

Stereo Review

INCORPORATING HIGH FIDELITY®

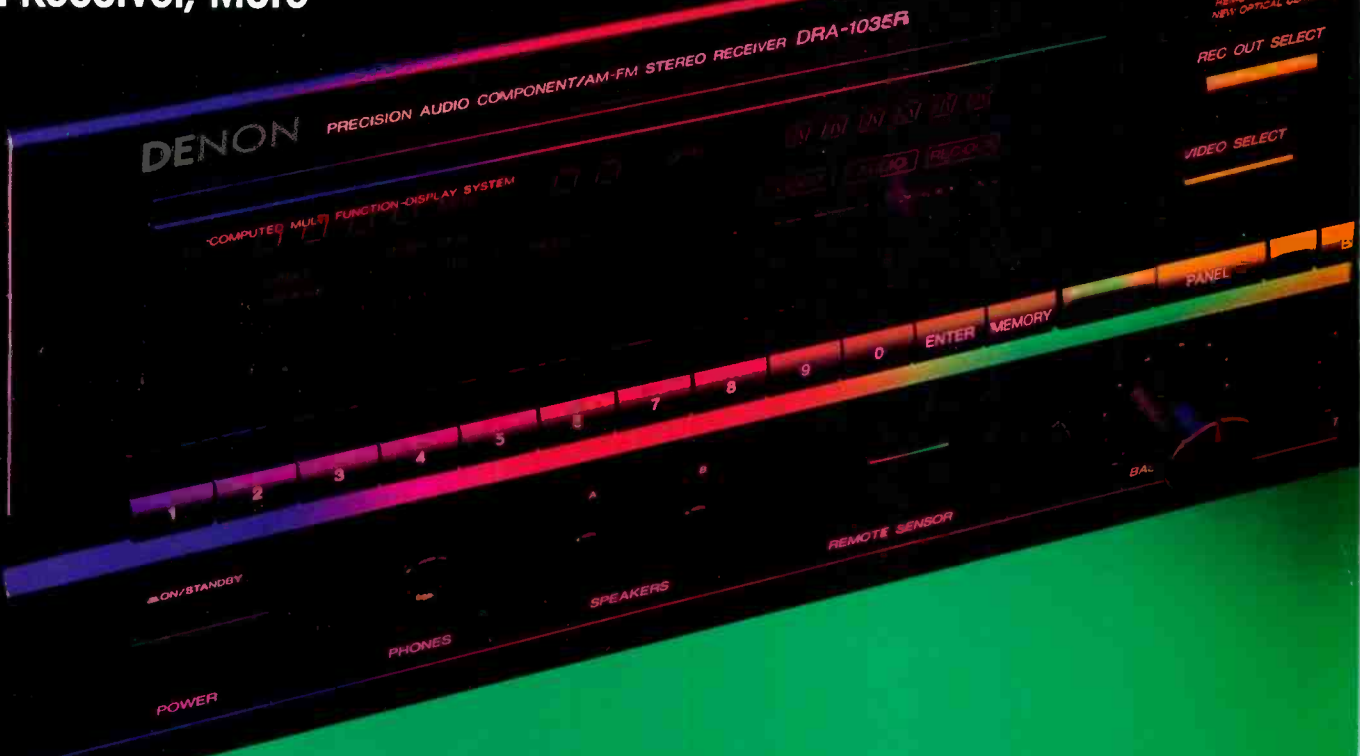
US \$2.50 UK £2.00 CANADA \$2.95 • JUNE 1991

TROUBLESHOOTING TIPS

How to get the bugs out of your system

DAT RECORDING COMES HOME

Tested: Acoustic Research Speakers,
Denon Receiver, More



#259B*****5-DIGIT 40242
#BCH8900Y091 9#430492 1J
MAR 92
MR DAVID S BUCHANAN
VF02
#LX06
8900 YELLOW WOOD PL
LOUISVILLE KY 40242-7772



Introducing the new Bose® Acoustimass-5 Series II Direct/Reflecting Speaker System

The part you see.



Success

Measured in technical achievement
and customer satisfaction.

Introduced in 1987, the Bose Acoustimass-5 speaker system simultaneously overcame the placement limitations of large speakers and the performance compromises of conventional small speakers. Finally, it was possible to generate pure, deep bass from a truly compact enclosure.

The Acoustimass system changed the way people think about loudspeakers, and quickly became the speaker system of choice for music lovers around the world. Stereo Review said: "...side by side with speakers costing three to five times as much, the AM-5 [Acoustimass] consistently produced the more exciting and listenable sound..."*

How has Bose celebrated this success?

By spending three more years in research, making Acoustimass speakers even better.

* Julian Hirsch, Stereo Review, 1987



Successor

The result of continued research.

Like the original, once the new Virtually Invisible® Acoustimass-5 system is in place, all you see are the two tiny cube speaker arrays. The new cube speakers are smaller, more powerful, and more fashionable. You enjoy spacious, lifelike music reproduction from a system that blends easily into any decor.

Now let's examine the benefits of the new Acoustimass bass module, the easy-to-hide part of the system you normally don't see.

The part you don't see.

Patented Bose® Acoustimass® speaker technology makes the difference.

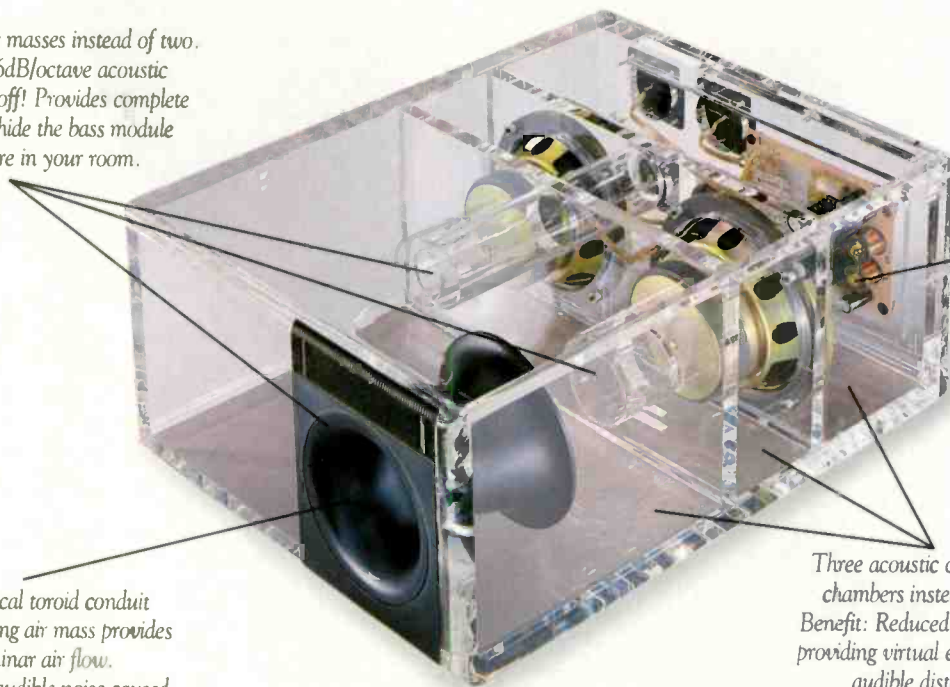
Improved technology is found in the new Series II bass module.

Three acoustic masses instead of two.

Benefit: 36dB/octave acoustic crossover rolloff! Provides complete freedom to hide the bass module anywhere in your room.

New system protection circuit with twice the energy dissipation capability.

Benefit: More system protection at high output volumes. Increased reliability.



New elliptical toroid conduit for the radiating air mass provides for laminar air flow.

Benefit: No audible noise caused by turbulence, even at high loudness levels.

*Three acoustic compression chambers instead of two.
Benefit: Reduced cone motion providing virtual elimination of audible distortion.*

(Plexiglass model for illustration purposes only)

The technology of the Virtually Invisible® Acoustimass bass module is unlike that of any conventional speaker system. The sound is launched into the room by an air mass, rather than directly by a vibrating surface.

The new technology introduced in the Series II bass module is detailed in the photograph above.

The benefits of the complete Acoustimass-5 Series II speaker system are:

- Pure, deep bass that seems to come from the tiny cube speaker arrays.
- Full fidelity sound from a Virtually Invisible® speaker system that blends into any decor.
- A variable width sound stage that can be set by rotating the Bose Direct/Reflecting® speaker arrays.
- Consistently high quality that you expect from Bose, achieved through Syncom® computer testing.

Hear the difference yourself.

The best way to appreciate the sound of the new Virtually Invisible Acoustimass-5 Series II speaker system is to ask your dealer to demonstrate it side by side with conventional systems costing much more. For the name of a Bose dealer near you, and to receive a brochure, call;

1-800-444-BOSE

(1-800-444-2673) 8:30AM-9:00PM(ET)

In Canada call 1-800-465-BOSE (2673) 9:00AM-5:00PM

BOSE®
Better sound through research.



A cordless phone doesn't have to sound like this.



AT&T 5000 Series

Next time you've got one of the AT&T Cordless 5000 Series.

Our Clarity Plus™ sound technology virtually eliminates the sound effects and static heard on some cordless phones. So you can have a cordless phone that won't get in the way of your conversation.

We think you'll agree—the difference is uncanny.

Available at AT&T Phone Centers and other retailers.

Copyright ©1991 AT&T. All rights reserved.

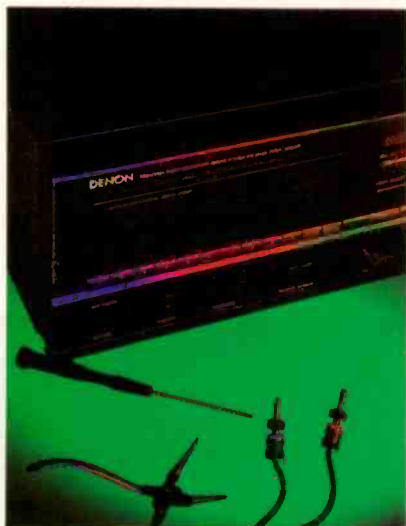


AT&T

The right choice.

Stereo Review

INCORPORATING HIGH FIDELITY®



Cover

For more on the Denon DRA-1035R receiver, see page 27. For tips on troubleshooting, see page 48. Speaker cables and Xterminator banana-plug connectors from Monster Cable.

Photograph by Gene Coleman

LETTERS	8
NEW PRODUCTS	15
AUDIO Q&A	24
POPULAR MUSIC	79
CLASSICAL MUSIC	89

COPYRIGHT © 1991 BY HACHETTE MAGAZINES, INC. All rights reserved. Stereo Review, June 1991, Volume 56, Number 6. Stereo Review (ISSN 0039-1220) is published monthly by Hachette Magazines, Inc. at 1633 Broadway, New York, NY 10019; telephone (212) 767-6000. Also publishers of Car Stereo Review, Sound & Image, Stereo Buyers' Guide, Compact Disc Buyers' Guide, and Video Buyers' Guide. One-year subscription rate for the United States and its possessions, \$13.94; Canada, \$18.94; all other countries, \$21.94; cash orders only, payable in U.S. currency. Second-class postage paid at New York, NY 10001, and at additional mailing offices. Printed in the U.S.A. Authorized as second-class mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. Canadian GST number 126018209. POSTMASTER/SUBSCRIPTION SERVICE: Please send change-of-address forms and all subscription correspondence to Stereo Review, P.O. Box 55627, Boulder, CO 80322-5627. Please allow at least eight weeks for the change of address to become effective. Include both your old and your new address, enclosing, if possible, an address label from a recent issue. If you have a subscription problem, write to the above address or call (800) 876-9011. PERMISSIONS: Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to: The Editor, Stereo Review, Hachette Magazines, Inc., 1633 Broadway, New York, NY 10019. EDITORIAL CONTRIBUTIONS must be accompanied by return postage and will be handled with reasonable care, but the publisher assumes no responsibility for return or safety of unsolicited art, photos, or manuscripts.

