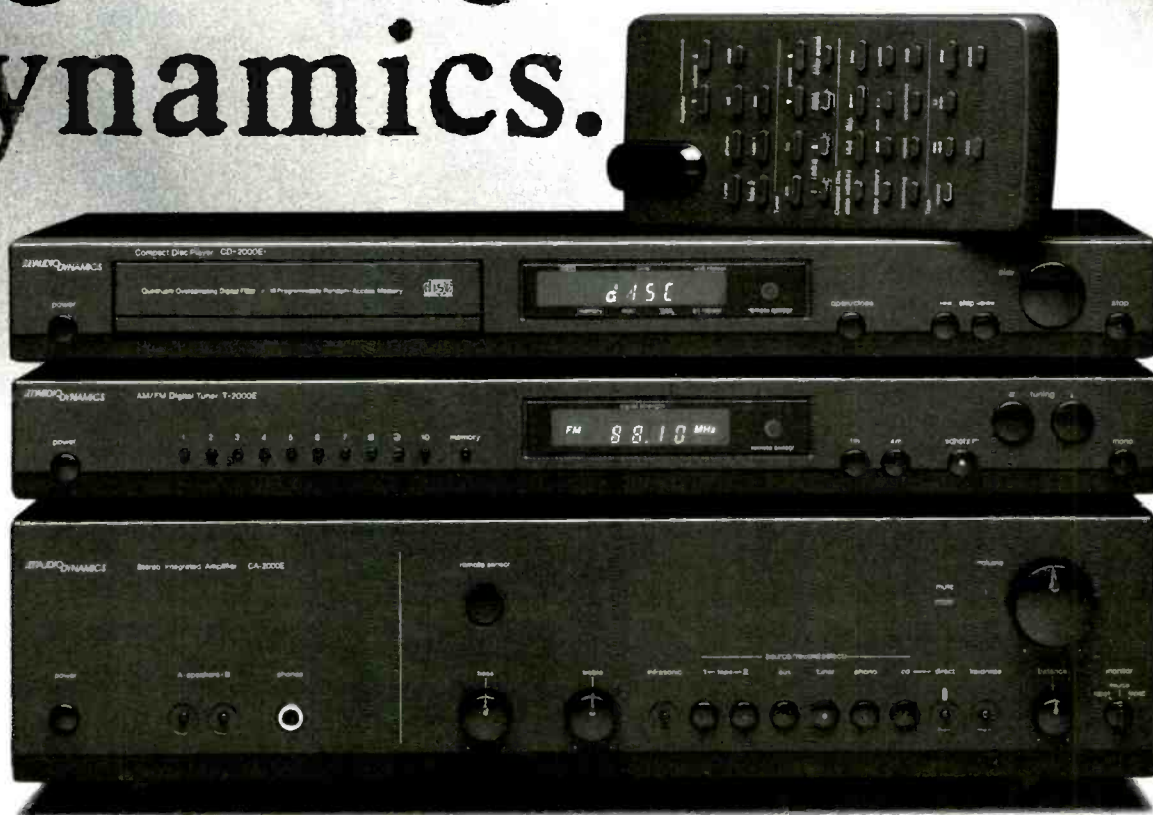
**SHOW BOAT (Jerome Kern—Oscar Hammerstein II).** Frederica von Stade, Magnolia Hawks; Jerry Hadley, Gaylord Ravenal; Teresa Stratas, Julie LaVerne; Bruce Hubbard, Joe; Karla Burns, Queenie; Lillian Gish, Lady on the Levee; others, Ambrosian Chorus, London Sinfonietta, John McGlinn cond. EMI/ANGEL ● DSC-49108 three LP's, © A4-49108 three cassettes, © A2-49108 three CD's (221 min).

Frederica von Stade (Magnolia), Bruce Hubbard (Joe), and Teresa Stratas (Julie)





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by *Christie Barter*  
& *Ron Givens*

**I**T'S beginning to look a lot like Christmas. At Rhino Records that means it's time to release wonderful and peculiar holiday goodies from the label's musical treasure chest. First and foremost is James Brown's "Santa's Got a Brand New Bag," a collection of songs from the three previous Christmas records made by the Godfather of Soul. It includes titles like *Santa Claus Go Straight to the Ghetto*, *Soulful Christmas*, and *Merry Christmas, Baby*.

Rhino has also culled holiday hits from its Golden Archive Series for "Christmas Classics." This anthology includes *Rockin' Around the Christmas Tree* by Brenda Lee, *Winter Wonderland* by Aretha Franklin, and *Monsters' Holiday* by Bobby "Boris" Pickett and the Crypt-Kickers. Then, for sheer madness, there's Spike Jones's "It's a Spike Jones Christmas," which has, among other things, *Jingle Bells* sung in pig Latin.

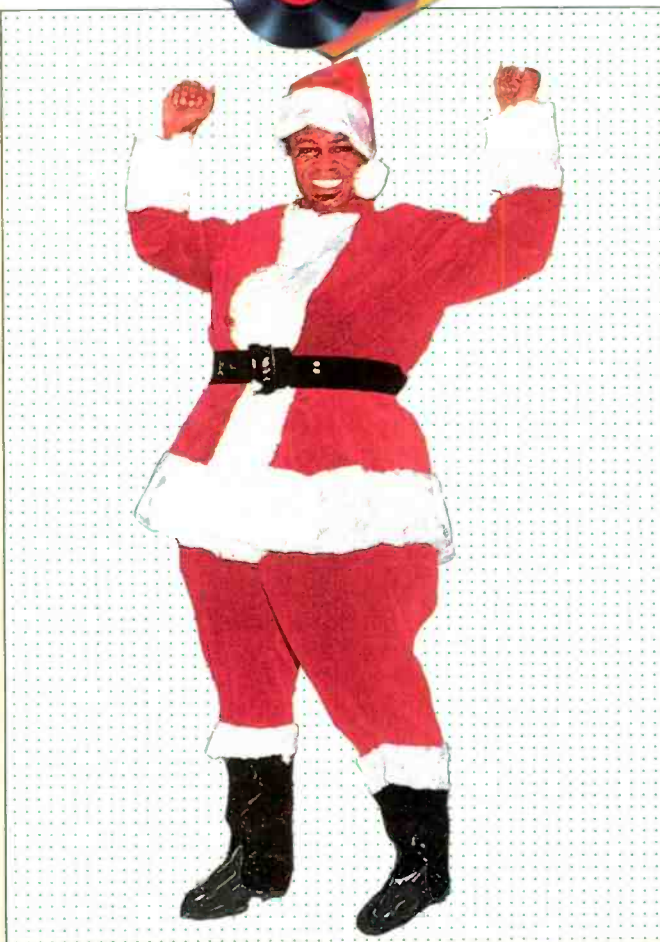
Country fans should check out "Hillbilly Holiday," which features Tex Ritter singing *Christmas Carols by the Old Corral* and *Santa Looked a Lot Like Daddy* by Buck Owens. All of this new stuff is in addition to Rhino's crazy-quilt of back-catalog holiday music—from Phil Spector to Dr. Demento to the Three Stooges. More than enough to stuff and stuff and stuff the area under a music lover's tree. □

*Bronfman: changing*



RHINO RECORDS

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*Brown: delivering*

**N**EW to the CBS Masterworks roster of artists is the Russian-born pianist Yefim Bronfman, who is heard in his first recording for the label, a November release, playing Prokofiev's Piano Sonatas Nos. 7 and 8. He is also currently on an extensive North American tour, performing with the Cincinnati Symphony over the Thanksgiving weekend followed by dates with orchestras in Dayton, Chicago (under Erich Leinsdorf), Dallas, and Boston (again under Leinsdorf).

Although Bronfman is embarking on a new label affiliation with the Prokofiev album, he has scored particularly this year with a prize-winning Deutsche Grammophon recording he made with violinist Schlomo Mintz coupling the two violin sonatas of Fauré. Our reviewer Richard Freed called it "a real gem." □

**N**O one really expected, fifteen years ago, that a record label devoted to women's music would achieve great success. But Olivia Records has confounded common wisdom since beginning in 1973 with a \$4,000 loan, releasing thirty-one albums by such artists as Chris Williamson and Meg Christian.

In honor of its birthday Olivia assembled a tour package of its artists, covering the country's major cities and featuring Williamson along with Lucie Blue Tremblay, Deidre McCalla, Tret Fure, Nancy Vogl, and Dianne Davidson. The showcase culminated in New York recently with a gala concert at Carnegie Hall, followed by a ball at the Waldorf-Astoria Hotel. Said Olivia's president, Judy Dlugacz, "It's great to see the industry paying more attention to strong, independent, female musicians." □

**T**HE musician on this year's Kennedy Center honors list (of five honorees) is violinist and conductor Alexander Schneider, who celebrated his eightieth birthday in October. Schneider thus joins the ranks of previous honorees in the classical music field, who include Leonard Bernstein, Rudolf Serkin, Virgil Thomson, Isaac Stern, and Beverly Sills. The 1988 Kennedy Center ceremonies, set for December 4, are being taped by CBS for future network telecast.

December also marks the twentieth anniversary of Schneider's own New York String Orchestra, which will perform its two annual Carnegie Hall concerts during the Christmas-New Year's week as well as one at the Kennedy Center on December 26.

CBS Masterworks is honoring the veteran musician, too, with a new recording of waltzes performed by the Schneider Quintet, in which he is joined by violinists Felix Galimir and Isidore Cohen, violist Michael Tree, and double-bass player Julius Levine. □

**T**HIS year's Avery Fisher Prize winner, for "outstanding achievement and excellence in music," is pianist André Watts, who recently



*Williamson: celebrating*

celebrated his twenty-fifth year as a major concert artist. One of the primary purposes of the Fisher Prize (Watts is

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Though the satellites we used aren't fairly described as sow's ears, the silk-purse sound we heard with the added ULD-15 was a revelation. ●●

\*High Fidelity

**“The Velodyne subwoofer is one of those rare components I can recommend to almost anyone . . .**

The Velodyne Subwoofer is the most interesting product I have reviewed to date. When asked about 20 Hz bass response and distortion, audiophiles traditionally mumble something about “no musical information below such and such” and change the subject. The craftsmen who built church organs in centuries past did not agree with this opinion, and they provided pipes with output down to 16Hz. Velodyne recognized the problem of reproducing low bass and engineered a solution. This feat required multi-disciplinary ability, intuition, craftsmanship, organization of priorities, and common sense. I rank the quality, if not the magnitude, of this small California company's achievement up there with Dolby noise reduction and the Compact Disc. ●●

David L. Clark  
\*\*Audio Magazine

**“Impressive as the specifications and measurements for the Velodyne ULD-12<sup>™</sup> are, they are overshadowed by its performance in a music system . . .**

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Julian Hirsch  
\*\*\*Stereo Review