EQUIPMENT

Equipment Test Reports	27
Denon DRA-1035R Receiver, page 27	
Fried R/4 Loudspeaker System, page 32	
Sony D-303 Portable CD Player, page 36	
Acoustic Research M4 Loudspeaker System, page 42	
Finding Fault	48
How to track down problems in your stereo system • by Ian G. Masters	
The Amp/Speaker Interface	52
Are your loudspeakers turning your amplifier into a tone control? • by E. Brad Meyer	
Remote Controls	59
Once a novelty, now a necessity, these magic wands come in several varieties • by Rich Warren	
Digital Recording Comes Home	64
An inside look at DAT • by Craig Stark	



Page 64

MUSIC

Special CD Offer	21
"Steal This Disc 3" from Rykodisc	
Best Recordings of the Month	73
Joni Mitchell, Murray Perahia's "Aldeburgh Recital," the Kentucky Headhunters, and Schumann Symphonies Nos. 1 and 4	

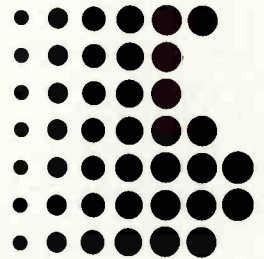


Page 73

**OUR NEWEST
DISCMAN
MAY HAVE
AN EQUAL,
BUT
NOT IN THIS
WORLD.**



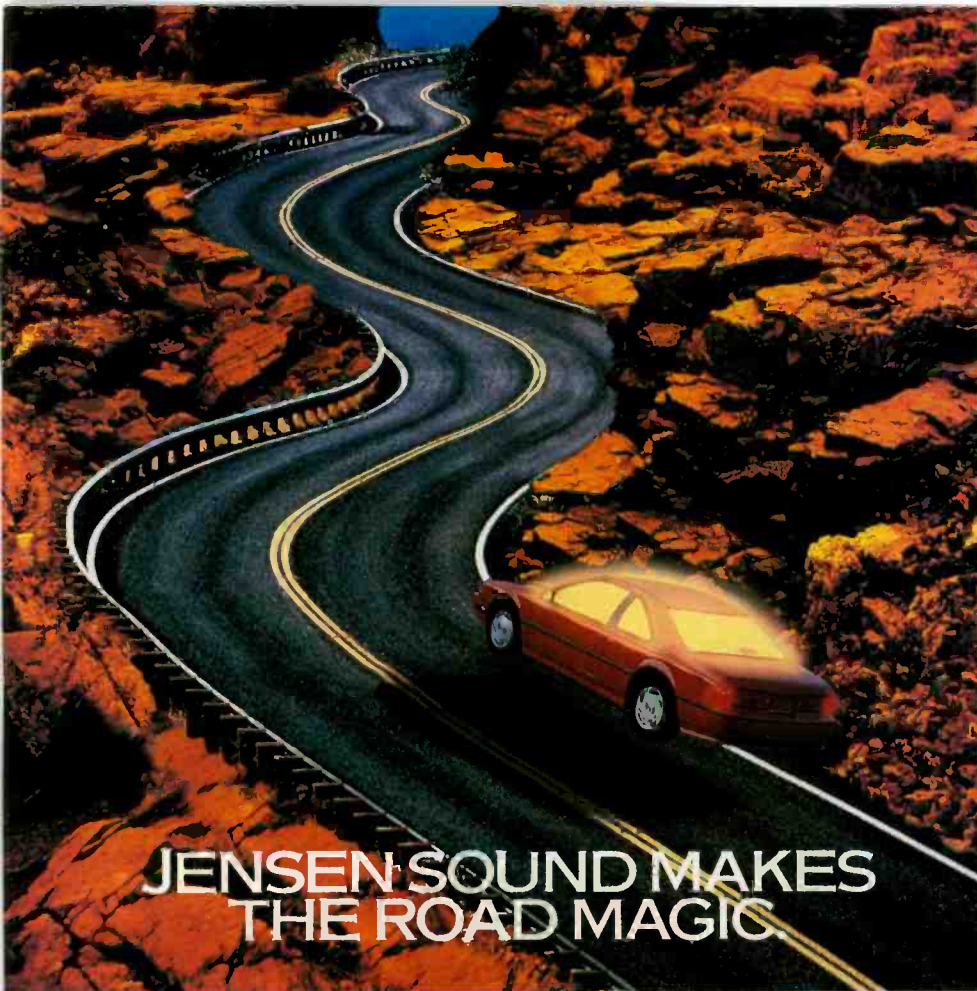
Come to where the horns are mellower, the flutes purer and the voices sweeter. We refer, of course, to our newest Discman® CD player, the D-303. It's the world's first to bring the accuracy of 1-bit technology to a CD player you can bring anywhere. With superlative low-level linearity, the 1-bit system captures even the softest, subtlest sounds. Taking music to a higher plane of existence.



It's a Sony

Sony's headphone cord remote control lets you operate the D-303 even if it's in a briefcase. Our MegaBass™ circuit brings you thunderous low frequencies. There's a convenient Quick Charge rechargeable battery. As a finishing touch, you have a choice of titanium or black finish. There's only one portable CD player with 1-bit technology. And only one conclusion. The D-303 is worlds apart.

SONY



JENSEN SOUND MAKES THE ROAD MAGIC.

J5252 Components



Usually, you keep your four tires on the ground. Suddenly, out of thin air comes a wave of sound that practically sweeps you off your

seat. It's the latest magic from Jensen. A state-of-the-art CD player, new receivers and our powerful U.S. made speakers. They quickly dispel another illusion: that for sound this real, you need to spend a fortune. For free information and the name of your nearest dealer, call 1-800-67-SOUND.



CD9500 CD Receiver



JS9400 Receiver

JENSEN®

The most thrilling sound on wheels.

BUY JENSEN NOW AND FILL IN THE BLANKS.

TWO FREE* MEMOREX CDX IV METAL TAPES WITH ANY JENSEN PURCHASE.

Two new Memorex® CDX® IV C-90 metal tapes (a \$6.00 value) are yours free by mailing in the Jensen coupon for each Jensen purchase. Pick up your coupon at participating dealers. Fill the tapes with your favorite music. And make magic of your own.

Offer good on purchases made from May 1-July 31, 1991, in the U.S. only while supplies last.

©1991 International Jensen Incorporated

*With coupon.



Stereo Review®

EDITOR IN CHIEF

Louise Boundas

EXECUTIVE EDITOR

Michael Riggs

ART DIRECTOR

Sue Llewellyn

DIRECTOR, HIRSCH-HOUEK LABORATORIES

Julian Hirsch

POPULAR MUSIC EDITOR CLASSICAL MUSIC EDITOR

Steve Simels

Robert Ripps

MANAGING EDITOR

David Stein

SENIOR EDITOR

Rebecca Day

ASSOCIATE ART DIRECTOR

Mindy Ball

ASSISTANT EDITORS

Jaе Segarra, Maryann Saltser

EDITORIAL ASSISTANTS

Barbara Aiken, Rocco Mattera

SENIOR CONTRIBUTING EDITORS

William Wolfe, Robert Ankoako, William Goldman, Elise Marton

EDITOR AT LARGE

William Livingstone

Contributors: Robert Aekart, Chris Albertson, Richard Freed, Phyl Garland, Ron Givens, David Hall, Bryan Harrell (Tokyo), Roy Hemming, Ralph Hodges, Stoddard Lincoln, Ian Masters, Alanna Nash, Henry Pleasants (London), Ken Pohlmann, Parke Puterbaugh, Charles Rodrigues, Eric Salzman, Craig Stark, David Patrick Stearns

VICE PRESIDENT, GROUP PUBLISHER

Nicholas Matarazzo

Consumer Electronics Group Advertising

Advertising Director: **Charles L. P. Watson**
(212) 767-6038

Group Sales Manager, East: **Scott Constantine**
(212) 767-6346

Regional Account Managers, East: **Carol Berman**,
(212) 767-6292; **Tom McMahon**, (212) 767-6025

Assistant to the Publisher: **Nadine L. Goody**

Operations Manager: **Sylvia Corra**

Advertising Coordinator: **Linda Neuweiler**

Classified Advertising: (800) 443-6066

Group Sales, Midwest: **Arnold S. Hoffman**,
Jeffrey M. Plaster, (708) 679-1100

Group Sales, West: **Robert Meth**,
Paula Mayeri, (213) 739-5130

Tokyo Office: **Iwai Trading Co., Ltd.**,
603 Ginza Sky Heights Building, 18-13,
Ginza 7-Chome, Chuo-Ku, Tokyo, Japan 104

Japan Representative: **J. S. Yagi**, (03) 345-3908

Production Manager: **Michele Lee**

Production Director: **Patti Burns**

Business Services Director: **Greg Roperti**

Newsstand Sales Director: **Margaret Hamilton**



Stereo Review is published by Hachette Magazines, Inc.

Chairman and CEO: **Daniel Filipacchi**

Executive Vice President/Editorial Director:

Jean-Louis Ginibre

Executive Vice President/Publishing, OOO & CFO:

David J. Pecker

Senior Vice President, Sales & Marketing:

Anthony F. Incalcaterra

Vice President, General Counsel: **Catherine Flickinger**

Vice President, Circulation: **Leon Rosenfield**

Vice President, Manufacturing & Distribution:

Anthony R. Romano

Vice President, Magazine Development: **Marcia Sachar**

Vice President, Research: **Susan Smollens**



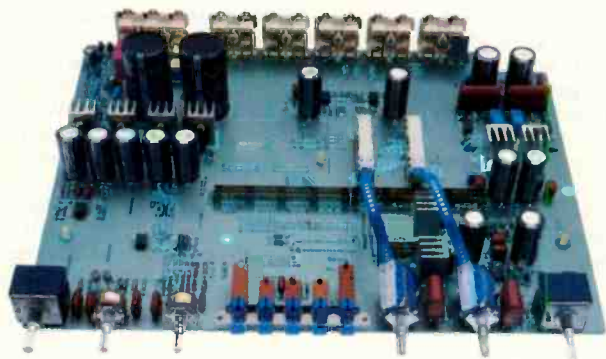
Adcom's GFP-565 Preamp: Pure and Simple.



In Search of Sonic Perfection, Adcom Took the Path of Least Resistance

The fewer circuits a musical signal encounters on its way to your loudspeaker system, the greater its musical purity will be. Now, through obsessive attention to detail and design ingenuity, Adcom has created the GFP-565 — the world's first affordable preamplifier with direct, linear gain path circuitry. By combining the GFP-565 with any of Adcom's power amplifiers, you can experience the exceptionally lifelike sound which has astonished even the most demanding critics.

From Input to Output,
the Signal Path is
as Direct, Pure and
Simple as Possible



By gold plating all input and output jacks, and then directly mounting all jacks, switches, potentiometers and other laboratory grade components on a double copper-plated, glass epoxy printed circuit board, signal losses and noise are dramatically reduced.

Three Sets of Outputs for the Perfect Balance of Performance and Flexibility

You can use one or more sets of outputs: 1) **BYPASS** - direct-coupled before tone controls, filters, etc. for the most direct path to your power amplifier while retaining control of volume and balance. 2) **LAB** - direct-coupled with no output-coupling capacitors yet with tone, filter and loudness controls. 3) **NORMAL** - same as LAB but with highest quality output capacitors for use with amplifiers needing the extra protection of ultra-low-frequency roll-off.

Bi-amped and tri-amped systems are easily accommodated by this flexible arrangement.

Pure Convenience

The minimalist aesthetics of the GFP-565 are deceptive in their simplicity. Without being overly complicated to use, this preamplifier is able to integrate and control all of the components in the most sophisticated of music systems. There are five high-level inputs as well as a phono input. A separate front-panel switch allows the use of an external processor, only when needed, leaving both tape circuits free. And, of course, you may listen to one input while recording from another.

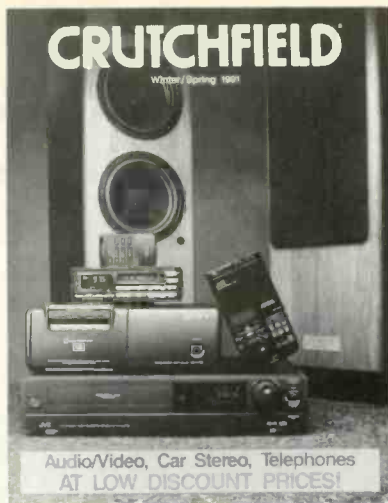
More Sound, Less Money

Adcom stereo components have a reputation for sounding superior to others costing two and three times more. Keeping faith with this tradition, Adcom took the path of least resistance. Why not do the same? Ask your authorized Adcom dealer for a demonstration of this remarkable stereo preamplifier. Please write or call for a fully detailed brochure. You'll discover the best value in high performance preamplifiers.

Pure and simple.

ADCOM[®]
details you can hear

©1990 ADCOM



You'll find the most helpful shopping information in over 100 Crutchfield catalog pages.

FREE Stereo Catalog

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

- Over 100 pages of helpful articles, consumer tips, charts, and installation guides.
- Color photos, complete descriptions and technical specifications on hundreds of the finest brand name products.

You get more value shopping at Crutchfield:

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

Call or send this coupon now for your FREE Catalog

800-336-5566

Be sure to mention *Stereo Review* when calling

Name _____

Address _____ Apt. # _____

City _____ State _____ Zip _____

Optional - Are you in the market for:

- PC products fax/copiers
 security products

CRUTCHFIELD

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

LETTERS

Whose Mozart?

Many thanks for William Livingstone's "Modern Views of Mozart" in April. I have been struck, however, by a common feature of post-*Amadeus* Mozart articles: They all attack what the authors presume is playwright Peter Shaffer's view of the man. As Mr. Livingstone put it, "Shaffer presents Mozart . . . as a coarse, drunken bumpkin." That is nonsense.

In the film of *Amadeus* (I have not seen the play), every revelation about Mozart is explicitly the view of Salieri, in flashback form, and, of course, the premise throughout is that Salieri hates Mozart with an intense, maniacal passion. Therefore, obviously, it is not Shaffer but Salieri who "presents Mozart . . . as a coarse, drunken bumpkin."

WILLIAM C. LLOYD
Madison, WI

William Livingstone is much tougher on Peter Shaffer for *Amadeus* than Shaffer was on either Mozart or Constantine. I have been listening to Mozart's music for about four decades, and *Amadeus* brought Wolfie alive for me as neither a prettified saintly stereotype nor a drunken vulgarian but a regular guy, possessed of an almost frightening genius, who came to terms with what he was and still tried to live a normal life among men.

MIKE MORRISON
Chatsworth, CA

DAT vs. DCC

I am bothered by Julian Hirsch's quick endorsement of the Philips Digital Compact Cassette (DCC) format in April's "Technical Talk." First, Philips did not invent the compact disc; it was a co-inventor with Sony. Second, in some parts of this country, blank digital audio tape cassettes are less expensive than good analog cassettes; if Mr. Hirsch thinks the new DCC's are going to come cheap, he is living in dreamland. Third, DAT's *can* be mass-duplicated—and inexpensively, too, as Sony has demonstrated.

And why did Mr. Hirsch not mention the subcode capabilities of DAT? He also does not mention some of the potential problems of using a stationary head for consumer applications. It seems un-

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

likely that DCC decks will ever be portable given the ultra-precise alignment needed between tape and head.

SCOTT H. KALATA
Bloomfield, NJ

Julian Hirsch replies: The concept of the CD came from Philips, which also did much of the initial development work. Philips later recruited Sony as co-developer. Sony did make very significant contributions to the engineering and marketing of the system, but it is stretching things a little to count it as a "co-inventor."

I am not sure what Mr. Kalata means by "good" cassettes, but even premium-grade analog cassettes are commonly available for \$4 or \$5, and DCC's should not cost much more. Where can one get DAT cassettes for less than that?

I understand that Sony has demonstrated high-speed duplication of DAT cassettes, but it appears that the necessary equipment is either not readily available or perhaps not yet up to the necessary level of performance and reliability. No one, Sony included, is currently using it.

I do apologize for omitting mention of DAT's subcode capabilities. I did not discuss the possible pitfalls of stationary-head technology because the units Philips and Tandy demonstrated were obviously purely engineering models, not even close to a prototype stage (and were presented as such). Certainly there will be problems to overcome, but this has been true of every significant development in audio.

Hidden Distortion

Ken Pohlmann notes in his May "Signals" column on "Hidden Distortion" that recorded music is produced with distortion added through the recording process and thus can't be played back to create the presence of the live performance. Certainly *any* recording has some distortion, but does that make it worse than a live performance? When I listen to a recording of a live performance I don't endure the audience noise, rustling of program notes, etc., that were present at the live performance. I can't control those kinds of distortion nearly as easily as I can regulate the volume, etc., of the recording. Let "hidden distortion" remain so.

GARLAND BRADSHAW
Warren, OH

Collector's Items

Contrary to your response to Herbert L. Cohen's letter (April) regarding the collectibility of mispressed CD's and of CD's in general, *many* CD's (including



Our speakers sound expensive...

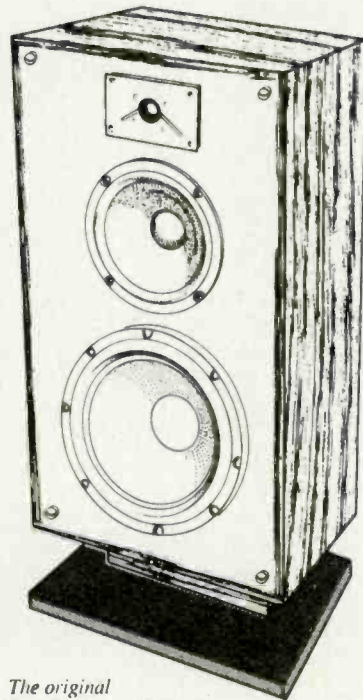


The Expensive Sound of the Affordable Monitor Series

In 1972, Polk Audio created a new standard for high performance and affordability with the introduction of its original Monitor 7 loudspeaker.

Audiogram Magazine said, "we were so impressed we could not believe the prices...they're a steal." Also referring to the Monitors, Musician Magazine said, "If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polk's."

Today, Polk Audio furthers this tradition of offering state-of-the-art sound at affordable prices with its new Monitor Series 2 Loudspeakers. All of these affordable speakers have one thing in common- the unmistakable, exciting sound of Polk.



The original Polk Monitor 7 that started a sound revolution in 1972.

(ultra-low viscosity) magnetic fluid which enables the SL 2500 to exceed normal listening levels without loss of performance or reliability. The resulting dynamic range is dramatic, indeed unique for speakers in this price range.

The compact Monitor 4 features an all new tweeter, the SL 1500 hemispherical, 1" soft dome driver. It delivers superb definition and smooth extended response, all resulting from Polk's exhaustive testing and computer-aided design analysis.

The performance of all the Monitor Series 2 Loudspeakers at high frequencies results in a sound that is easy to listen to, hour after hour, without fatigue. And their extremely wide dispersion characteristics greatly reduce the need for critical placement within your listening room.

Better Bass Than Ever Before

The Polk Monitors have always been recognized for their exciting bass performance. The Series 2 loudspeakers sound even better. Each low frequency system was redesigned to provide

Expensive Sound, Affordable Price

Polk's High Performance at High Frequencies

Featured in the Monitor 4.6, 5jr+, 5, 7, 10 and 12, the SL 2500 makes a major contribution to the improved performance of the Monitor Series 2. Sharing much of the technology of the incomparable SL 3000 tweeter used in the Polk flagship SRS series, the SL 2500 is a highly refined, technically advanced driver.

The voice coil, wound around an aluminum voice coil former, is cooled by an exotic ULV

deeper, more realistic bass. The 4, 4.6 and 5jr+ have greater internal cabinet volumes than the previous models, clearly making them the biggest sounding bookshelf speakers available.

Moving up to the Monitors 5, 7, 10 and 12, the bass gets deeper and fuller, each being more capable of filling larger rooms with bass energy that you can feel as well as hear.

There's a Polk Monitor That's Right for You

Polk offers seven Monitor Series 2 loudspeakers ranging in size, performance, and price. All feature Polk's proprietary trilaminate polymer diaphragm midbass driver for excellent transient response and reduced midrange coloration. Starting with the Model 4, each subsequent Monitor Series 2 speaker gets larger, more efficient, handles more power, has greater dynamic range and delivers better bass response. They are an excellent choice for multiple speaker systems throughout your home.

Listen to the Next Generation of Monitors

Polk Audio started a sound revolution in the early 70s with its first Monitor 7 by offering state-of-the-art sound at a reasonable price. Today, after nearly two decades of refinement, research and devel-

opment, Polk has introduced an entirely new series...the Monitor Series 2. You are invited to your nearest Polk Audio dealer for a demonstration of these remarkable new loudspeakers. You will hear the expensive sound of Polk...at very affordable prices.

You will hear the next generation of loudspeakers.

polk audio

The Speaker Specialists®

5601 Metro Drive
Baltimore, MD 21215 USA
(301) 358 - 3600



Where to buy Polk Speakers? For your nearest dealer, see page 98.

©1991, Polk Audio, Inc. All rights reserved.

CIRCLE NO. 17 ON READER SERVICE CARD



The response has proven superb.

"Few speakers at its price would be likely to equal it, much less surpass it."

Julian Hirsch, *Stereo Review*
on Model V620

"...surprisingly hefty bottom. The rest of the spectrum is just right, too — smooth, sweet and accurate."

Hans Fantel, *Rolling Stone*
on Model V62

"...excellent highs and very good imaging and sound stage."

Harry Somerfield, *San Francisco Chronicle*
on Model V630

"The startlingly powerful bass makes drums sound magnificent."

Richard Warren, *Chicago Tribune*
on Model V620

Prove it for yourself at select audio retailers. Better yet, hear it straight from the source.