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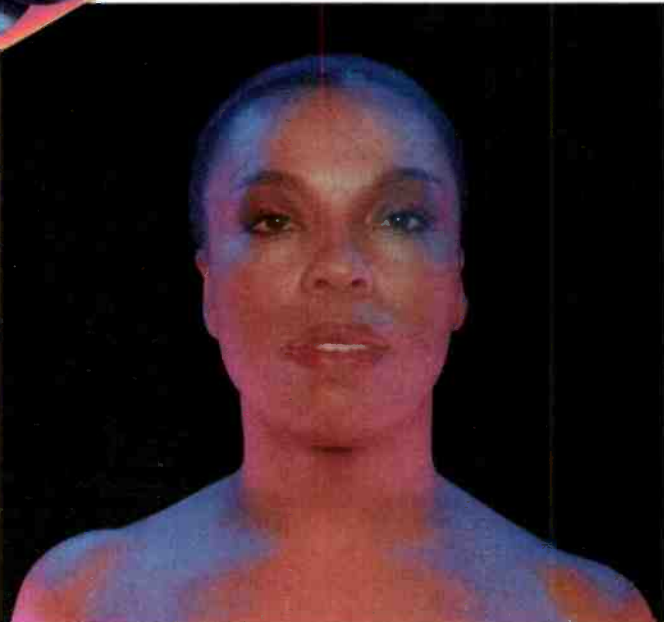


only the ninth recipient) is to recognize American instrumentalists with solo careers who have contributed significantly to the world of music and have served as unofficial, but true, musical ambassadors from our nation to the world at large. Watts clearly fits that bill, being known as a regular performer on concert stages around the globe and in recordings distributed internationally by CBS and EMI/Angel. His latest for Angel is a live recording of the recital he played at Carnegie Hall last April. Titled simply "André Watts at Carnegie Hall," it contains works by

all of Cash's partners in song are family or friends he's worked with over the years. Together, these guests constitute a Who's Who of country stars—Hank Williams, Jr., Roy Acuff, Emmylou Harris, Glen Campbell, Tom T. Hall, Waylon Jennings, the Everly Brothers, Roseanne Cash, June Carter Cash, John Carter Cash, and the Carter Family. In addition, there's a collaboration with Paul McCartney. Mercury has also just released "Classic Cash," new recordings of twenty of Cash's hits, including *Ring of Fire*, *Get Rhythm*, *Five Feet High and Rising*, and *Folsom Prison Blues*. □

**Y**OU might think that Roberta Flack has been on a very long vacation. She hasn't released anything in over seven years. But, she says, nothing could be farther from the truth: "Although people may not realize it, I work all the time. I am constantly in the studio, on the road, or rehearsing."

Now, the result of all Flack's labors is available in "Oasis," her new Atlantic album, which is filled with the jazzy, soulful pop that's sold millions of records in the past. She worked on this record with a wide variety of collaborators. One song was done with Brazilian singer-musician Djavan, another with jazzman Marcus Miller, and another with poet-author Maya Angelou. "I feel that



Flack: working all the time

after a number of years as a recording artist I have reached an understanding of how to do this," Flack said. "It won't take as long next time." □

Fred Hopkins, and Steve McCall. It has over 3,000 entries on composers and performers and over 1,800 discographies. And it costs \$295, suggested retail. □

**J**UST published, after more than four years of preparation: *The New Grove Dictionary of Jazz*, edited by Barry Kernfeld. Following closely on the heels of the indispensable, twenty-volume *New Grove Dictionary of Music and Musicians*, the four-volume dictionary of American music, and the three-volume dictionary of musical instruments from the same publisher, the *NGDJ* in two volumes is undoubtedly just what its makers say it is—"the first truly comprehensive dictionary of jazz."

**G**RACENOTES: Crosby, Stills, Nash, and Young have reunited for an album on Atlantic. . . . Biograph

Two jazz veterans have already expressed their enthusiasm. It is "a most impressive achievement," said saxophonist Benny Carter, "and is certain to become a standard reference." And Dizzy Gillespie, after seeing the advance galleys, declared it "a must for every serious jazz lover."

*The New Grove Dictionary of Jazz* contains over 4,500 articles covering jazz from the earliest New Orleans bands to such contemporary "free" jazz groups as Air, formed by Henry Threadgill,

Records has released recordings by George Gershwin, Fats Waller, and James P. Johnson transferred digitally from piano rolls to compact disc. . . . Doug Sahn, of Sir Douglas Quintet fame, has recorded his first solo album in three years for Antone's Records. . . . Los Lobos has retraced its roots with the all-Spanish Slash/Warner's record "La pistola y el corazon" ("The Pistol and the Heart"), which includes its versions of seven folk classics. □

SUZANNE STEVENS/M. L. FALCONE



Watts and Fisher

Haydn, Mozart, Schubert, and Brahms. □

**T**HE man in black is back—with a vengeance. Mercury has just released an album of duets starring Johnny Cash titled "Water from the Wells of Home." The record has a homey feel to it since nearly

Johnny Cash and Hank Williams, Jr.: down home

ALAN L. MAYOR/POLYGRAM



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*Discs and tapes reviewed by Robert Ackart, Richard Freed, David Hall, Stoddard Lincoln, and Eric Salzman*

**BACH: *St. John Passion (BWV 245)*.** Howard Crook (tenor), Evangelist; Peter Lika (baritone), Christ; Peter Kooy (bass), Pilate; Barbara Schlick (soprano); Catherine Patriasz (contralto); William Kendall (tenor). Collegium Vocale, Gent; Orchestre de la Chapelle Royale. Philippe Herreweghe cond. HARMONIA MUNDI ● 1264/65 two LP's, © 40.1264/65 two cassettes, © 90.1264/65 two CD's (115 min).

Performance: *Inspired*  
Recording: *Rich*

Philippe Herreweghe's literate, unaffected recording of the *St. Matthew Passion* was a joy and revelation to many. This *St. John Passion* seems to be even more masterly. It is not just for those who like to hear Bach without a strong operatic accent, but for those who prefer Bach with no accent at all. Even more than John Eliot Gardiner's excellent Deutsche Grammophon recording with authentic instruments, Herreweghe's interpretation epitomizes the basic idea of rediscovering original performance practices—giving a direct, immediate performance that puts as little as possible between the composer's inspiration and the listener's heart. So sincere, so unmannered is this approach that in comparison Gardiner's recording occasionally seems overinterpreted, even if brilliantly so, with touches that tell you more about the conductor's intelligence and style than about the story Bach lays before us.

Herreweghe turns out to be an excellent storyteller for a number of reasons: His interpretation seems inspired primarily by the words, he imposes a consistent sense of style on his musicians, and he has a keen sense of the work's overall design. This last attribute may be the most subtle and most important. Thanks to Herreweghe's unified, purposeful tempo scheme, Bach's superbly theatrical timing is particularly apparent. Bach's longer works can sometimes seem to be a slave to conventions of the time, but here a convincing case is made for every chorale and da capo section of the arias.

Unlike Nikolaus Harnoncourt, whose

## A NIGHT AT THE OPÉRA



June Anderson and Alfredo Kraus

**R**ECORDED at the Paris Opéra a year ago, the new EMI/Angel album of arias and duets sung by the young American soprano June Anderson and the veteran Spanish tenor Alfredo Kraus breathes with live-performance fire. The audience's response, which is exuberant, only heightens the excitement.

Anderson is a major talent, her as yet too few performances in this country notwithstanding. She is secure in her musicianship and sings with sureness of style and breathtaking agility. She also *interprets* what she sings; her high-flown coloratura is no mere vocalise. Louder notes at the top of her range tend to have an edge; they're not necessarily unpleasant, but they are sometimes at variance with the vocal line that for the most part characterizes her big soprano. This reservation aside, her performance in this program is outstanding.

A warm appreciation of Kraus is included in the accompanying notes, a tribute that is indeed well deserved. The tenor, who freely admits to having passed his sixtieth birthday, sings today like a man half his age—with ease and polish, with tone color becoming to the music at hand, and with impeccable diction (although his French has a slight

accent, you can understand every word!). Kraus is the most elegant, most stylish, and assuredly one of the most *musical* tenors before the public today; in every area encompassed by the art of the singing actor, he stands paramount and exemplary.

I need only add that, together, these two distinguished artists have come up with a thrilling recorded program, which is also well engineered and enhanced by the expert accompaniments provided by Michelangelo Veltri and the orchestra of the Paris Opéra.

Robert Ackart

**JUNE ANDERSON AND ALFREDO KRAUS: *Live from the Paris Opéra*.** Verdi: *Rigoletto: E il sol dell'anima. La Traviata: Un di felice: È strano . . . Sempre libera.* Gounod: *Faust: Salut, demeure chaste et pure.* Rossini: *Semiramide: Bel raggio lusinghier.* Delibes: *Lakmé: C'est le Dieu de la jeunesse.* Donizetti: *L'elisir d'amore: Una furtiva lagrima. Lucia di Lammermoor: Verranno a te sull'aura. La Fille du régent: De cet aveu si tendre.* June Anderson (soprano); Alfredo Kraus (tenor); Orchestre du Théâtre National de l'Opéra, Michelangelo Veltri cond. EMI/ANGEL © CDC-49067 (72 min).

EXPLANATION OF SYMBOLS:

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NOVITI/EMI-ANGEL

pioneering authentic performance on Teldec in 1966 was marred by valiantly bleating boy sopranos, Herreweghe and Gardiner both have more musical female sopranos and male altos in their choruses. Though Herreweghe's chorus and orchestra can't match the thrilling virtuosity of Gardiner's, his soloists are



Lynn Harrell: stylish Bach

frequently more attractive. Evangelist Howard Crook has such a flexible, fluent tenor that the wide vocal leaps in the music pose no obstacle at all but become part of what makes his performance so conversational. Peter Lika's Jesus is beautifully vocalized and poignantly acted. The four other soloists, especially contralto Catherine Patriasz, have lovely, light voices, though soprano Barbara Schlick is somewhat disappointing in her indifferent interpretation of the aria "Dissolve then, heart." Other recordings of the *St. John Passion* may be more striking and have stronger individual performances, but this is, overall, a fine, indeed inspired one. *David Patrick Stearns*

**BACH: Sonatas for Viola da Gamba and Harpsichord (BWV 1027-29).**  
**HANDEL: Sonata in G Minor for Viola da Gamba and Harpsichord.** Lynn Harrell (cello); Igor Kipnis (harpsichord). LONDON © 417 646-2 (48 min).

Performance: *Charged*  
Recording: *Very good*

Here is one of the rare instances in which Bach's sonatas for viola da gamba sound convincing on the cello and balance perfectly with the harpsichord. To achieve this result, Lynn Harrell has equipped his cello with gut strings, and, rather than striving for the usual long sensuous lines so beloved by his breed, he uses a light bow arm, observes the decay-time characteristic of the gamba, and articulates Bach's sinuous lines in a truly Baroque manner. Although the sound is still heavier than that of the gamba, Harrell's meticulous application

of Baroque performance practices yields readings that are stylistically superb. Harpsichordist Igor Kipnis quite naturally observes the same practices, thus eliminating the stylistic discrepancies and balance problems that usually mar performances of these works by a modern cello and harpsichord. This is no easy feat, and the team, Harrell in particular, deserves the highest praise.

Oboists will immediately recognize the Handel sonata as Op. 1, No. 7. It seems quite certain, however, that it was originally intended for gamba, and it is certainly convincing in this performance. Kipnis's realization of the figured-bass accompaniment is vital but always properly supportive. *S.L.*

**BEETHOVEN: Violin Concerto in D Major, Op. 61; Romance No. 1, in G Major, Op. 40; Romance No. 2, in F Major, Op. 50.** Shlomo Mintz (violin); Philharmonia Orchestra, Giuseppe Sinopoli cond. DEUTSCHE GRAMMOPHON © 423 064-4, © 423 064-2 (65 min).