B-I-C America, 895-E, Hampshire Road,
Stow, Ohio 44224, Telephone 216-928-2011

Speaker Systems by **B-I-C America**

Distributed in Canada exclusively by Linear Marketing Corporation, 2197 Dunwin Drive, Mississauga, Ontario L5L 1X2

LETTERS

some mispressed ones) have collector's value. Of course, not all mispressings are collectible, but certain ones command substantial amounts of money, such as *any* mislabeled CD of the Beatles or the infamous Lawrence Welk CD that actually contains the Sex Pistols. Other factors that can contribute to a CD's collectibility include special, limited-edition packaging (such as the Rolling Stones' "Steel Wheels" in a steel jewel box) and differences in artwork (the Japanese version of Todd Rundgren's "Nearly Human," for instance, which has normal-looking hands on the cover instead of the six-fingered ones on the U.S. version).

EMILY JACKSON
Russellville, AL

DAT and Graphics

In April "Technical Talk," Julian Hirsch states that DCC "has the ability (unlike DAT) to display auxiliary graphic or alphanumeric information encoded on the tape." In a report from Japan in the September 1989 issue, Bryan Harrell stated, "The DAT still-video format . . . has been adopted by the industry-wide DAT standards committee," adding that "The digital recording of still-video images should be an advantage during copying and editing." So which is it? Does DAT provide for the recording of graphic information or not?

JERRY MOFFIT
Aurora, CO

Auxiliary graphic information in the subcode is not the same as still video, which takes much more tape capacity. In the DAT still-video format, the soundtrack has 30 to 40 dB less dynamic range than in a normal audio-only recording on DAT.

Corrections

The price given for the PSB New Stratus speaker system in the test report in the May issue, \$1,800 a pair, was the Canadian price. The U.S. price is \$1,400 a pair.

On page 84 of the April issue, in David Hall's review of Riccardo Chailly's recording of the Brahms Symphony No. 2 and Webern's *Im Sommerwind*, the reference to the period when music by Delius was well known in Germany should have said the 1900's, not the 1930's.

On page 100 of the same issue, near the end of Mr. Hall's review of an album of Debussy by the Montreal Symphony under Charles Dutoit, there is a mistaken reference to Act II of Wagner's *Parsifal*; Mr. Hall meant to refer to Act III, specifically the "Good Friday" music. □

WIN THE ULTIMATE CAR STEREO SYSTEM!

How would you like to create your own ultimate car stereo system by choosing components from the manufacturers shown here, up to a retail value of \$5000*?



Well, now you can have the power amp, head unit and speakers you've always wanted if you're the Grand Prize winner in **Audio Magazine's Ultimate System Sweepstakes**. Besides our Grand Prize winner, 4 other lucky participants will win individual components.

To enter, just call the **AutoMatch Hotline 1-900-420-2886** and enter code **555** when asked. You'll not only be in the sweepstakes, but we'll even send you a complete set of car stereo specifications for the exact make, model and year of your vehicle. If you prefer, you can just enter the contest (no car specs) by sending a postcard (include name, address, phone #) to AutoMatch Contest, c/o Audio Magazine, 1633 Broadway, NY NY 10019. You may enter as many times as you wish by phone or mail.

No purchase is necessary and contest ends July 31, 1991. Call Now!!

Audio

AutoMatch Hotline 1-900-420-2886 \$1⁰⁰ for first minute. \$1⁵⁰ each additional minute. Contest open to U.S. citizens only, 18 years and older. Void where prohibited by law. For complete rules and winners' names, write to Audio Contest Rules at address printed above.

*Includes \$500 installation credit

BOB MINTZER INVITES YOU TO SIT IN WITH HIS BAND.

The personnel list of the Bob Mintzer big band reads like a who's who of New York studio players.

But anyone can sit in. Anyone with a CD player.

You see, Mintzer's latest release, *Art Of The*

number of individually pre-ampped microphones. While recording, the signal from each microphone is immediately converted to digital and mixed on a 24-bit digital console.

The result is a recording with more musical information than is usually present in ordinary recordings.

Which in turn complements Mintzer's composing and arranging



Get a 9-song *Up Close* Bob Mintzer CD compilation. Send \$5 check to: Boston Acoustics, Dept. S7, P.O. Box 625, Holmes, PA 19043 Allow 4-5 weeks. Offer good until June 30, 1991 or while supplies last.

Big Band is recorded with such exacting digital techniques that the listener is transported right into the studio with the band.

The credit for this sonic feat goes chiefly to engineer and DMP Records president, Tom Jung.

Jung subscribes to the "less is more" school of engineering. To record the 17-piece Mintzer band, he used a minimum



Audio Magazine calls the T1030 Reference Standard Speaker "a tremendous value." Its 1-inch soft dome tweeter, 6 1/2 inch midrange and dual 8-inch copolymer woofers recreate Bob Mintzer's ensemble brass with clarity and power.

style. While big band music is in itself complex, Mintzer creates even deeper shadings of texture and complexity in his music. Shadings that would be lost to lesser recording techniques.

Hear Bob Mintzer for yourself on a pair of T1030 Speakers. Music this good should be heard on speakers this good.

BostonAcoustics

OPTIMUS®

LIVE IN CONCERT!™

The music soars as the performer pours out his passion in a statement of the art. Music this expressive demands the performance to life: Optimus.

The Optimus® SCP-43 Personal AM/FM Stereo Cassette gives you clean, dynamic sound on tapes thanks to Dolby™ B NR, plus enhanced bass with the Dynamic Loudness system. Auto-reverse plays both tape sides. You get precise digital tuning with 10 presets and auto-search, plus a digital clock/tuning display. In-ear stereo phones, rechargeable battery and AC charger/adaptor are included.

The Optimus Personal Stereo Receiver gives you pure, true-to-life sound. Digital tuning locks in stations precisely. Auto-search and 19 AM/FM presets with auto-scan make finding, storing and recalling stations easy.

The Optimus brand is designed, crafted and tested to the highest quality standards in consumer electronics. It's technology that performs for you.

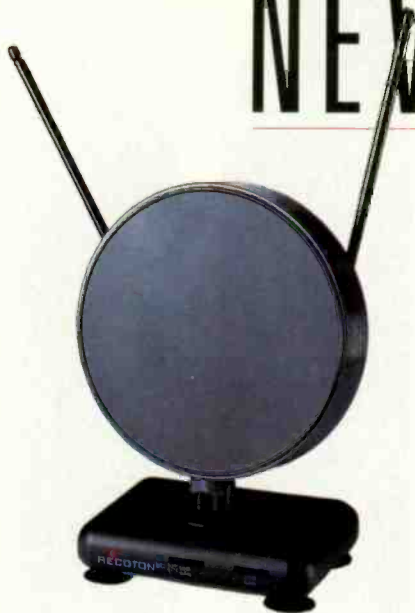
Hear it today, at . . .

Radio Shack®
AMERICA'S
TECHNOLOGY
STORE™

A DIVISION OF TANDY CORPORATION



NEW PRODUCTS



Recoton

Recoton's Power Wave TV 600 amplified antenna system was designed by audio engineer Larry Schotz to pull in weak TV and FM signals. Features include a three-stage VHF amplifier, a low-noise, high-gain UHF amplifier, a front-panel adjustable gain control for UHF and VHF, an LED power indicator, and noise-reduction circuitry. The antenna elements can be swiveled and tilted for optimal positioning. The finish is matte black and gray. Price: \$99.95. Recoton, Dept. SR, 46-23 Crane St., Long Island City, NY 11101.

Circle 120 on reader service card

Proton

Proton's newest 400 Series component, the AV-445 AM/FM stereo receiver, features new digital tuning circuitry that's said to have better sensitivity and less susceptibility to overload than previous designs. Rated at 50 watts per channel, the receiver has CD, phono,

tape, and video inputs, sixteen FM and eight AM presets, bass and treble controls, a loudness-compensation switch, one tape-monitor loop, and a remote control. Price: \$399. Proton, Dept. SR, 5630 Cerritos Ave., Cypress, CA 90630.

Circle 121 on reader service card



Dynaco

The Stereo 70 Series II is an upgraded version of Dynaco's popular 1960's vacuum-tube power amplifier. The Series II uses the same basic design and the same audio output transformers and EL34/6CA7 output tubes as the original amp, with new precision metal-film resistors, poly-composition capacitors, and miniaturized high-capacity power-supply electrolytics. Filter capacitance is said to be triple that of the original version. The Stereo 70 Series II is rated at 35 watts continuous average power per channel into 4, 8, or 16 ohms with less than 0.25 percent total harmonic distortion. Price: \$995. Dynaco, Dept. SR, 125 Cabot Ct., Hauppauge, NY 11788.

Circle 122 on reader service card



a/d/s/

The M20 is the flagship model in the new line of a/d/s/ loudspeakers. It employs a 1-inch copolymer-dome tweeter, a 6-inch midrange driver with a stainless-steel voice-coil former, and two 8-inch woofers mounted in a bandpass enclosure. Frequency response is rated as 23 to 22,000 Hz \pm 3 dB, sensitivity as 91 dB. Nominal impedance is 4 ohms. The Linkwitz-Riley crossovers have 24-dB-per-octave slopes with transition points at 200 and 2,500 Hz. The M20 measures 43 $\frac{1}{2}$ x 10 $\frac{1}{2}$ x 16 $\frac{1}{2}$ inches. Available finishes are rosewood, walnut, or matte black. Price: \$3,500 a pair. a/d/s/, Dept. SR, One Progress Way, Wilmington, MA 01887.

Circle 123 on reader service card

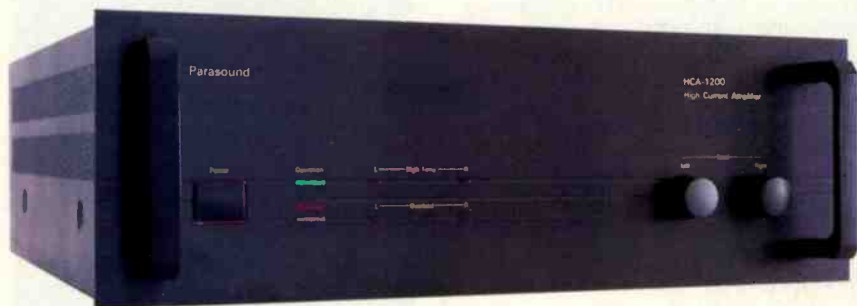
NEW PRODUCTS

Parasound

Parasound's HCA-1200 high-current power amplifier has a rated output capability of 40 amperes continuous and 57 amperes peak. It can deliver 200 watts per channel rms, or 600 watts in mono mode, into 8 ohms with total harmonic distortion of no more than 0.02 percent and intermodulation distortion of less than 0.1 percent. The HCA-1200 incorporates discrete Class AB circuits at the

output stage and matched-pair junction field-effect transistors and Class A cascode circuits at the input stage. It uses polystyrene and polyethylene capacitors to bypass the power supply, rated at 60,000 μ F, and has gold-plated input jacks and five-way speaker terminals. Price: \$775. Parasound Products, Dept. SR, 950 Battery St., San Francisco, CA 94111.

Circle 124 on reader service card



Onkyo

The Onkyo DX-702 compact disc player has an optical digital output for connection to other digital components. Features include shuffle play, ten-key direct access, CD Synchro Start and a time-edit function for dubbing a CD to cassette, and auto play, which starts play when the unit's power is switched on. Additional features include twenty-track programming, three-mode repeat, a twenty-track music calendar, and a

headphone jack with volume control. The player's four AccuPulse single-bit digital-to-analog converters (two per channel) incorporate ultra-high-precision quartz clocks to reduce CD "jitter," and there is an eight-times-over-sampling digital filter. A twenty-six-key remote control is included. The DX-702 is compatible with Onkyo's RI remote-control system. Price: \$230. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446.



Kenwood

The three-way, 6½-inch KFC-HQ160 is the top model in Kenwood's new HQ line of car speakers. It uses a water-resistant, mica-blended polypropylene woofer, a polyethylene-film cone midrange driver with an aluminum voice coil, and a "balanced dome" tweeter whose diaphragm is made of natural-color polyimide film, a lightweight, heat-resistant material. It also has heat-resis-

tant polyamide dampers and oxygen-free-copper cables. The door-mounting speaker, designed for easy installation in tight spaces, can handle a peak power input of 150 watts. Frequency response is given as 35 to 22,000 Hz. Price: \$149 a pair. Kenwood, Dept. SR, 2201 E. Dominguez, P.O. Box 22745, Long Beach, CA 90801-5745.

Circle 125 on reader service card



Acoustic Research

The M6 is the top model in Acoustic Research's new line of Holographic Imaging loudspeakers. The biampable three-way system uses a ¼-inch ferrofluid-cooled aluminum-dome tweeter, a 5-inch long-throw carbon/mica-filled polypropylene-cone midrange, and two 8-inch heavy-paper cone woofers. The woofers are mounted in a filtered-acoustic-suspension bandpass enclosure. Anechoic frequency response is rated as 42 to 20,000 Hz -3 dB and sensitivity as 90 dB. Finishes include gray suede paint, white or black gloss, or wood veneer. Dimensions are 42 x 8½ x 10½ inches. Price: \$1,300 a pair. Acoustic Research, Dept. SR, 330 Turnpike St., Canton, MA 02021.

Circle 126 on reader service card



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

GET **8** COMPACT DISCS FOR THE PRICE OF **1**

...with nothing more to buy ever!

And...take advantage of our **INSTANT HALF-PRICE Bonus Plan!**

SAVE 50%

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



Madonna: The Immaculate Collection (Sire) 54164

Yanni: Reflections Of Passion (Private Music) 24223

Roger McGuinn: Back From Rio (Arista) 81997

M.C. Hammer: Please Hammer, Don't Hurt 'Em (Capitol) 34791

Norrington: Beethoven, Sym. No.9 (Choral) (Angel) 00467

Supertramp: Classics (14 Greatest Hits) (A&M) 04891

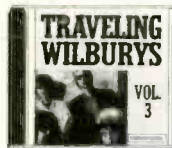
Prince: Graffiti Bridge (Paisley Park) 34107

Fleetwood Mac: Behind The Mask (Warner Bros.) 43766

Eddie Brickell: Ghost Of A Dog (Geffen) 73923

Paul Simon: Graceland (Warner Bros.) 72315

Tom Petty: Full Moon Fever (MCA) 33911



24817

Bette Midler: Some People's Lives (Atlantic) 53568

Cinderella: Heartbreak Station (Mercury) 73694

Dave Grusin: Havana/Soundtrack (GRP) 11082

Wilson Phillips (SBK) 00726

Best Of The Blues (Pair) 11140

Carly Simon: Have You Seen Me Lately? (Arista) 20912

Neil Young: Ragged Glory (Reprise) 34621

Music Of Bali (Nonesuch) 44671

Pretty Woman/Sdtrk. (EMI) 34631

Jane's Addiction: Ritual de lo Habitual (Warner Bros.) 10020

Frank Sinatra: Capitol Collector's Series (Capitol) 64362

Best Of Eric Clapton: Time Pieces (Polydor) 23385

Acoustic Alchemy: Reference Point (GRP) 82967

Paula Abdul: Shut Up And Dance (Remixes) (Virgin) 80326

ZZ Top: Recycler (Warner Bros.) 73969

Janet Jackson's Rhythm Nation 1814 (A&M) 72386

Clint Black: Put Yourself In My Shoes (RCA) 24690

Depeche Mode: Violator (Sire) 73408

Marvin Gaye: 15 Gt. Hits (Motown) 53534



10663

Anita Baker: Compositions (Elektra) 00921

Guy!...The Future (MCA) 14875

Styx: Classics (14 Gt. Hits) (A&M) 14822

Bird/Original Recordings Of Charlie Parker (Verve) 01044

Lita Ford: Silleto (RCA) 63893

Kronos Quartet: Winter Was Hard (Nonesuch) 00675

Garth Brooks: No Fences (Capitol) 73266

AC/DC: The Razors Edge (ATCO) 33379

George Benson/Count Basie: Big Boss Band (Warner Bros.) 13519

INXS: X (Atlantic) 64378

Nelson: After The Rain (DGC) 74079

Kenny G: Live (Arista) 64505

Damn Yankees (Warner Bros.) 14852

Best Of Steely Dan: Decade (MCA) 54135

Twin Peaks: TV Sdtrk. (Warner Bros.) 63540

Chicago: Gt. Hits (1982-1989) (Reprise) 63363

Gershwin Overtures, McGlinn (Angel) 70391

Gipsy Kings: Alegria (Elektra) 11178

Spyro Gyra: Fast Forward (GRP) 00829

Billy Idol: Charmed Life (Chrysalis) 62264

Opera Goes To Hell (Angel) 73953

Vanilla Ice: To The Extreme (SBK) 24689

The Cure: Mixed Up (Elektra) 74190

Black Crowes: Shake Your Money Maker (Def American) 52142

The Chick Corea Akoustic Band: Alive (DGC) 10721

Great Love Songs Of The '50s & '60s Vol. 1 (Laurie) 20768

Best Of Robert Palmer: Addictions (Island) 10819

Mario Lanza: The Great Caruso (RCA) 80259

Jackson Browne: Running On Empty (Elektra) 11056

Faith No More: The Real Thing (Reprise) 63719

Andrew Lloyd Webber: The Premiere Collection (MCA) 53868

Bob Marley: Legend (Island) 53521

Vincent Herring: American Experience (MusicMasters) 83701

Steve Winwood: Refugees Of The Heart (Virgin) 54232

Trixter (Mechanic/MCA) 61594

Marcus Roberts: Alone With Three Giants (Novus) 54397

Diane Schuur: Pure Schuur (GRP) 10824

Best Of Dire Straits: Money For Nothing (Warner Bros.) 00713

Don Henley: The End Of The Innocence (Geffen) 01064

Peter Gabriel: So (Geffen) 14764

Suzanne Ciani: Pianissimo (Private Music) 11047



35078

David Lee Roth: A Little Ain't Enough (Warner Bros.) 10551

Horowitz At Home (DG) 25211

Deee-Lite: World Clique (Elektra) 52050

Jon Bon Jovi: Blaze Of Glory (Mercury) 44490

Bell Biv DeVoe: Poison (MCA) 00547

Pat Metheny: Question And Answer (Geffen) 73522

Guns N' Roses: Appetite For Destruction (Geffen) 70348

Solti: Tchaikovsky, 1812 Overture (London) 25179

Sinead O' Connor: I Do Not Want What I Haven't Got (Chrysalis) 33512

Take 6: So Much 2 Say (Reprise) 53580

Heart: Brigade (Capitol) 64305

Crosby, Stills, Nash & Young: Gt. Hits (So Far) (Atlantic) 30230

YOUR SAVINGS START HERE

Mail to: BMG Compact Disc Club / P.O. Box 91412 / Indianapolis, IN 46291

YES, please accept my membership in the BMG Compact Disc Club and send me the four Compact Discs I have indicated here, under the terms of this offer. I need buy just 1 more CD at regular Club prices during the next year after which I can choose 3 more CDs FREE! That's 8 CDs for the price of one...with nothing more to buy, ever! (A shipping/handling charge is added to each shipment.)

RUSH ME THESE 4 CDs (Indicate by number):

I am most interested in the musical category checked here--but I may always feel free to choose from any (check one only)

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

Mr. Mrs. Ms. First Name Initial Last Name (PLEASE PRINT)

Address Apt.

City State Zip

Telephone (Area code)

Signature

Limited to new members, continental USA only. One membership per family. We reserve the right to request additional information or reject any application. Local taxes, if any, will be added.

AFTFC AS

The Best Audio Tape



▶▶ No one has a longer or more distinguished history of leadership and innovation in metal tape than TDK. So when we introduced the MA-R back in 1979, it instantly became the benchmark all other metal tapes would be measured against.

Since that time, however, the evolution of digital recording sources has progressed far beyond what anyone ever expected. Beyond what even the most advanced metal tapes in the world are capable of reproducing.

Which is why we created the new MA-XG. A tape which is not only the best audio tape in TDK's history.

But the best tape in recorded history.

DIGITAL MUSIC DEMANDS PERFECTION IN A CASSETTE.

Music from digital sources is dynamic to say the least. It can go from absolute silence to maximum loudness instantaneously. And for an audio cassette to reproduce its

power and dynamic range accurately and free from distortion, the audio tape has to have extremely high output capability or what is known as MOL (Maximum Output Level).

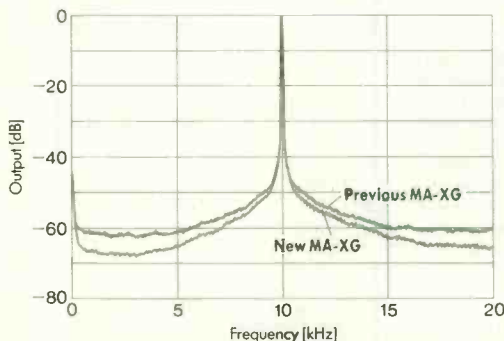
But digital music can also go from maximum loudness to absolute silence instantaneously. And the lack of background hiss makes the clarity of the pianissimos and the transparency of the passages that linger and fade striking. To convincingly reproduce this kind of delicacy requires a tape with extremely low bias noise. Otherwise, music signals which are softer than the tape noise will be masked and inaudible.

The perfect recording tape then, for CDs and other digital sources, is one with the highest possible output and the lowest possible noise. The kind of tape it was almost impossible to design. Almost.



THE WORLD'S BEST DUAL-LAYER PURE METAL TAPE.

Rather than settle for a tape which compromises output for low noise, or low noise for output, TDK opted for a tape that compromised nothing. So the MA-XG combines two separately "tuned" layers of ultrafine Finavinx magnetic particles. The bottom layer utilizes a unique high-density Finavinx particle designed for *highest possible output*. The upper layer consists of *low*



MODULATION NOISE SPECTRUM

In Recorded History.

noise ultrafine Finavinx particles arranged in a high-density coating with the help of TDK's proprietary particle orientation technology.

What this unique design results in is a metal tape with the highest output (+7.5 dB at 315 Hz) and the lowest noise (-59 dB) of any analog cassette. Or more simply put, the ultimate "digital ready" tape.

A MECHANISM AS SOPHISTICATED AS THE TAPE.

You don't even have to listen to the MA-XG to know how advanced its design is. Just hold it in your hand. Its extra heavy-weight RS-III mechanism



utilizes an unprecedented super-rigid five-piece construction which provides the ultimate defense against vibration and the sound-smearing effects of modulation noise as shown on the modulation noise chart. The unified dual-layer molded face plates consist of a non-rigid plastic outer layer for



resonance reduction and an inner layer of fiberglass-reinforced plastic for strength. These two plates and three side frames are held together by ten screws (three different kinds), applied both vertically and sideways, resulting in dimensional precision and structural integrity previously impossible to achieve. It even employs a system of internal sound stabilizer weights and super high-precision guide pieces to ensure maximum vibration attenuation and the highest degree of azimuth accuracy.