Performance: *Static*  
Recording: *Very good*

Within a very few years, Shlomo Mintz has given us some treasurable recordings of peaks of the violin repertoire ranging from Bach to Bartók. Judged by the lofty standards he has established for himself in such diverse material as the Sibelius and Prokofiev concertos, the Fauré sonatas, and miniatures by Fritz Kreisler, his Beethoven is a bit of a disappointment. It's not that the concerto isn't played beautifully, but that it seems to lack both momentum and focus. While in the Bach partitas and the Mendelssohn concerto Mintz's beautiful tone conveyed a sense of joyous involvement, his Beethoven is solemn, static, apparently unmotivated. The element of solemnity tends to spoil the two violin romances as well; the charming F Major is overpowered by the weight thrust upon it.

Although the orchestral playing and sound quality are quite good, the static quality of the solo performance keeps this version of the concerto from being competitive. With the same fillers, either Grumiaux or Szeryng, both on Philips, would be a better bet. Better still, RCA's old Heifetz/Munch recording sounds grand in its CD transfer, and it comes with a far more substantial companion piece in the form of the Brahms Violin Concerto with Heifetz and Reiner. *R.F.*

**BRUCKNER: Symphony No. 1, in C Minor.** Berlin Radio Symphony Orchestra, Riccardo Chailly cond. LONDON ● 421 091-1, © 421 091-4, © 421 091-2 (54 min).

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

Bruckner's original (1866) Linz version of his First Symphony has more of the flavor of rugged late Schubert than of

the cosmic strivings of his 1880's masterpieces. The first movement features a pulse halfway between Schubert's walking tunes and Mahler's stern marches. The slow movement is searching and somber, without attaining heights of seraphic rumination, the scherzo is a splendidly craggy affair, and the finale is, in its somewhat episodic fashion, wonderfully self-assertive.

Unlike the Bruckner symphonies whose first published editions were heavily tampered with by his well-meaning friends, the First was reworked for publication by the composer himself in Vienna in 1891, when he had already begun work on his monumental Eighth Symphony. The basic structure was left intact, but there were many modifications of detail in the scoring and, to some extent, tempo indications. As a whole, the revised version discards the stark texture of the original for the grand panoply of the late Bruckner manner.

In this recording of the revised version, Riccardo Chailly makes the best possible case for Bruckner's second thoughts, thanks not only to a splendid performance by the Berlin Radio Symphony but also to a fine recording job in the city's Jesus-Christus Kirche. Chailly's reading of the finale runs a good three minutes longer than is the norm for the Linz version, but this is entirely in keeping with the spirit of Bruckner's revision. *D.H.*

**COUPERIN: L'Apothéose de Lulli; Le Parnasse, ou l'Apothéose de Corelli; Allemande à deux clavecins; La Julliet; Le Létiville; Muséte de choisi; Muséte de taverni.** William Christie, Christophe Rousset (harpsichord). HARMONIA MUNDI © HMC 901269 (55 min).

Performance: *Sensuous*  
Recording: *Exceptional*

The major pieces on this record, depicting Lully and Corelli cavorting around

Riccardo Chailly: splendid Bruckner





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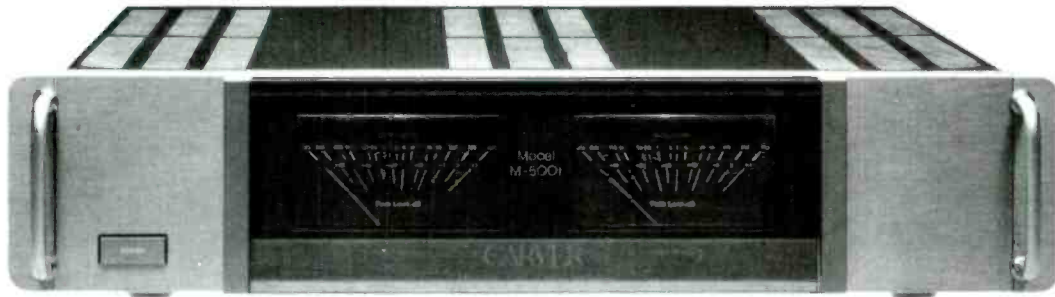
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in heaven, are about as rarefied as the French Baroque gets. Published in 1724, they were intended to unify the warring camps of musicians and music lovers who championed the French and Italian styles. The programmatic aspects seem trivial today, but there's some genuinely engaging music here, especially in *L'Apothéose de Corelli* with its exquisite passage work imitating the flowing waters of the Hippocrene and an imposing fugue.

Although Couperin meant these works to be performed on a variety of instruments, he wrote that they could be performed just as well on two harpsichords, as they are here by William Christie and Christophe Rousset. The instruments they use have a stunningly rich sound, and Christie's customary authority and artistry in this repertoire are richly apparent. The filler pieces are a special treat, particularly the rich *Allmande* from Couperin's second book of harpsichord pieces and the two musettes, which have a wit, energy, and heat that remind us there is more in Couperin (and the French Baroque in general) than lofty tributes to the dearly departed. *David Patrick Stearns*

**DONIZETTI:** *Anna Bolena*. Joan Sutherland (soprano), Anna Bolena; Samuel

Ramey (bass), Enrico VIII; Jerry Hadley (tenor), Riccardo; Susanne Mentzer (mezzo-soprano), Giovanna; Bernadette Manca di Nissa (mezzo-soprano), Smeton; others. Orchestra and Chorus of the Welsh National Opera, Richard Bonyngne cond. LONDON ● 421 096-1 three LP's, © 421 096-2 three CD's (193 min).

Performance: *Disappointing*  
Recording: *Good*

Following close upon her rerecording of Bellini's *Norma* comes Joan Sutherland's new *Anna Bolena*. Sadly, as in the *Norma*, her performance in the Donizetti opera offers only a nostalgic reminder of the staggering vocal displays we have come to associate with this artist. While neither *Norma* nor *Anna* is entirely Sutherland's temperamental cup of tea—she has none of Callas's fire and intensity—*Anna*, being the more acted upon, is a role nearer to Sutherland's disposition. The poignancy and hopelessness of *Anna*'s relationship to Enrico (Henry VIII) inspire the more affecting moments of the Australian soprano's performance. The scenes of angry defiance, however, upon which the excitement of the work depends, are lost in her effortful and diminished vocalism.

As Enrico, Samuel Ramey sings with his accustomed refinement and beauty of tone—also, happily, with more edge to his characterization than there was in his Oroveso in the *Norma* recording. He shares vocal laurels here with Susanne Mentzer, who, despite a bit of forcing at the top in “big” moments, is a thoroughly convincing Giovanna. Jerry Hadley has (will one soon be obliged to say “had”?) a lovely *lyric* tenor; Riccardo, however, is a role not far removed from the genre of the Italian *heroic* tenor. Hadley strives valiantly to meet its demands of volume and tessitura but is, alas, ultimately vanquished. The remaining members of the cast are commendable, especially Bernadette Manca di Nissa, who brings to Smeton's brief scene a strong sense of style.

The recording is good but not exceptional in terms of either brilliance or clarity. The work of the chorus and orchestra is exact, and the chorus shows a nice sense of involvement with the action. Richard Bonyngne conducts with his usual verve and control but adds no new dimension to the score, which I feel is one of Donizetti's greatest. *R.A.*

**DVOŘÁK:** *Violin Concerto in A Minor, Op. 53*. Joseph Silverstein (violin); Utah Symphony Orchestra, Christo-

# What Mozart Sounds Like On



The Asti Collection. Amplifiers, Tuners And Receivers.



pher Wilkins cond. *Serenade for Strings in E Major, Op. 22*. Utah Symphony Orchestra, Joseph Silverstein cond. PRO ARTE © CDD 389 (62 min).

Performance: *Unforced*  
Recording: *Good*

Except for the meltingly lovely slow movement, the Dvořák Violin Concerto has never been at the top of my list of preferred essays in the genre. Yet there are more than half a dozen versions currently available on CD. There must be something in the work that has special appeal for violin virtuosos.

What I like about the Joseph Silverstein performance is that he does not try to make the music sound bigger than it is. He takes an aristocratic approach, yet he warmly projects Dvořák's melodies, reaching a peak of songful intensity in the slow movement. In the finale he brings his considerable virtuosity to bear, with maximum effect. The Utah Symphony's associate conductor, Christopher Wilkins, provides fine support, and the concerto is excellently recorded in a warm, not too reverberant ambience.

There are more than a dozen CD's available of the youthful and beguiling string serenade, but this one stands up to the best of the lot by virtue of Silver-

stein's conducting. He treats the music in a totally unforced and flowing manner, once again taking pains not to make it sound bigger than it was meant to be. The tender phrasings in the opening movement, the enchanting lilt of the ensuing waltz movement, and the splendidly vital attacks that inform the lively reading of the finale are only the most noteworthy pleasures of this performance, which again has fine, warm recorded sound. *D.H.*

**HANDEL: *Orchestral Suites*.** *Overture in D Minor (arr. Elgar); The Gods Go a'Begging (arr. Beecham); Solomon, Arrival of the Queen of Sheba; Handel at Bath (arr. Bennett); The Faithful Shepherd (arr. Beecham)*. Royal Philharmonic Orchestra, Yehudi Menuhin cond. RPO/MCA ● MCA-6231, © MCAC-6231. © MCAD-6231 (63 min).

Performance: *Grand*  
Recording: *Splendid*

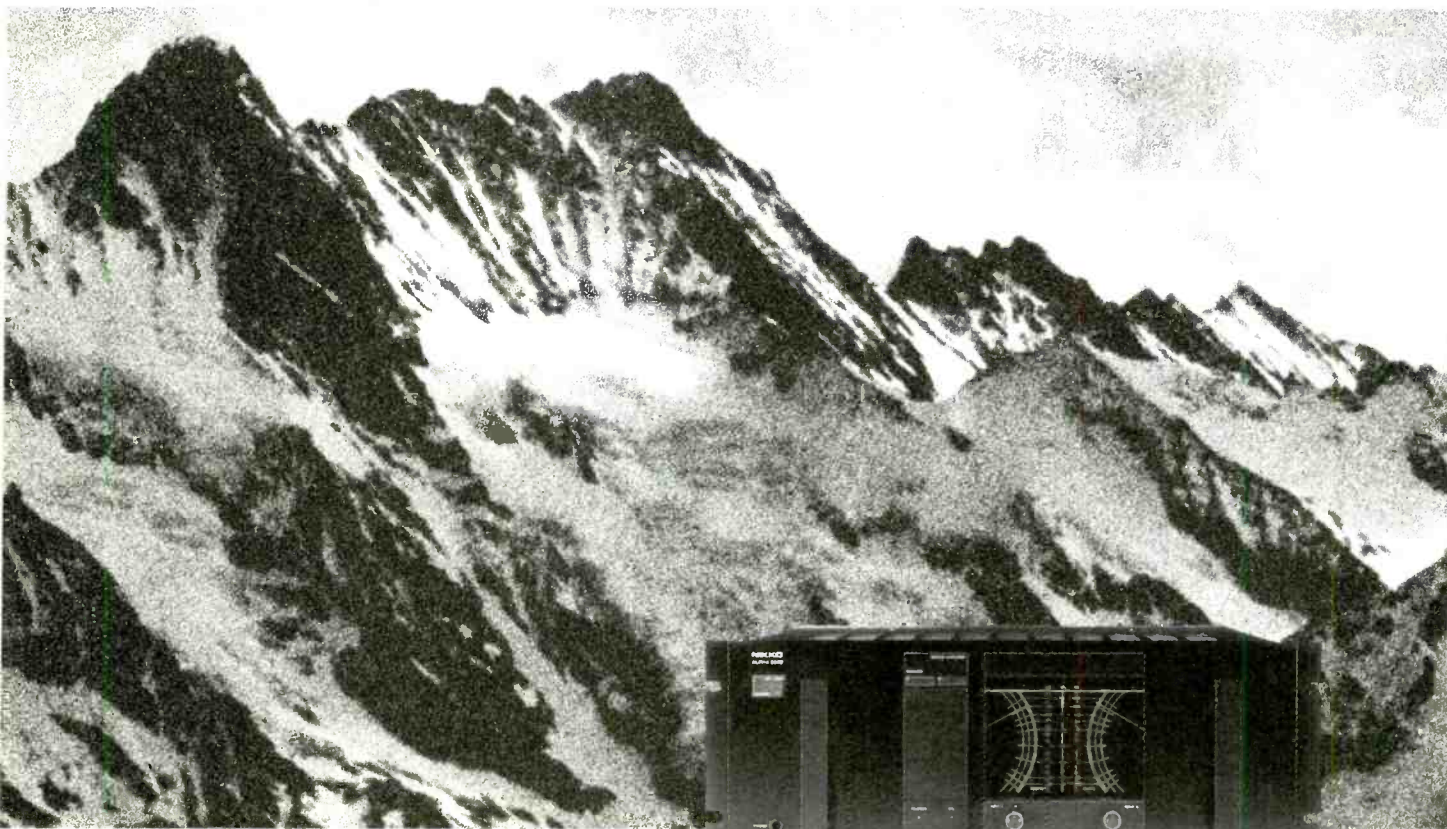
The English have adored Handel's music from the moment he set foot on their island to this day. They have also had absolutely no qualms about updating it to keep abreast of musical fashion. Even Handel himself did this every time a work was carried over into another sea-

son. Twenty-five years after his death, *Messiah* was performed with "upward of Five Hundred Musicians," and seventy-five years after his death London's Crystal Palace boasted a performance by 2,765 vocalists and 460 instrumentalists. While adherents of the early-music movement regard such arrangements and orchestrations with the same abhorrence that movie directors have for the colorization of old black-and-white films, the Elgars, Beechams, and Bennetts are supported by a long historical precedent, and this record of Handel suites follows that precedent without apology.

Listened to for its skillful and imaginative orchestrations and full-blown Romantic performances, this is a splendid record. Under Yehudi Menuhin's direction, the Royal Philharmonic sets us awash in lush sonorities. Menuhin savors the long lines and teases them into sumptuous contours by means of dynamics and rubato. Even the faintest remembrance of the eighteenth century is overwhelmed by Romantic opulence as Handel proudly emerges in full Edwardian finery. *S.L.*

**HANDEL: *Sonata in G Minor for Viola da Gamba and Harpsichord* (see BACH)**

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# STEREO REVIEW'S CALENDAR OF CLASSICAL COMPOSERS



In response to popular demand, we have reprinted the five-page, fold-out Calendar of Classical Composers by William Livingstone published in the November 1987 issue. In addition to showing the life spans of 147 major composers, the calendar includes pithy descriptions of the principal musical stylistic periods. For each full-color copy, please send a mailing label with your name and address along with a check or money order for \$2 to cover postage and handling (no cash or stamps) to Stereo Review, Calendar of Classical Composers, 1515 Broadway, New York, NY 10036. Outside the United States, send \$3 (payable in U.S. funds).

**HINDEMITH:** *Mathis der Maler*; *Trauermusik*; *Symphonic Metamorphosis of Themes by Carl Maria von Weber*. Geraldine Walther (viola); San Francisco Symphony, Herbert Blomstedt cond. LONDON ©421 523-4, ©421 523-2 (56 min).

Performance: *Solid*  
 Recording: *Warm*

Paul Hindemith's *Mathis der Maler* was originally an opera about the great Alsatian painter Matthias Grünewald. It became a symphony in 1934 when Wilhelm Furtwängler asked Hindemith for a new piece for a Berlin Philharmonic tour. Ironically, this popular and nationalistic work, probably the composer's best known and most liked, got both Hindemith and Furtwängler in trouble with the Nazis and led to the composer's emigration from Germany. The *Trauermusik*, or *Funeral Music*, which Hindemith wrote two years later in London, is a work very close to *Mathis* in style, while the bouncy *Symphonic Metamorphosis* represents the composer's American period. It derives from a never-completed ballet project with Massine, who first suggested using themes of Weber. All three works serve as ideal material for Herbert Blomstedt, who's been conducting the San Francisco Symphony since 1984 and given that orchestra a new vitality. They are attractive pieces and are extremely well performed, with warm musicality. A beautiful recording, too. *E.S.*

**KREISLER** (arr. Rachmaninoff): *Liebesleid*; *Liebesfreud* (see Best of the Month, page 116)

**MAHLER:** *Symphony No. 2, in C Minor, "Resurrection"* (see Best of the Month, page 114)

**MESCHWITZ:** *Tier-Gebete* (see SAINT-SAËNS)

**MESSIAEN:** *Saint François d'Assise*. José van Dam (bass), Saint Francis; Christiane Eda-Pierre (soprano), the Angel; Kenneth Riegel (tenor), the Leper; others. Chorus and Orchestra of the Paris Opéra, Seiji Ozawa cond. CYBELIA/QUALITON © CY 833-836 four CD's (246 min).

Performance: *Fabulous*  
 Recording: *Vivid*

Olivier Messiaen, France's leading composer and one revered by his countrymen, is eighty years old this month, on December 10. He wrote this, his first and only opera, on a commission awarded him by the Paris Opéra back in the Seventies. He worked on it for more than eight years, finally producing a four-hour celebration of the Franciscan legend calling for seven solo singers, a massive chorus of over a hundred voices (which at one point assumes the role of Christ), and an equally massive orchestra.

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CIRCLE NO. 48 ON READER SERVICE CARD

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Recorded during its first performances in Paris, in late fall 1983, this epic but at the same time intensely meditative work occupies four compact discs, and there's no doubt that only the most dedicated Messiaen admirer could be expected to stick it out in one sitting. But under Seiji Ozawa's inspired direction, and with a dedicated cast headed by José van Dam in the title role, the music weaves its magic for anyone the least bit attuned to the composer's glinting, many-layered compositional style. The recording itself vividly conveys the fervor of the live performances at which it was made. My only complaint about the package is that the libretto provided is in English only, which makes following Messiaen's French text almost impossible. *Christie Barter*

**MOZART: Violin Concerto No. 4, in D Major (K. 218); Violin Concerto No. 5, in A Major (K. 219).** Gidon Kremer (violin); Vienna Philharmonic Orchestra, Nikolaus Harnoncourt cond. DEUTSCHE GRAMMOPHON © 423 107-4, © 423 107-2 (50 min).

Performance: *Wonderful*  
Recording: *Wonderful*

This is an almost perfect Mozart recording because of its sensitive blending of

modern and historic performance practices and the superb musicianship of Gidon Kremer and Nikolaus Harnoncourt. As Harnoncourt has demonstrated before, early performance practices can be translated to the modern orchestra and result in a clarity of tone and articulation that is fresh and arresting. Although Kremer is in no way connected with the early-music movement, his keen sense of articulation, rare in violinists today, is perfectly attuned to the Classical articulation that is such an integral part of Mozart's music. Add in his inborn wit and elegance, and you have a style that is ideal for bringing out the playful structure of these works. This release, which completes Kremer and Harnoncourt's Mozart concerto series, is a must. *S.L.*

**MOZART: Symphony No. 32, in G Minor (K. 318); Symphony No. 35, in D Major (K. 385, "Haffner"); Symphony No. 36, in C Major (K. 425, "Linz").** Scottish Chamber Orchestra. Jukka-Pekka Saraste cond. VIRGIN © 90702-1, © 90702-4, © 90702-2 (69 min).

Performance: *Spirited*  
Recording: *Good*

Jukka-Pekka Saraste's approach to these Mozart symphonies is lusty and

full of bounce, which is fine for the outer movements but presents some problems, such as finding a working tempo, in the slow ones. The movements that suffer the most are the minuets, where the boisterousness is more appropriate to Haydn's rustic dances than to Mozart's courtly ones. But even so, Saraste does provide some rewarding moments, nicely turned phrases, and a flexibility of tempo that together make the readings enjoyable. *S.L.*

**RACHMANINOFF: Variations on a Theme of Chopin, Op. 22; Five Preludes; Mélodie, Op. 3, No. 3** (see Best of the Month, page 116)

**RIDOUT: Ferdinand; Little Sad Sound** (see SAINT-SAËNS)

**ROREM: String Symphony; Sunday Morning; Eagles.** Atlanta Symphony Orchestra, Louis Lane cond. NEW WORLD © NW-353-1, © NW-353-2.

Performance: *Good*  
Recording: *Lush*

Ned Rorem is so well known for his songs and other vocal works that it comes as something of a surprise to realize that the bulk of his output is *(Continued on page 160)*



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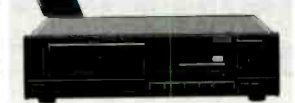


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Sale Price **\$479<sup>95</sup>** Retail \$699

## Amplifiers & Tuners



**Nikko NA-2000**  
High Power Integrated Amplifier  
• 100 watts/channel • Recording output selector • 2-tape monitors • Bi-directional dubbing • MC input • DC amplifier section

Sale Price **\$199<sup>95</sup>** Retail \$350



**SAE T-101**  
Computer Direct Line AM/FM Tuner  
• 16 presets • Auto & manual tuning • Signal strength, multipath and level indicators • Fully electronic operation • 19" rack mountable

Sale Price **\$249<sup>95</sup>** Retail \$650

## Double Cassette Decks



**Teac W-990RX**  
Stereo Double Reverse Cassette Deck  
• Dolby B/C and dbx • Cobalt amorphous tape heads • Record timer • 3-motor transport • Intro check • Random program dubbing system • Auto tape select • Wireless remote