AUDIO MAGAZINE AGREES MA-XG IS THE BEST EVER.

That the TDK MA-XG is the ultimate recording tape is not just our opinion. It's a belief shared by the ultimate authority: *Audio* magazine. After an exhaustive test of 88 audio cassettes (the results of which were published in the March 1990 issue), *Audio* found the MA-XG to be not only the best of any metal (Type IV) tape, but the best of any tape. Period.

So, if you're going to record digital music, make sure you record it on the new MA-XG. Because the best music in recorded history shouldn't lose anything in the translation. ◀◀



 **TDK**®

As Serious As You Can Get.

DEEP

BASS

SUBWOOFERS



MILLER & KREISEL
SOUND CORPORATION

**Push-Pull Dual Driver
Powered Subwoofers**

**MX-100, MX-90,
MX-80, & MX-70**

10391 Jefferson Boulevard
Culver City, CA 90232
(213) 204-2854

Musical Articulation. Detail. Elusive qualities of superior sonic reproduction that are rarely found in even the most expensive subwoofers.

Until now!

M&K's new MX subwoofers bring you these high-performance qualities—in a smaller cabinet and at a lower price.

In a cabinet the size of a bookshelf speaker, two new proprietary 12" subwoofer drivers produce the massive amounts of bass only expected from much larger cabinets. Better yet, M&K's Push-Pull design produces a much higher quality of bass by virtually eliminating even-order harmonic distortion.

MX-100, MX-90, MX-80 & MX-70

Four MX models, with internal amplifiers between 75 and 200 watts RMS, provide an ideal match for your system.

Building On Excellence

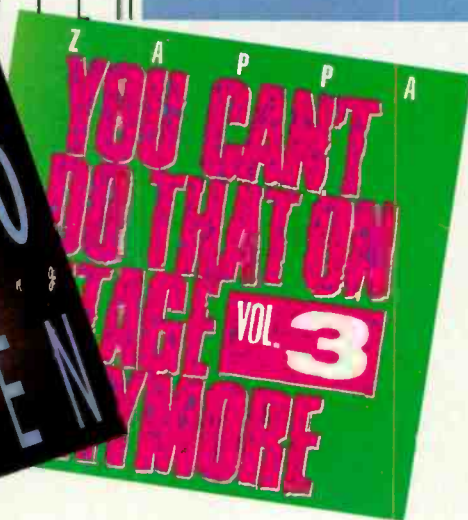
Seventeen years of M&K experience in Satellite-Subwoofer systems comes together *again* to create a new subwoofer performance standard. And with the 18" x 10" x 13.5" MX-70, M&K creates a new *compact* subwoofer standard.

The Ideal Choice

The unprecedented musical articulation and "ultra quick" sound of the MX subwoofers make them the perfect choice to complete any audio or audio/video system.

SPECIAL CD OFFER

Jimi
Hendrix
Experience
Radio
One



Rykodisc Strikes Again!

RYKODISC'S new sampler, "Steal This Disc 3," is the latest in STEREO REVIEW's series of special CD offers intended to help our readers expand their musical horizons at minimal cost. At present, "Steal This Disc 3," a full-length compact disc with a playing time of more than 70 minutes, is available exclusively to this magazine's readers for only \$3.99 for postage and handling. Requests for it will be fulfilled by Bose Express Music.

The twenty-three selections on "Steal This Disc 3" show an exceptionally wide range of contemporary popular music. The disc is up to the minute with *Walking Nerve*, a track from Nils Lofgren's new album "Silver Lining," which was a "Best Recording of the Month" in STEREO REVIEW's May issue.

In addition to Lofgren, the sampler includes tracks by three other guitar heroes—Jimi Hendrix, Evan Johns, and Frank Zappa. And speaking of heroes, a rare David Bowie performance on the CD is a bilingual take of his song *Heroes* in English and German.

The folk/country/acoustic strain of contemporary music is represented in the sampler by John and Mary (see page 82), Jerry Jeff Walker, Chris Wall, Country Joe, and June Tabor and the Oyster Band. The English influence is evident in the work of Badfinger, Dave Stewart and Barbara Gaskin, and Ringo Starr.

The Jolly Boys bring a Jamaican flavor to the mix, and vibrations of World Music are added by 3 Mustaphas 3 and Mouth Music. The sound of alternative rock comes from Barking Tribe and Devo. Other artists in "Steal This Disc 3" are Hex, Michael Case Kissel, Kuriokhin & Kaiser, McGear, and Marty Willson-Piper.

The contents of the sampler demonstrate the breadth and depth of the Rykodisc catalog and its growth over the last few years. So far the most popular of STEREO

REVIEW's special CD offers has been Rykodisc's previous sampler, "Steal This Disc 2," which we made available in June 1988. It drew the greatest response from our readers. The editors are confident, however, that even more people will want the new "Steal This Disc 3," and we do not hesitate to recommend it.

To get your copy of "Steal This Disc 3," fill out the coupon below, clip it from the magazine, and send it to Rykodisc Sampler, Bose Express Music, 50 West 17th St., New York, NY 10011 along with credit-card information or a check or money order for \$3.99 for postage and handling. For orders from outside the United States please use credit cards (US\$6 charge).

The coupon must be included with your request; photocopies are not acceptable. The offer is limited to one CD per household. Requests must be received by Bose Express Music by August 1, 1991. The offer is void after that date.

SPECIAL CD OFFER

For STEREO REVIEW readers only:
"Steal This Disc 3" from Rykodisc USA

- Enclosed is my check or money order for \$3.99 for shipping and handling.
- Please charge my credit card
- VISA MASTER AMEX

_____ Exp. _____

NAME (please print) _____

ADDRESS _____
(STREET AND NUMBER)

(CITY) _____ (STATE) _____ (ZIP) _____

Mail to Rykodisc Sampler, Bose Express Music,
50 West 17th St. New York, NY 10011.

Make check or money order payable to Bose Express Music. Outside the United States please use credit card (US\$6 charge). Offer void after August 1, 1991.

Dual Mode
Crossover
ALC11

FL

12KZ

MF

LF

Neodymium
Multi-Mount
Tweeter
TW2

Bass/Mid Driver
M514



ALTEC LANSING CREATES GREAT
SOUND FROM SOME OF THE
WORLD'S FINEST SPEAKER ENCLOSURES.

When Altec Lansing designs speakers for your home, we house them in a meticulously engineered environment that helps deliver musical accuracy and extended dynamic range.

To create this same level of high fidelity reproduction from a system surrounded by the tons of steel, plastic, and cloth in your car, we went our separate way from conventional car speakers. Introducing the Altec Lansing separates.

This newly conceived line of individual woofers, tweeters, and



Bass/Mid Driver
M615

Bass/Mid Driver
M400

AND FROM SOME OF THE WORST.

crossovers allows you the flexibility to position your speaker components so they provide perfect imaging, balance, and ambiance to everyone in your car.

And since these separates are substantially downsized, they're designed to please you aesthetically as well as acoustically.

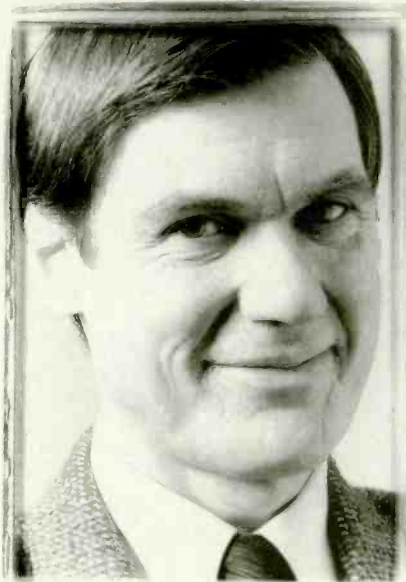
Altec Lansing has built a reputation for bringing true concert sound into your home. Now with Altec Lansing's separates, we've taken the show on the road. For more information, or for the Altec Lansing dealer nearest you, call toll-free 1-800-ALTEC-88.

**ALTEC
LANSING**

LOUDSPEAKERS FOR
THE WELL TRAINED EAR

AUDIO Q&A

by Ian G. Masters



Equalized Hearing

Q I have a hearing loss at high frequencies that results from working in noisy surroundings. My audiologist says I don't need a hearing aid, but I would like to compensate in some way so that I can enjoy classical music. Would adding an equalizer to my system help?

STANLEY D. SILSBY
Granby, MA

A It's worth a try, but I wouldn't expect miracles. For one thing, as the audiological report you included with your letter shows, the loss can be as much as 40 dB at some frequencies. Few, if any, equalizers will let you boost a signal by that much, and if it did it might well cause damage in whatever you used to reproduce the sound. Also, if anyone else were in the room with you, the sound would be unbearable for them.

Even though you may not be able to achieve truly flat response, however, it might well be possible to restore some of the missing matter—enough at least for the sound to be pleasant. In any event, the response need not be perfectly flat to sound good; the human brain is very good at adapting to what is, in absolute terms, bad sound. It's impossible to predict how an equalizer would work for you, and you would probably only really find out by installing one and living with it for a while. Fortunately, there are some very reasonably priced models available, so the experiment need not be costly.

CD Skipping

Q Virtually all my CD's skip forward or back randomly, which is not only audible but can be seen on the elapsed-time display. After a disc skip back, it will then play through the same section with no problem. I have had the machine in for service and was told that the culprit was scratches on my CD's. I can't see any, and

my discs play flawlessly in other machines. What's happening?

BILL SCHROEDER
Bloomfield, NJ

A I doubt that it has anything to do with the discs themselves, but it may not be a machine fault either. Try using your player in a different room, either patching it through a friend's system or simply listening to several discs using headphones. If everything works in the new location, the player is probably fine, but there is something amiss in the way it has been set up.

For instance, the mechanism that moves the laser beam across the disc may be suffering some sort of disruption. In most players this is a fairly simple assembly, and it can be subject to a number of external influences. If your player always skipped in one direction, for example, the problem might simply be one of gravity, and the cure would be to make sure the player and the shelf supporting it were absolutely level. Another possible cause is vibration, either from people walking near the player or from the audio itself. Some experimentation might reveal a new position for the player where the problem does not occur. If not, there is probably something wrong internally, and you will have to take it back to the shop once again or return it to the manufacturer's own service facility.

Adding Amplifiers

Q I would like to add a second amplifier to my system to allow independent control of a second set of speakers, which I intend to use for rear ambience. Is this a good idea, and is there a way to set it up without having to split each of my source signals?

RICK DYKOWSKI
Dearborn, MI

A There's certainly no reason not to do this, although simply duplicating the main signal at the back of the room is hardly a matter of ambience. For that, you would require a device that either uses sophisticated circuitry to synthesize an acoustic "space" or at least retrieves out-of-phase information from your recordings. To use speakers in the rear to "fill in" the sound, or to add a second set in another room, is perfectly valid, however. The easiest way is to feed the second amplifier from the record-out jacks of the main unit, which would feed whatever input you have selected on the main amp to the second one as well. If there are two tape-monitor loops, attach the outboard amplifier to the second one so that your tape deck—

connected to the first—will be available as well (the main unit will think the tape signal is being "dubbed" to the second amp).