Sale Price **\$499<sup>95</sup>**

- |                                     |  |  |                     |
|-------------------------------------|--|--|---------------------|
| <b>Nikko ND-850</b>                 |  |  | \$279 <sup>95</sup> |
| Auto-reverse double cassette        |  |  |                     |
| <b>Technics RS-T330R</b>            |  |  | \$249 <sup>95</sup> |
| Auto-reverse, high speed dubbing    |  |  |                     |
| <b>Teac W-450R</b>                  |  |  | \$199 <sup>95</sup> |
| Auto-reverse double cassette        |  |  |                     |
| <b>Teac W-660R</b>                  |  |  | \$299 <sup>95</sup> |
| Auto-rev, dual cassette, Dolby B/C  |  |  |                     |
| <b>Sharp RT-W800</b>                |  |  | \$159 <sup>95</sup> |
| Auto-rev, dual cassette, high speed |  |  |                     |
| <b>Sherwood S-289RDR</b>            |  |  | \$199 <sup>95</sup> |
| Auto-rev, dual cassette, Dolby B/C  |  |  |                     |

## Turntables

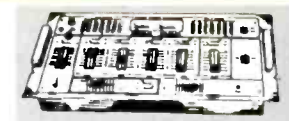


**Technics SL-QD22**  
Direct Drive Turntable  
• Quartz locked drive system • Auto return with separate tonearm motor • P-mount cartridge system • Front panel controls • Dust cover • Black finish

Sale Price **\$119<sup>95</sup>** Retail \$165

- |                                      |  |  |                     |
|--------------------------------------|--|--|---------------------|
| <b>ADC RC-1</b>                      |  |  | \$59 <sup>95</sup>  |
| Automatic record changer             |  |  |                     |
| <b>ADC LT-34</b>                     |  |  | \$79 <sup>95</sup>  |
| Linear tracking turntable            |  |  |                     |
| <b>Technics SL-BD20</b>              |  |  | \$79 <sup>95</sup>  |
| Semi-automatic turntable             |  |  |                     |
| <b>Akai APA-305CB</b>                |  |  | \$89 <sup>95</sup>  |
| Semi-automatic, belt-drive turntable |  |  |                     |
| <b>Sherwood ST-887</b>               |  |  | \$79 <sup>95</sup>  |
| Direct drive, semi-automatic         |  |  |                     |
| <b>Gemini DJ-Q1500</b>               |  |  | \$259 <sup>95</sup> |
| Direct drive DJ turntable            |  |  |                     |

## Mixers & Tuners



**Gemini MX-5200**  
Disco Mixer with Equalizer  
• 7-band graphic equalizer • 3-phonos inputs • 4-line inputs • 2-microphone inputs • Talkover switch • Precision components • Separate cue • Rack mountable

Sale Price **\$159<sup>95</sup>** Retail \$199

- |                                   |  |  |                     |
|-----------------------------------|--|--|---------------------|
| <b>Atus AM-100</b>                |  |  | \$79 <sup>95</sup>  |
| 4-input phono mixer               |  |  |                     |
| <b>Gemini MX-6200</b>             |  |  | \$179 <sup>95</sup> |
| 3-Phono inputs, 7-band EQ         |  |  |                     |
| <b>Gemini MX-4200</b>             |  |  | \$109 <sup>95</sup> |
| 2-phonos inputs, echo, cueing     |  |  |                     |
| <b>Technics SU-V450</b>           |  |  | \$299 <sup>95</sup> |
| 50 watts X 2 integrated amplifier |  |  |                     |
| <b>Technics SU-V650</b>           |  |  | \$399 <sup>95</sup> |
| 90 watts X 2 integrated amplifier |  |  |                     |
| <b>Technics ST-G50</b>            |  |  | \$189 <sup>95</sup> |
| AM/FM digital quartz tuner        |  |  |                     |

## Portable Digital Audio



**Panasonic RX-FD55**  
AM/FM Cassette CD Player  
• XBS extra bass system for big sound • Programmable CD player • Synchro tape/CD dubbing • 4-band EQ • Auto reverse

Sale Price **\$349<sup>95</sup>** Retail \$429

- |                                    |  |  |                     |
|------------------------------------|--|--|---------------------|
| <b>Sharp QT-CD20</b>               |  |  | \$219 <sup>95</sup> |
| AM/FM cassette, CD portable        |  |  |                     |
| <b>Sony CF-D66</b>                 |  |  | \$319 <sup>95</sup> |
| AM/FM CD cassette portable         |  |  |                     |
| <b>Sony CF-DD75</b>                |  |  | \$499 <sup>95</sup> |
| AM/FM CD cassette w/Mega Bass      |  |  |                     |
| <b>Sony CF-D444</b>                |  |  | \$269 <sup>95</sup> |
| AM/FM CD cassette, speakers        |  |  |                     |
| <b>Panasonic RX-FD75</b>           |  |  | \$529 <sup>95</sup> |
| A/R dual cassette, CD, XBS bass    |  |  |                     |
| <b>JVC PC-V1J</b>                  |  |  | \$479 <sup>95</sup> |
| AM/FM dual cassette, CD, 5-band EQ |  |  |                     |

## Stereo Cassette Decks



**Teac V-285CHX**  
Stereo Cassette Deck  
• Dolby B & C noise reduction • Dolby HX Pro headroom extension system • Two tape head design • DC motor • Tape bias control • Black finish

Sale Price **\$99<sup>95</sup>** Retail \$160

- |                                       |  |  |                     |
|---------------------------------------|--|--|---------------------|
| <b>Teac R-425</b>                     |  |  | \$119 <sup>95</sup> |
| Auto-reverse, Dolby B/C               |  |  |                     |
| <b>Teac R-435X</b>                    |  |  | \$149 <sup>95</sup> |
| Auto-reverse, Dolby B/C & dbx         |  |  |                     |
| <b>Teac R-616X</b>                    |  |  | \$299 <sup>95</sup> |
| Auto-reverse, Dolby B/C, HX Pro       |  |  |                     |
| <b>Teac V-670</b>                     |  |  | \$279 <sup>95</sup> |
| 3-heads, 2-motors, Dolby B/C, HX Pro  |  |  |                     |
| <b>Teac V-970X</b>                    |  |  | \$479 <sup>95</sup> |
| 3-head/motor, Dolby B/C & dbx, HX Pro |  |  |                     |
| <b>Technics RS-B29R</b>               |  |  | \$199 <sup>95</sup> |
| Auto-reverse Dolby B/C                |  |  |                     |

## Audio Accessories



**Terk FM-8500**  
Electronic Indoor FM Antenna  
• Omnidirectional design improves reception • Adjustable gain control • Amplifies incoming signal by up to 24 times • AC operated • One-year warranty

Sale Price **\$34<sup>95</sup>** Retail \$69

- |                           |  |  |                     |
|---------------------------|--|--|---------------------|
| <b>Terk FM-9500</b>       |  |  | \$59 <sup>95</sup>  |
| Electronic FM antenna     |  |  |                     |
| <b>Terk FM-9600</b>       |  |  | \$79 <sup>95</sup>  |
| New Electronic FM antenna |  |  |                     |
| <b>Parsec LS-3</b>        |  |  | \$29 <sup>95</sup>  |
| Electronic FM antenna     |  |  |                     |
| <b>Parsec LS-4</b>        |  |  | \$54 <sup>95</sup>  |
| Schatz design FM antenna  |  |  |                     |
| <b>Nikko CO-23</b>        |  |  | \$299 <sup>95</sup> |
| 2-way stereo crossover    |  |  |                     |
| <b>Nikko NPS-1R</b>       |  |  | \$79 <sup>95</sup>  |
| Add-on remote control     |  |  |                     |

## Portable Audio



**Panasonic RX-SA79**  
AM/FM Cassette Portable  
• XBS extra bass system • AM/FM stereo tuner • 3-band EQ • Auto reverse cassette playback with Dolby B • NiCad battery with recharger • Lightweight stereo headphones

Sale Price **\$139<sup>95</sup>** Retail \$189

- |                                 |  |  |                     |
|---------------------------------|--|--|---------------------|
| <b>Sony WM-AF42</b>             |  |  | \$49 <sup>95</sup>  |
| AM/FM auto-rev cassette Walkman |  |  |                     |
| <b>Sony WM-F73 Sports</b>       |  |  | \$99 <sup>95</sup>  |
| AM/FM cassette Walkman          |  |  |                     |
| <b>Toshiba KT-4087</b>          |  |  | \$149 <sup>95</sup> |
| AM/FM A/Rev cassette w/Dolby    |  |  |                     |
| <b>Panasonic RX-SA60</b>        |  |  | \$32 <sup>95</sup>  |
| AM/FM cassette portable player  |  |  |                     |
| <b>Sony SR-FM40W</b>            |  |  | \$49 <sup>95</sup>  |
| AM/FM radio with 7 presets      |  |  |                     |
| <b>Sony WM-F100-3</b>           |  |  | \$129 <sup>95</sup> |
| AM/FM cassette "Super Walkman"  |  |  |                     |

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**Portable Recorders**



**Sony WM-D6C Walkman "Pro" Stereo Cassette Recorder**  
 • Compact pro performance • Record level • Dolby B and C NR • Variable speed control • Quartz lock capstan drive • Carry case • MDR stereo headphones

Sale Price **\$329<sup>95</sup>** Retail \$479

**Sony WM-A39**  
 Auto-reverse Walkman with Mega Bass **\$54<sup>95</sup>**

**Sony TC-S430**  
 Stereo recorder with speaker **\$89<sup>95</sup>**

**Sony TC-D5M**  
 Pro stereo recorder with Dolby **CALL**

**Panasonic RN-15**  
 2-speed microcassette recorder **\$149<sup>95</sup>**

**Panasonic RQ-382**  
 Auto-rev. voice activated recorder **\$114<sup>95</sup>**

**Toshiba KT-4188**  
 Auto-rev. Dolby B, wired remote **\$149<sup>95</sup>**

**Portable Audio**



**Panasonic RX-CW43 3-Piece Portable Component**  
 • AM/FM tuner with 3-presets • Stereo double cassette deck • High speed dubbing • Auto reverse playback • Detachable 2-way speakers • Black

Sale Price **\$139<sup>95</sup>** Retail \$169

**Panasonic RX-FM14**  
 AM/FM cassette portable **\$49<sup>95</sup>**

**Sony CF-SW500**  
 AM/FM dual cassette, detachable spks **\$149<sup>95</sup>**

**JVC PC-V33J**  
 AM/FM cassette, Hyper Bass system **\$119<sup>95</sup>**

**Sony CF-S930 "Sports"**  
 AM/FM cassette portable **\$109<sup>95</sup>**

**Sony CF-SDW80**  
 AM/FM dual cassette with Mega Bass **\$299<sup>95</sup>**

**Sony CF-S1010**  
 AM/FM cassette, auto-rev. 5-band EQ **\$89<sup>95</sup>**

**Accessories Specials**



**Memorex M-RX-60 Remote Control Extender**  
 • Now you can put a VCR in every room without the added expense • Use your existing remote controls from any room in the house • Easy to install

Sale Price **\$59<sup>95</sup>** Retail \$99

**Nalad RF-2**  
 Record storage system **\$18<sup>95</sup>**

**Nalad CD-1**  
 Compact disc storage system **\$14<sup>95</sup>**

**Audio Technica AT-605**  
 4-vibration absorbing feet **\$24<sup>95</sup>**

**Monster Cable MV-2AV**  
 2-meter video cables **\$39<sup>95</sup>**

**Discwasher Wet**  
 VHS head cleaner **\$9<sup>95</sup>**

**Geneva PF-211**  
 Pro bulk tape eraser **\$39<sup>95</sup>**

**This Month's**

**Stereo Headphones**



**Beyerdynamic DT-990 Audiophile Stereo Headphones**  
 • Open style headphone with an unbelievable frequency response of 5-35kHz • Unique moving coil assembly • Exceptional transient response