Alternatively, if your main amplifier has preamplifier outputs, these can be used to feed the remote amp, which will allow independent control of relative levels but overall master level setting as well. If the main amplifier's tone controls are set at anything but their flat positions, however, such adjustments will be passed on as well, which might rule out this option.

Dialogue Channel

Q When I use my passive surround-sound decoder, which drives front and rear pairs of speakers, I usually switch the speakers in my video monitor to mono and use them as a center channel for dialogue. Am I getting the same effect as I would with a Dolby Pro Logic decoder?

TOM DE ANGELO
Staten Island, NY

A No. The Dolby Pro Logic circuit detects signals that are present at the same level and phase in both front channels, which includes almost all the dialogue, and feeds that information only to a center channel; it also removes it from the main front channels. This preserves full stereo separation for the part of the program that needs it—music and effects—but firmly locks the dialogue in the center, even for off-axis listeners. Without a special center speaker, the phantom center image would coincide with the TV screen only for viewers who are precisely on-axis.

Simply feeding a left-plus-right signal to a center channel, as you are doing, might well fill in the hole in the middle to some extent, but it would also narrow the sound stage somewhat, as signals intended to be heard exclusively from one side or the other would play through the center speaker as well. Also, in most cases the speakers built into TV sets are sonically very different from the sorts of speakers used for the main stereo material, which can cause a very disconcerting tonal imbalance between channels. Not only that, there is a pretty good chance that your ad hoc center channel will be out of phase with the rest of the system, which would cause at least partial cancellation of the dialogue—hardly the effect you are aiming for.

If you have a question about hi-fi, send it to Q&A. STEREO REVIEW, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.



To solve the annoying problem of disc skipping, we introduce the newest Kenwood car CD systems.

They're built with our exclusive disc transport for maximum vibration control. So now you can cruise over uneven terrain without missing a beat from your favorite discs.

The key to it all is our Automatic Slant Angle Adjustment, which keeps the transport at an even level for smooth playing.

To top it off, we also added one-bit technology with 256 times oversampling for cleaner sound.

For the name of your nearest dealer, call 1-800-4-KENWOOD.

After all, it's the music that should overwhelm you. Not the road.



IT WAS EITHER
IMPROVE THE
ROAD OR
IMPROVE THE
CD PLAYER.

KENWOOD

CIRCLE NO. 9 ON READER SERVICE CARD

George A. Dickel & Co., Cascade Hollow, Tullahoma, TN. George Dickel™ - 40% Alc/Vol (80 Proof) © 1991.



Afternoons at the secret fishing hole of the Little Meadows Hunt Club,
and the smooth mellow taste of George Dickel.
Ain't Nothin' Better.

George Dickel

TEST REPORTS



Denon DRA-1035R Receiver

Julian Hirsch, Hirsch-Houck Laboratories

THE Denon DRA-1035R, a powerful and flexible AM/FM stereo receiver, also provides video and audio control facilities for two VCR's and a videodisc player. Although we have seen receivers with similar features identified as "audio/video" (A/V) components, Denon has wisely refrained from following suit. Current convention seems to require that a true A/V receiver contain some form of Dolby Surround decoder and at least two additional power amplifiers for the surround speakers. Denon does make such receivers but has designed the DRA-1035R for those who primarily want a high-power, high-performance audio receiver without a lot of extra video-related features.

The DRA-1035R is rated to deliver 130 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.015 percent total harmonic distortion (THD). Although it is not rated for loads of less than 8 ohms, the receiver has outputs for two sets of speakers that can be driven individual-

ly or simultaneously. The outputs are marked to indicate a minimum allowable speaker impedance of 4 ohms when one set is driven or 8 ohms when both are driven.

The DRA-1035R has a digital frequency-synthesis tuner with forty preset memories, each assignable to either an AM or an FM frequency. There are input jacks for a moving-magnet or moving-coil phono cartridge, a CD player, and a videodisc player, plus recording and playback jacks for two audio tape decks and two VCR's. There are also video inputs and outputs for two VCR's, a video input for a videodisc player, and a video output for a monitor. The receiver has separate preamplifier outputs and main-amplifier inputs, which can be joined or separated by a push-button on the rear apron.

The speaker outputs are insulated binding posts that accept stripped wires or dual banana plugs. The tuner antenna inputs include an F-type coaxial jack for a 75-ohm FM antenna and spring-clips for connecting the

supplied AM wire-loop antenna. There are four AC outlets, three of them switched, and jacks for controlling a compatible Denon tape deck through the receiver and for controlling the receiver from other rooms via a Denon Room-to-Room remote-control system (sold separately).

The basic front-panel controls are a large volume knob and smaller knobs for bass and treble, balance, and loudness compensation. The loudness control, operating independently of the volume setting, provides a flat response at its clockwise limit; counterclockwise rotation reduces the level of the middle frequencies more than that of low and high frequencies. This system allows a wide range of loudness compensation at any listening level, independent of program level or speaker sensitivity.

Small buttons to the right of these knobs create a simulated-stereo effect with mono programs, bypass all tone controls and other signal-processing circuits (SOURCE DIRECT), and select stereo or mono amplifier operation. Other front-panel controls include independent activation buttons for two sets of speakers and the power switch.

Near the center of the panel, across most of its width, is a row of rectangular pushbuttons. Twelve of them are the tuner preset controls. Others se-

TEST REPORTS

FEATURES

- Digital frequency-synthesis AM/FM tuner with forty presets
- Auto-scan and manual step tuning
- Switchable wide or narrow FM IF bandwidth
- Inputs for CD, phono (switchable for MM or MC cartridge), two audio tape decks, two VCR's, videodisc player
- Independent selection of video and audio sources
- Video sources recordable on either VCR
- Video monitor output
- Switchable connection between preamplifier output and main-amplifier input on rear apron
- Simulated-stereo mode for mono signals
- SOURCE DIRECT switch to bypass all signal-processing circuits
- Stereo/mono switch for amplifier section
- Bass and treble tone controls, balance control, independently variable loudness compensation
- Connections and switching for two pairs of speakers
- Coaxial input for 75-ohm FM antenna
- Detachable AM wire loop antenna
- Volume control motor-driven in remote operation
- Display of complete operating status
- Rear-apron jacks for controlling compatible Denon tape or CD player and interfacing with Denon multiroom system
- Supplied system remote control
- Four AC outlets, three switched

LABORATORY MEASUREMENTS

- **Tuner Section** (all figures for FM only except frequency response; measurements in microvolts, or μV , referred to 75-ohm input)
 - Usable sensitivity:** mono, 13 dBf (1.25 μV) in wide mode, 15 dBf (1.5 μV) in narrow mode; stereo, below stereo threshold of 32 dBf (11 μV)
 - 50-dB quieting sensitivity:** mono, 17 dBf (2 μV) in either mode; stereo, below stereo threshold
 - Signal-to-noise ratio** at 65 dBf: mono, 85.2 dB wide, 84.6 dB narrow; stereo, 83.6 dB wide, 83.5 dB narrow
 - Harmonic distortion (THD + N)** at 65 dBf: mono, 0.05% wide, 0.15% narrow; stereo, 0.065% wide, 0.15% narrow
 - Capture ratio** at 65 dBf: wide, 1.5 dB; narrow, 4.1 dB
 - AM rejection:** 70 dB
 - Pilot carrier leakage** (19 kHz): -64 dB
 - Hum:** -82 dB (120 Hz)
 - Stereo channel separation** at 100, 1,000, and 10,000 Hz: wide, 47.5, 51, and 37 dB; narrow, 40.5, 41.5, and 35 dB
 - Frequency response:** FM, ± 0.7 dB from 30 to 15,000 Hz; AM, +4, -6 dB from 28 to 2,700 Hz
- **Amplifier Section**
 - 1,000-Hz output at clipping:** 155 watts into 8 ohms, 215 watts into 4 ohms
 - Clipping headroom** (relative to rated output): 0.76 dB
 - Dynamic power output:** 203 watts into 8 ohms, 350 watts into 4 ohms, 505 watts into 2 ohms
 - Dynamic headroom:** 1.94 dB
 - Maximum distortion** (20 to 20,000 Hz into 8 ohms): 0.014% at 20,000 Hz and 130 watts output
 - Sensitivity** (for a 1-watt output into 8 ohms): CD, 13.8 mV; MM phono, 0.24 mV; MC phono, 0.02 mV
 - A-weighted noise** (referred to a 1-watt output): CD, -84 dB; MM phono, -81.2 dB; MC phono, -75 dB
 - Phono-input overload** (1,000-Hz-equivalent levels): MM, 125 to 148 mV; MC, 9.4 to 12 mV
 - Phono-input impedance:** MM, 47,000 ohms in parallel with 140 pF; MC, 100 ohms
 - Tone-control range:** 100 Hz, +11, -9 dB; 10,000 Hz, ± 9 dB
 - Loudness-contour range:** 50 Hz, +8.2 dB; 10,000 Hz, +4.7 dB

lect the band (AM or FM), FM mode (stereo or mono), tuning mode (auto-scan or manual), IF bandwidth (wide or narrow), and tuning direction. Above these buttons are the input selectors, a REC OUT button that selects the audio source for recording independently of the program being heard, and a VIDEO SELECT button that selects the video source being sent to the video-recording and monitor outputs. The volume knob, to the right of the program selectors, has an illuminated index mark and is motor-driven when the remote control is used.

The display window, at the upper left of the panel, shows the receiver's complete operating status. Normally, only the information pertinent to the current mode is visible. The tuner frequency, band, and preset channel number (if applicable) are accompanied by the status of the auto-tuning, wide/narrow bandwidth, stereo/mono mode, and muting circuits. Other information includes the status of the speaker selectors and the source of the signal being sent to the speakers or to the REC OUT terminals. The independent selection of program and recording sources makes it possible to reproduce or record simulcast TV/FM programs.

The DRA-1035R is supplied with a highly versatile remote control, which is designed to be used with a number of other Denon products as well, including surround-sound receivers. Through the DRA-1035R, it can also operate compatible Denon CD players and cassette decks. In addition, the remote control can memorize the infrared codes used by most other audio and video components.

The DRA-1035R's FM tuner section has excellent specifications, including a stereo 50-dB quieting sensitivity of 37.3 dBf, a stereo noise level of -82 dB and distortion of 0.09 percent, a capture ratio of 1.3 dB, 80-dB image rejection, and 55-dB stereo channel separation.

The DRA-1035R is a large and fairly heavy receiver, measuring 17 $\frac{1}{8}$ inches wide, 15 $\frac{1}{8}$ inches deep, and 6 $\frac{3}{8}$ inches high. It weighs just under 27 pounds. The supplied remote-control unit, 9 $\frac{1}{4}$ inches long, 3 $\frac{1}{8}$ inches wide, and 1 inch thick, is powered by four AAA batteries. Price: \$1,000. Denon America, Inc., Dept. SR, 222 New Rd., Parsippany, NJ 07054.

TEST REPORTS

Lab Tests

The DRA-1035R's power amplifiers comfortably surpassed their power ratings. While the receiver was driving 8-ohm loads at 1,000 Hz, the front channels clipped at 155 watts, and it delivered 215 watts per channel into 4 ohms. The clipping headroom (8 ohms) was 0.76 dB. Because of the receiver's power ratings, and the admonition not to use loads of less than 4 ohms, we did not attempt to measure continuous power into 2-ohm loads.