Sale Price **\$179<sup>95</sup>** Retail \$220

**Beyerdynamic DT-220**  
 Closed ear headphones **\$99<sup>95</sup>**

**Beyerdynamic DT-320**  
 Semi-open ear headphone **\$69<sup>95</sup>**

**Beyerdynamic DT-330MK-II**  
 Lightweight semi-open air **\$74<sup>95</sup>**

**Beyerdynamic DT-550**  
 Semi-open air, lightweight **\$119<sup>95</sup>**

**Beyerdynamic DT-770**  
 Closed ear headphone **\$149<sup>95</sup>**

**Beyerdynamic DT-880**  
 Semi-open air headphone **\$139<sup>95</sup>**

**Beyerdynamic DT-880/Studio**  
 Pro studio headphones **\$184<sup>95</sup>**

**Sennheiser HD-222**  
 Closed ear headphone **\$69<sup>95</sup>**

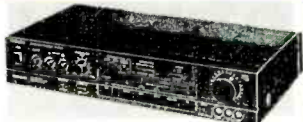
**Sennheiser HD-250**  
 Studio quality headphone **\$169<sup>95</sup>**

**Sennheiser HD-30**  
 Lightweight mini headphone **\$34<sup>95</sup>**

**Sennheiser HD-430**  
 Open air headphone **\$99<sup>95</sup>**

**Sennheiser HD-480**  
 Digital ready **\$79<sup>95</sup>**

**Surround Sound Specials**



**Technics SH-AV40 Dolby Surround Sound Decoder**  
 • Separate left/right Dolby calibration controls • 4 audio/video inputs • Fluorescent display • Master volume control • 20 watts X 2 rear channel outputs • Black finish

Sale Price **\$179<sup>95</sup>** Retail \$250

**Audiosource SS-One**  
 Dolby surround sound w/matrix **\$129<sup>95</sup>**

**SSI M360-II**  
 Dolby surround w/45 watts rear output **\$299<sup>95</sup>**

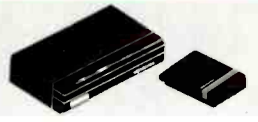
**Bose Video Roommate**  
 Powered shielded mini speaker **\$299<sup>95</sup>**

**Memorex DS-10**  
 Video surround sound **\$129<sup>95</sup>**

**SSI M1000**  
 Dolby surround sound, 20 watts rear **\$199<sup>95</sup>**

**Technics SH-AV55**  
 Dolby surround sound **\$549<sup>95</sup>**

**Audio Accessories**



**Memorex CS-40 Cordless Stereo Headphone System**  
 • Now you can free yourself from headphone extension cords • AC powered transmitter • Battery powered receiver that goes with you • Headphones not included

Sale Price **\$69<sup>95</sup>** Retail \$109

**Audiosource LL-C1**  
 Compact disc laser cleaner **\$24<sup>95</sup>**

**Monster Cable 15/15**  
 15 meters of speaker cable **\$29<sup>95</sup>**

**Monster Cable ILCD-1M**  
 1-meter of Interlink CD cable **\$38<sup>95</sup>**

**Monster Cable INT300/JM**  
 1 meter of Interlink 300 cable **\$19<sup>95</sup>**

**DiscWasher DiscSet**  
 Record cleaner system **\$14<sup>95</sup>**

**DiscWasher Z-Stat**  
 Anti-static device **\$18<sup>95</sup>**

**Video Accessories**



**Vidicraft "Play Right" Digital Video Stabilizer**  
 • Eliminate color flashing, loss or color, picture rolling, streaking and jittering while playing back copy-protected movies • Fully automatic • Easy to connect

Sale Price **\$99<sup>95</sup>** Retail \$149

**Multivision 2.1**  
 Picture-in-picture video system **\$249<sup>95</sup>**

**Ambico V-0805**  
 10-hour belt powerpack **\$74<sup>95</sup>**

**Memorex CP-8**  
 Universal remote control **\$99<sup>95</sup>**

**Rabbit TR-7000**  
 VCR remote extender **\$59<sup>95</sup>**

**Recaton V-623**  
 MTS stereo decoder **\$79<sup>95</sup>**

**Sima SCV**  
 Slide-to-video transfer system **\$34<sup>95</sup>**

**Video Specials**



**Akai VS-33U 4-Head VHS HQ Video Recorder**  
 • DX4-head with HQ • Exclusive quick start tape handling system • 107 channel cable ready tuner with 62 presets • Wireless remote • 30-day/4-event programming • Black finish

Sale Price **\$329<sup>95</sup>** Retail \$449

**Panasonic PV-4860**  
 4-Head VHS Hi-Fi video recorder **\$499<sup>95</sup>**

**Panasonic PV-S4864**  
 5-VHS 4-head Hi-Fi VCR **\$749<sup>95</sup>**

**Sony KV-27SXRI0**  
 27-Inch XBR color TV/Monitor **\$999<sup>95</sup>**

**Panasonic PV-M2028**  
 20-Inch color TV/VCR combo **\$599<sup>95</sup>**

**Panasonic PV-M1328**  
 13-Inch color TV/VCR combo **\$569<sup>95</sup>**

**Samsung TC-3823T**  
 13-Inch Color TV, cable ready **\$199<sup>95</sup>**

**Portable Video**



**Sony FD-L320 2.7-Inch Color LCD Television**  
 • Pocket size television, more portable than ever • Large LCD (Liquid Crystal Display) with natural facial tones • Built-in AM/FM stereo tuner

Sale Price **\$449<sup>95</sup>** Retail \$570

**Casio TV-4000**  
 2.7-Inch color LCD TV **\$259<sup>95</sup>**

**Sony FD10A**  
 2-Inch B&W Watchman **\$89<sup>95</sup>**

**Sony FD-42A**  
 4-Inch B&W Watchman **\$109<sup>95</sup>**

**Casio TV-500**  
 2-Inch color LCD TV **\$159<sup>95</sup>**

**RCA CSM-055V**  
 5-Inch color TV w/AM/FM tuner **\$229<sup>95</sup>**

**Sharp JC-AV1**  
 AM/FM cassette w/2-Inch LCD TV **\$119<sup>95</sup>**

**Camcorder Specials**



**Panasonic PV-S350 Super-VHS Camcorder**  
 • S-VHS system for 400 line resolution - Digital effects • High speed shutter • 8.1 power macro zoom • Infrared auto focus • Solid state CCD pickup

**CALL FOR BEST PRICE**

**Panasonic PV-110**  
 VHS-C auto-focus camcorder **CALL**

**Panasonic PV-400**  
 VHS camcorder, 6:1 zoom, free case **CALL**

**JVC GR-25U**  
 VHS-C Camcorder, auto-focus, zoom **CALL**

**JVC GR-S55U**  
 S-VHS-C Camcorder, power zoom **CALL**

**Sony CCD-V5**  
 8mm Camcorder, auto-focus **CALL**

**Sony CCD-F40**  
 8mm Camcorder, 6:1 zoom, 9 lux **CALL**

**Audio Add-Ons**



**dbx 224X-DS Type II Noise Reduction**  
 • Rack mountable noise reduction system which will effectively double your tape deck's dynamic range • 40db of noise reduction • 2-tape deck switching with monitoring

Sale Price **\$179<sup>95</sup>** Retail \$299

**dbx 18XD5**  
 1 band dynamic expansion system **\$179<sup>95</sup>**

**dbx 200XG**  
 Program route selector **\$79<sup>95</sup>**

**Creative Point CP-1800**  
 Holds 18 cassettes **\$16<sup>95</sup>**

**Monster Cable ZapIt**  
 Remote control power booster **\$24<sup>95</sup>**

**Creative Point CD2400**  
 Hold 24 compact discs **\$24<sup>95</sup>**

**Teac E-3**  
 Cassette head demagnetizer **\$44<sup>95</sup>**

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**J&R Music World, Dept. SRT288, 23 Park Row, New York City, NY 10038**







# Super Specials

## Headphone Specials



**Sony MDR-CD6**  
 Lightweight Digital Stereo Headphone  
 • Digital ready 2.25k Hz frequency response  
 • High sensitivity • Uni-match plug included  
 • The perfect headphone for portable CD players

Sale Price	Retail Price
<b>\$78<sup>88</sup></b>	\$119
<b>Koss Pro450</b> Studio quality headphones	\$138 <sup>88</sup>
<b>Koss JCK200</b> Wireless headphones	\$118 <sup>88</sup>
<b>Koss Pro4AAA+</b> Closed ear headphones	\$38 <sup>88</sup>
<b>Koss PortaPro</b> Lightweight portable design	\$39 <sup>95</sup>
<b>Sony MDRV4</b> Digital ready portable headphones	\$79 <sup>95</sup>
<b>Sony MDRE464</b> Digital ready bud headphones	\$34 <sup>95</sup>
<b>Sony MDRA60</b> Designer style lightweight headphones	\$59 <sup>95</sup>
<b>Sony MDRO05L</b> Extra lightweight headphones	\$9 <sup>95</sup>
<b>Sony MDR484</b> In ear digital ready	\$58 <sup>95</sup>
<b>Sony MDRV4</b> Folding portable headphones	\$59 <sup>95</sup>
<b>Sony MDRM66</b> Digital ready portable	\$69 <sup>95</sup>
<b>Sennheiser HD50</b> Lightweight portable headphones	\$59 <sup>95</sup>

## Video Tape Specials



**Scotch T-160EG + High Grade VHS Video Tape**  
 • We've slashed the price on Scotch's EG+ high grade video tape • Finer colors, detail and resolution • Great for all your recording needs

Sale Price	Retail Price
<b>\$45<sup>95</sup></b>	10-Pack
<b>TDK T120-EHG</b> Extra high grade VHS	Each \$4 <sup>99</sup>
<b>TDK T120-HS</b> High standard VHS	Each \$3 <sup>49</sup>
<b>Fuji T-120HQ</b> Standard grade VHS	Each \$3 <sup>49</sup>
<b>Fuji T-120XG</b> High grade VHS	Each \$7 <sup>99</sup>
<b>Sony L750-ES</b> Standard grade Beta	Each \$2 <sup>99</sup>
<b>Sony L750ES-HG</b> Extra high grade	Each \$4 <sup>49</sup>

## Musical Keyboards



**Yamaha DD-5**  
 Portable Digital Drum Set  
 • 4 touch sensitive drum pads • 12 PCM percussion instrument sounds • 30 preset auto rhythms • Tempo control • Intro/fill-in • Drum sticks included

Sale Price	Retail Price
<b>\$99<sup>95</sup></b>	\$99
<b>Yamaha PSS-680</b> Portable stereo PCM keyboard	\$249 <sup>95</sup>
<b>Yamaha PSS-480</b> 49-key mid-size keyboard, 100 sounds	\$168 <sup>95</sup>
<b>Casio DG-10</b> Guitar style instrument	\$249 <sup>95</sup>
<b>Casio DH-100</b> MIDI wind instrument	\$144 <sup>95</sup>
<b>Casio DG-20</b> Guitar instrument with 20 sounds	\$299 <sup>95</sup>
<b>Casio PT-100</b> 32-key mini-keyboard	\$44 <sup>95</sup>

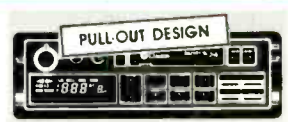
## Radar Detectors



**BEL 944 "Express 3"**  
 3-Band Radar Detector  
**Whistler SpecRemote 2**  
 Remote Radar Detector

Your Choice	Retail Price
<b>\$209<sup>99</sup></b>	\$249
<b>BEL 976 "Vector 3"</b> 3-band radar detector	\$168 <sup>88</sup>
<b>Whistler Spectrum 2</b> Super hel radar detector	\$178 <sup>95</sup>
<b>Uniden RD-9XL</b> Super Small radar detector	\$159 <sup>95</sup>
<b>Fox MicroFox</b> Small X/K band radar detector	\$134 <sup>95</sup>
<b>Cobra RD-3168</b> Small super hel radar detector	\$144 <sup>95</sup>
<b>Cobra RD-3170</b> Voice synthesized radar detector	\$179 <sup>95</sup>

## Car Stereo



**Clarion 8825RT**  
 Digital AM/FM Cassette Auto Receiver  
 • New slide-out chassis • 18-station preset AM/FM tuner • Seek & scan tuning • Auto reverse cassette • Dolby B • Music search • 25 watts per channel • LCD display

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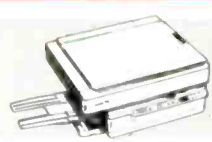
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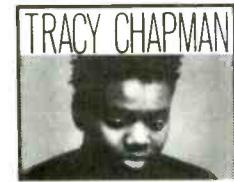


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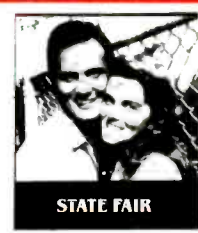
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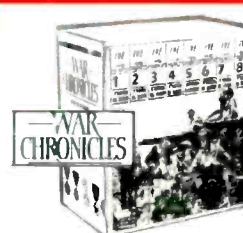
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instrumental. His 1976 Pulitzer Prize was for an orchestral work, and the three works on this record are eloquent testimony to his skill. He is a kind of pre-postmodernist; that is, he's stuck to his conservative guns through the years, producing a substantial and highly musical body of work.

Roem is not, however, a classicist. His inspirations are highly literary—Walt Whitman in the 1958 *Eagles* and Wallace Stevens in 1977's *Sunday Morning*. The String Symphony of 1985 is really a Romantic suite consisting of a waltz, berceuse, scherzo, nocturne, and rondo. Commissioned by the Atlanta Symphony, it is in many ways the simplest, most Romantic, and most obviously appealing of the three, but I prefer the other two works. *Eagles*, inspired by the poet's account of watching two eagles locking talons and whirling through the air, has dramatic force, but *Sunday Morning* has the most original and inspired music on the record. Its brief, poetic movements are brilliantly orchestrated, with an impressive subtlety of coloration and expression. It certainly ought to be played more by American orchestras.

Good performances here from Atlanta. Louis Lane might be one of our most underrated conductors. *E.S.*

**SAINT-SAËNS: *The Carnival of the Animals*.** Martha Argerich, Nelson Freire (piano); Gidon Kremer, Isabelle van Keulen (violin); Mischa Maisky (cello); other musicians. **RIDOUT: *Ferdinand*; *Little Sad Sound*.** **MESCHWITZ: *Tier-Gebete*.** Gidon Kremer (violin, speaker); Elena Bashkirova (piano, speaker); Alois Posch (double-bass). PHILIPS © 416 841-4, © 416 841-2 (62 min).

Performance: *Intense*  
Recording: *Variable*

The only thing missing from this Kafkaesque collection of musical fairy tales is *Peter and the Wolf* narrated by Aleksandr Solzhenitsyn. The most conventional piece here, *Carnival of the Animals*, isn't presented in the usual ultra-creamy orchestral version but in a more bare-bones chamber-music version played by an intense group of musicians including Martha Argerich and Gidon Kremer, who aren't exactly known for being playful. The animals portrayed are nervous, noisy, and a little irritable, which is quite a refreshing change from the Disney characters of André Previn's recording on Philips. In fact, the performance has many distinctive insights and is among the most probing readings of *Carnival of the Animals* on record. But does anybody really want this kind of performance of the work?

The record as a whole might be easier to recommend if the other works, all by contemporary composers, were more attractive, but these three parables for speaker and solo instrument have only modest charms. Frieder Meschwitz's



Martha Argerich: intense Saint-Saëns

eclectic *Tier-Gebete*, for speaker and piano, offers the perverse fascination of hearing Gidon Kremer talking in falsetto in a forthright attempt to suggest the voice of a giraffe. Pianist Elena Bashkirova is a much more successful narrator in Alan Ridout's *Ferdinand*, telling the story of the pacifistic bull with her tangy Russian accent, though the musical comments, played by Kremer, don't add up to much. The only halfway interesting piece is Ridout's *Little Sad Sound*, an allegory about harmony for speaker and double-bass.

Whether this album is an ultra-intellectual takeoff on a "crossover" release or just an honest mistake, it'll probably become one of those oddball records that Kremer cultists will treasure just because it's amusing to hear a great artist doing something he's not very good at. Ever hear Furtwängler conduct Stravinsky? *David Patrick Stearns*

**SCHUBERT: *Grand Duo in C Major* (D. 812); *Sonata for Piano, Four Hands, in B-flat Major* (D. 617).** Peter Noke, Helen Krizos (piano). HYPERION/HARMONIA MUNDI USA © CDA 66217 (61 min).

Performance: *Beautiful*  
Recording: *Fine*

Although they are played mostly by amateurs, Schubert's thirty-five works for piano duet contain some of his most beautiful music. Certainly the centerpiece of this repertoire is the Grand Duo in C Major, a spacious, four-movement sonata lasting about forty-five minutes that rivals the posthumous B-flat Major Sonata for solo piano in its lyricism, structure, and richness of material. The work's bulk and grandeur have led many critics to speculate that Schubert actually intended to turn it

into a symphony, and it has, in fact, been orchestrated. This sensitive performance by duo-pianists Peter Noke and Helen Krizos proves, however, that it can only be fully realized on the piano. Eschewing the all-too-common temptation to focus on the work's bombastic, "orchestral" effects, Noke and Krizos emphasize its lyricism, lovingly shaping and threading together each melody into a tapestry of exquisite contours.

The Sonata in B-flat Major is a more modest work, breathing the air of Biedermeyer coziness, but it is a perfect foil for the Grand Duo, and the Noke-Krizos team lavishes equal care on it. *S.L.*

**SCHUBERT: *String Quartet No. 9, in G Minor, Op. posth. (D. 173)*; *String Quartet No. 13, in A Minor, Op. 29 (D. 804)*.** Tokyo String Quartet. RCA © 7750-4-RC9, © 7750-2-RC (55 min).

Performance: *G Minor better*  
Recording: *Favors violins*

The Tokyo Quartet's splendid recording of Schubert's *Death and the Maiden* Quartet and the pungent C Minor *Quartetsatz* created the highest expectations for the group's further exploration of this composer's works. Those expectations are not entirely fulfilled here, and it is a little difficult to pinpoint the reasons. The playing per se is always beautiful and sympathetic, the ensemble is impeccable, and yet, while the earlier G Minor work is thoroughly persuasive, the well-loved A Minor seems a little tenuous, as if it had not been thoroughly digested—most noticeably in the slow movement (the familiar *Rosamunde* tune) but elsewhere as well. The recording balance in both works seems too heavily weighted in favor of the violins: They are so close up that an edgy quality creeps in, while the viola and cello are far too reticent. For overall appeal of performance and sound quality combined, I find the Prague Quartet's recording of the A Minor the most persuasive on a single CD; it comes with *Death and the Maiden* in Denon's mid-price series. If you prefer one of the earlier quartets with the A Minor, the Lindsay Quartet offers a handsome account of No. 8 on ASV. *R.F.*

**SIBELIUS: *Symphony No. 4, in A Minor, Op. 63*; *Symphony No. 6, in D Minor, Op. 104*.** City of Birmingham Symphony Orchestra, Simon Rattle cond. EMI/ANGEL © CDC-47711 (67 min).

Performance: *Outstanding*  
Recording: *Magnificent*

It's hardly an original thought that a great performance is one that leaves the listener thinking "What a work!" rather than "What a performance!" Original or not, it certainly comes to mind after listening to Simon Rattle's superb realizations of the greatest of all Sibelius's symphonies, the Fourth, and the



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relatively neglected Sixth (neglected only in our concert halls; it's actually well represented on records). Whatever his Birmingham orchestra's level of proficiency may be in other repertoire, Rattle has made it a first-rate ensemble for Sibelius. They simply plunge in and let that unique Sibelian atmosphere—or mystique, if you will—take over.

It's a bleak atmosphere in the Fourth Symphony, but what an expressive bleakness—protesting, elegiac, here and there affirming, but with more questions than answers all in all. The work's emotional power, which peaks in the remarkable slow movement, seems to be achieved through a conscious struggle between restraint and abandonment on the composer's part. How crisp, how chilling, are the terse comments from the winds and an occasional solo viola! How inexorable the brooding lower strings! How searing the abortive climax of the slow movement! What extraordinary mysteries in the finale! All these things strike the ear with the astonishing power of fresh discovery in this recording, and the Sixth is generally on the same level, especially successful in the third and fourth movements.

Herbert von Karajan's coupling of these two symphonies on Deutsche Grammophon is still treasurable and can give Rattle a point or two, particularly in the slow movement of No. 6, but the recorded sound from more than twenty years ago is not in the same class as Angel's magnificent new digital recording. In any event, questions of comparisons and duplications fade into insignificance here: The new Rattle CD is a must for everyone who cares about the Sibelius symphonies and a good bet for anyone who has yet to be drawn to them. *R.F.*

**TCHAIKOVSKY:** *Piano Concerto No. 2, in G Major, Op. 44; Piano Concerto No. 3, in E-flat Major, Op. 75.* Jerome Lowenthal (piano); London Symphony Orchestra, Sergiu Comissiona cond. ARABESQUE © ABQC-6583, © Z-6583 (58 min).

Performance: *Fine solo work*  
Recording: *A bit close*

I would rate Tchaikovsky's G Major Piano Concerto a near miss. The first and last movements seem to belong more in the orchestral suites or an unwritten ballet score. Only the slow movement, with its "triple concerto" use of violin and cello along with the solo piano, has the melodic substance of the composer at his best. Yet Tchaikovsky's friend, pianist Alexander Ziloti, saw fit to issue an edition of the work *deleting* the piano-trio element—a version that was accepted as the standard until recent decades. Fortunately, Jerome Lowenthal and Sergiu Comissiona give us the original score in this recording. As a filler we get the virtuosic single movement, *Allegro brillante*, that would have become part of a full-

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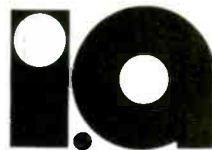


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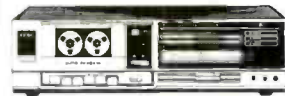
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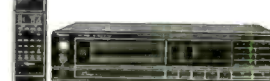
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fledged Third Piano Concerto had death not intervened.

Lowenthal makes light of the music's formidable pianistic hurdles, most spectacularly in the finale of the G Major Concerto and the whole of the *Allegro brillante*. The slow movement of the G Major, with uncredited string soloists, is meltingly lovely. I only wish Comissiona had been a little less reticent with the genuine pomp of the concerto's opening. He simply gives it a once over lightly instead of bringing to the music something of the spirit that inspired Balanchine's *Ballet Imperial*.

The piano sound is splendid, but that of the orchestra left me uneasy: I kept wanting the feel of a big orchestra in a spacious and warm acoustic, but what emerged from my speakers seemed decidedly small scale. *D.H.*

**WALTON: Portsmouth Point; Symphony No. 1, in B-flat Minor.** London Philharmonic Orchestra, Leonard Slatkin cond. VIRGIN 90715-1, 90715-4, 90715-2 (50 min).

Performance: *Brilliant*  
Recording: *Very good*

This splendid record opens with *Portsmouth Point*, a concert overture that Walton wrote in 1925, at the age of twenty-three, as an evocation of the rowdy seaport scene shown in the famous Thomas Rowlandson painting of that name. It is followed by the composer's First Symphony (1932-1935), a large-scale tonal canvas that encompasses both full-blown Romanticism and taut Stravinskian gestures.

While André Previn's recent Telarc recording of the symphony stresses the Romantic element, abetted by somewhat plushy sonics, Slatkin's is lean and energetic, reaching its peak in a ferociously virtuosic treatment of the *Presto con malizia* second movement. Slatkin and the London Philharmonic are in brilliant form throughout the sprawling sweep of the epic finale, which Walton completed a year after the first three movements, having had trouble with the elaborate fugal episode. I would have liked just a little more weight in the opening movement and more passion in the slow movement, but compared with other recordings available at the moment this one has a slight edge, not least for the inclusion of *Portsmouth Point*. *D.H.*

## COLLECTIONS

**ARLEEN AUGÉR: Love Songs.** Copland: *Pastorale; Heart, We Will Forget Him.* R. Strauss: *Ständchen; Das Rosenband.* Poulenc: *Fleurs.* Quilter: *Music, When Soft Voices Die; Love's Philosophy.* Schumann: *Widmung; Du bist wie eine Blume.* Coward: *I'll Follow My Secret Heart.* Mahler: *Liebst du um Schönheit.* Foster: *Why, No One to Love.* Britten: *The Salley Gardens.* And twelve others. Arleen Augér (soprano);

Dalton Baldwin (piano). DELOS 90715-1, 90715-4, 90715-2 (50 min).

Performance: *Ingratating*  
Recording: *Fine*

This potpourri of twenty-five songs by composers ranging from Copland to Strauss, from Schumann to Gounod, and from Stephen Foster to Noël Coward somehow hangs together as a harmonious whole. The program adroitly juxtaposes contrasting musical styles and texts, and Arleen Augér's singing comes across with sympathetic, unaffected simplicity and sincerity. Her delivery of the serious songs is not mawkish, and the lighthearted ones are never irritatingly gladsome. The soprano's light, clear voice is well handled, and her diction too is excellent, while Dalton Baldwin provides eloquent accompaniment. *R.A.*

**PAUL TORTELIER: French Impressions.** Debussy: *En bateau (orch. Mouton); Prélude à l'après-midi d'un faune.* Fauré: *Pavane, Op. 50; Légérie, Op. 24.* Pierné: *March of the Little Lead Soldiers.* Massenet: *Thais, Méditation; La Vierge, The Last Sleep of the Virgin.* Satie: *Two Gymnopédies (orch. Debussy).* Saint-Saëns: *Carnival of the Animals, The Swan.* Tortelier: *Valse, Alla Maud.* Paul Tortelier (cello); other musicians; English Chamber Orchestra, Paul Tortelier cond. VIRGIN 90707-1, 90707-4, 90707-2 (54 min).

Performance: *Stylish*  
Recording: *Spacious*

Paul Tortelier, still one of our supreme cellists, has been conducting more and more in the last two decades; he is a composer as well and heads a musical family in which his wife is a fellow cellist, their son a violinist, and their daughter a pianist. He has recorded with all three of them as either conductor or fellow instrumentalist, and he ends this new record of French music with a recent composition for himself and his wife. It's an engaging little *valse*—too French to be called a waltz—whose title indicates humor as well as affection ("Maud" is pronounced "mode" in French), and it is most engagingly presented. Indeed, everything in this collection is performed with great style and warmth of heart, particularly the Satie and the pieces in which Tortelier plays the cello. The most substantial piece, Debussy's *Prélude à l'après-midi d'un faune*, holds its own with the very strongest previous versions, and everything is set off to best advantage by the spacious recording. My one reservation is that, while listeners may enjoy *The Swan* outside the context of the *Carnival of the Animals*, most would surely want all four little movements of Debussy's *Petite suite*, for which there would have been ample room, rather than just *En bateau*, and would prefer the standard Büsser orchestration. *R.F.*

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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!

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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

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## 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

*Prepared by David Stein*

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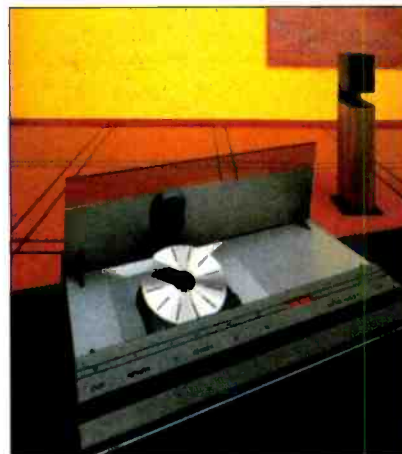
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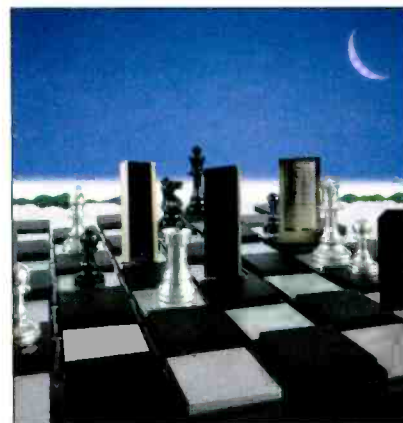
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EBET ROBERTS

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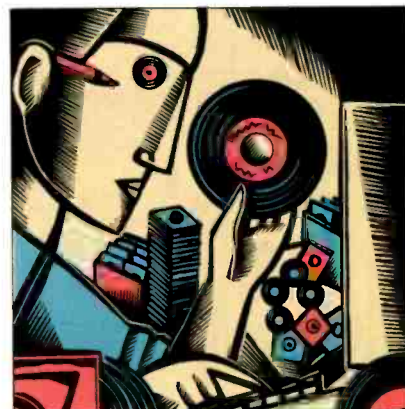
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by *Ralph Hodges*



## *The Economics of Hi-Fi*

**A**FELLOW journalist who writes a column parallel to this one for a major automotive magazine called up recently to socialize. Inevitably, the talk drifted into the high-end categories of our respective fields.

"You see, Ralph," he declared, "much of the function of my magazine is to bring readers closer to cars that fascinate them but which they will probably never be able to own, or even to lay living eyes upon."

There's pause for thought here, I realized. Is that the function of this column? Perhaps it is, because the specter of \$50,000 amplifiers and \$100,000 speaker systems unavoidably haunts it whether such products are referred to by name or not. But it is not written with that intention. Rather, I have been writing it with the confident expectation that the more-than-casual reader will find ways to participate in the market of audio exotica, to his delight or disillusionment, and that he won't court financial ruin in doing so. Yet I have never addressed the subject of how this feat might be managed. Until now. Herewith, some proven guidelines.

*Establish a time/money audio*

*budget.* The time, which may well be your greatest expenditure, is allocated to education and to handshaking, sometimes indiscriminate. The money goes not to equipment purchases but to memberships, subscriptions, phone charges, and perhaps even travel. You'll see how this works as we go along, but bear in mind that this deduction from household resources must be justified regularly, or the whole adventure will fail.

*Locate the local chapter of the Audio Engineering Society and join it.* You will not be permitted full membership without professional credentials, but an associate membership is yours just for being interested. This brings you the invaluable *AES Journal*, which often contains more about home hi-fi than even audio professionals are really comfortable with, and it brings you notice of meetings that may be within driving distance. (The AES's national headquarters are at 60 East 42nd St., New York, NY 10017, and the staff takes phone inquiries at 212-661-8528.)

*Cultivate a dealer.* By this I mean a real specialty audio dealer, usually with a small but well-groomed space and staff, who gets excited about new recordings of merit and genuinely wonders about the next audio "advance" during off-hours. Such dealers may be intimidating at first encounter, but the trick here is not to try to make friends with them, but with the equipment. Inform yourself in advance about the gear they carry, and do not forget to drool and babble when appropriate. Smart dealers know that somewhere there may be a well-to-do relative who takes your ravings seriously.

*Join, or form, a local hi-fi club.* With the contacts you've made during the above exercises, the necessary steps will be obvious. Legitimate clubs are powerful and often able to command a presentation from very elite manufacturers, at no expense, if a significant meeting turnout can be guaranteed. Some manufacturers volunteer to leave behind pieces of equipment for the club to play with. This privilege is easily abused, but if instinct and intent are proper, great benefits can be realized by both sides.

*Become a reviewer.* While STEREO REVIEW does not use free-lance equipment reviewers, many other audio magazines, mostly small but some quite large, do invite persistent reader commentary, which can turn into a reviewing assignment or even a permanent connection. The diversity of views that results is healthy, I think, but a reviewer must possess either a studied consistency or an entertaining style to keep a regular position. The equipment will roll in, usually on a thirty- to ninety-day loan, for your intimate inspection. (Stern warning to manufacturers: Act on no presumed reviewer's request without a telephone check with the magazine's editorial offices.)

All this may seem more like politics than acquisition, but following these stratagems will bury a reasonably adept game-player in more equipment than he can hope to sort through. Contacts through audio clubs and societies make you a target for apostles eager to bring you into the fold. A long-suffering dealer may lend you the component of your aspirations just to get you out of the store for a week or so, and he could come to value your judgment if you return with an incisive report. (Stern warning to readers: Reviewers can function only by maintaining scrupulously high ethical standards, maintaining equipment in the best possible condition, accounting for its whereabouts at all times, and returning it instantly when it is requested.)

Possibly these suggestions sound a bit fanciful to you, and certainly they involve an amount of effort that only rabid enthusiasm could sustain. But the reality is that they do work, in time. In fact, I myself . . . but perhaps it's best not to get into that.

Virtually none of us has a realistic chance of laying hands on a Ferrari F-40. The car wasn't built for that purpose. But *all* hi-fi equipment is meant for general acquisition and subsequent admiration, and if economics stand in the way, most manufacturers encourage enthusiasts in finding alternatives. Sorry, Pat, but that's the way it seems to be hereabouts. Still, it was great hearing from you. □





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