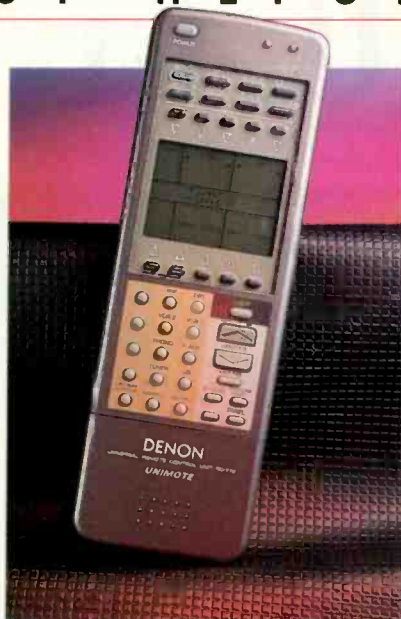
The receiver's dynamic power output was an impressive 203 watts into 8 ohms, 350 watts into 4 ohms, and 505 watts into 2 ohms (the 20-millisecond tone bursts of this measurement do not pose a risk to the output transistors or fuses). Dynamic headroom (8 ohms) was 1.94 dB. Total harmonic distortion plus noise (THD + N) of the power-amplifier section at 1,000 Hz (into 8 ohms) was 0.012 percent at a 1-watt output and 0.0039 percent at 65 and 130 watts.

A line-level (CD) input of 13.8 millivolts (mV) drove the amplifier to a reference 1-watt output. The sensitivity through the phono input was 0.24 mV for an MM cartridge and 0.02 mV for an MC cartridge. The respective A-weighted noise levels were -84 dB (CD), -81.2 dB (MM phono), and -75 dB (MC phono).

Frequency response (CD input) was +0.25, -0.55 dB from 20 to 20,000 Hz. The phono response was extremely flat, remaining within ± 0.04 dB from 20 to 6,000 Hz and rising slightly to +0.13 dB at 20,000 Hz. The overall response of the preamplifier section was within ± 0.25 dB from 60 to 20,000 Hz and down 0.55 dB at 20 Hz.

The bass tone control affected frequencies below 600 Hz, with a maximum boost of 12 dB in the 30- to 50-Hz range and a cut of 10 dB between 20 and 40 Hz. The treble control's response hinged at 2,000 Hz, with a maximum range of ± 10 dB at 20,000 Hz. The loudness-compensation control reduced the midrange level by a maximum of 16 dB at 1,000 Hz. Both high and low frequencies were affected to a lesser degree, giving a maximum effective bass boost (referred to 1,000 Hz) of 8.3 dB between 20 and 50 Hz and a maximum treble boost of 6 dB between 15,000 and 20,000 Hz.

The DRA-1035R's FM tuner section had excellent characteristics. Most



tuner measurements were made with its wide IF bandwidth setting. Usable sensitivity (mono) was 13 dBf (1.25 microvolts, or μ V, into 75 ohms). The 50-dB quieting sensitivity was better than 32 dBf, which is outstanding. Distortion was typically about 0.05 percent in mono and 0.065 percent in stereo, and the signal-to-noise ratio (S/N) was an impressive 85.2 dB in mono and an astonishing 83.6 dB in stereo. Channel separation was almost 55 dB at 400 Hz, falling to 40 dB at 30 and 8,000 Hz and 31 dB at 15,000 Hz.

Switching to the narrow IF mode had a negligible effect on sensitivity and S/N. Separation was slightly reduced, to about 41 dB over much of the frequency range. Distortion, as expected, rose in this mode of operation, to about 0.15 percent in either mono or stereo.

The most obvious effect of the bandwidth setting was on selectivity and capture ratio. The narrow-mode selectivity was an outstanding 92 dB for alternate-channel spacing and 20 dB for adjacent-channel spacing. In the wide mode, the readings were more typical of FM receivers, 58 and 8 dB, respectively. Capture ratio, a very good 1.5 dB in wide mode, deteriorated to a fair-to-poor 4.1 dB in the narrow mode. The AM tuner section's response was fairly typical, within ± 4 dB from 30 to 2,200 Hz and down 6 dB at 2,700 Hz.

We encountered a unique (and so far unexplained) effect when attempting to measure the tuner's image-rejection

ratio (rated at 80 dB or better). It was not possible to detect the image signal within the 132-dB range available from our signal generator. That does not mean the tuner has a 132-dB image-rejection ratio (a highly improbable figure), but we were unable to establish the reason for this anomaly. At any rate, the receiver is not likely to be susceptible to FM image interference.

Comments

In most of its performance characteristics, the DRA-1035R ranks among the finest receivers we have tested. Indeed, few separate tuners can match its FM performance, and its amplifier section is certainly among the most powerful (in actual performance, especially with dynamic signals) to be found among today's stereo receivers. Although we did not use it as a video control center, its video functions are limited to switching and are not likely to result in any significant degradation of picture quality.

In general, the receiver's controls are laid out logically and are easy to use. The display window is informative, for the most part showing the user only what he needs to know about the receiver's operation. The one exception is the appearance of the word VIDEO, AUDIO, or REC below the name of the selected program source, which has to do with the routing of the selected signal. The significance of these labels is not intuitive and is poorly explained in the manual.

Since the remote control supplied with the DRA-1035R is actually a system control for a number of Denon components, only a handful of its many buttons have any function with this receiver. It seemed to be unnecessarily confusing for use as a single-component control.

Such minor criticisms pale into insignificance, however, when viewed in light of the receiver's overall performance. The DRA-1035R offers an exceptional combination of a superb FM tuner with an enormously powerful amplifier, and it has more than enough control features and operating flexibility to satisfy almost anyone in the market for an easy-to-use receiver with a minimum of performance compromises. It's well worth its price even if you don't plan to use all of its video control features.

Circle 140 on reader service card

Watch what



you're doing.

This is something you won't see anywhere else in this magazine.

A home theater that isn't just technically advanced, but also refreshingly easy to use, thanks to one of the simplest on-screen operating systems ever devised.

Not only does it visually confirm each and every command. With the help of its on-screen



The M-R8010 receiver, with on-screen Dolby Pro Logic™ Surround setup. menus you can narrow in on specific functions step-by-step, screen-by-screen.

As a matter of fact it works so well on our TV's and VCR's, that we've extended it to include both our M-C6010 CD changer and M-T5010 dual cassette deck.

But, as with any well-run organization, our system components work best with a coordinator. In this case our new M-R8010 Home Theater



Our M-C6010 CD changer: 8x oversampling and 18-bit dual DAC's. receiver. With 6 audio/video inputs it can turn a TV, VCR, CD changer and cassette deck into a single, cohesive home theater.

In accomplishing this feat, our receiver is ably assisted by a learning remote. Once again, it's one of the simplest ever made. Each button



Our HS-U82 Hi Fi VCR, with S-VHS and noiseless visual search. performs the same function across several components. For example, the play button is the same for CD, VCR, and cassette deck.

The net result is an unprecedented amount of control over your home theater.

Programming up to 20 selections from a 5-disc CD magazine takes a matter of seconds (the memory has room enough for up to 50



The M-T5010 dual cassette deck boasts Dolby® HX Pro and logic control. different personally titled magazines).

Achieving the perfect surround sound delay is almost automatic (set your distance from the speakers and you're done).

And everything, from the simplest adjustment to the most complex program, is no sooner seen than done.

 **MITSUBISHI**

TECHNICALLY, ANYTHING IS POSSIBLE®

TEST REPORTS



Fried R/4 Loudspeaker System

Julian Hirsch, Hirsch-Houck Laboratories

OVER the years, many Fried speakers have used variations of the transmission-line principle of woofer loading. The output from the rear of the cone, instead of being confined to the interior of a sealed cabinet or simply vented to the outside through an opening, passes through a relatively long path within the cabinet before it is released to the outside.

Unlike the output from a conventional vented enclosure, the output from the transmission line does not

necessarily augment or extend the system's low-frequency response. In fact, its main purpose is to absorb the woofer's rear radiation while damping its primary resonance and improving its transient response.

The Fried R/4 is a medium-price three-way system whose 10-inch woofer is rear-loaded by a "line tunnel" duct (a modified form of transmission line) that terminates in a rectangular opening on the speaker's front panel. At 250 Hz there is a crossover to a 5½-inch cone midrange driv-

er, also rear-loaded by a tubular line-tunnel duct. Both the bass and midrange duct openings are filled with thick foam-plastic inserts.

The woofer and midrange driver cones are made of polypropylene, with rubber edge suspensions. The tweeter, which operates above 3,000 Hz, is fluid-damped and has a 1-inch paper dome. The high-frequency and midrange drivers are protected against burnout by series thermistors, whose resistance increases as they are heated by the current passing through the voice coil.

The R/4's cabinet is 34 inches high, 12 inches wide, and 10½ inches deep. Each speaker weighs 56 pounds. The cabinet's sides and top are finished in walnut veneer, and the black cloth grille is retained by plastic snaps. The woofer's line-tunnel termination is at the bottom of the speaker board, and the woofer itself is almost halfway up the panel, with the tweeter at the top and the midrange driver midway between them. The midrange line tunnel terminates on the back panel, directly behind the driver. Gold-plated multiway binding-post terminals are near the bottom of the rear panel.

The suggested placement for the R/4 is away from any room walls, angled slightly inward. The cabinet, fitted with supporting rear base extensions, tilts slightly backward to provide proper time alignment between the drivers. Spikes are provided to give the tightest coupling with the floor, but their use is optional.

The Fried R/4's specifications include a nominal impedance of 8 ohms, sensitivity of 90 dB, and a frequency response of 30 to 20,000 Hz \pm 2 dB. It is recommended for use with amplifiers rated between 25 and 100 watts per channel. Price: \$1,195 a pair (\$1,255 west of the Rockies). Fried Products Co., Dept. SR, 7616 City Line Ave., Philadelphia, PA 19151.

Lab Tests

For room-response measurements and listening, we placed the Fried R/4 speakers about 8 feet apart, 18 inches in front of a wall, and 4 feet from the side walls. We did not use the spikes.

The overall room response was quite uniform, with the usual standing-wave effects producing response variations of about 8 dB overall from 50 to 20,000 Hz. We measured the outputs

It's not just how it's made, it's how well it's made.

Whether you're on a budget or just seeking maximum value, don't be fooled by bargains that sound cheap at the store—they just might sound cheap when you get home.

Even Denon's most economical receivers, such as the DRA-335R and DRA-435R, preserve sound quality *first*. (This is Denon's Design Integrity principle.) Both of these receivers employ electronic switching and elegant circuit topology for the most direct signal paths. This not only lowers noise and distortion; it greatly enhances reliability.

For superior audio quality, the finest components are used throughout the signal path, including polypropylene and polystyrene capacitors and metal film resistors. Competitive receivers use skimpy transformers and IC output stages, which restrict your system's dynamic

range. Denon's discrete output transistors and substantial transformers give the DRA-335R and DRA-435R the power to drive even the most "difficult" speakers.

At Denon lower cost need not preclude important features. Both the DRA-335R and DRA-435R feature Variable Loudness and full Integrated System (IS) remote control of a CD player, CD changer and cassette deck. The 16-station programmable tuners of the DRA-335R and DRA-435R feature improved AM NRSC deemphasis.

Even though the Denon DRA-335R and DRA-435R receivers pack in so many features for the price, never forget the real reason to buy a Denon: Sound.

DENON
The first name in digital audio.



TEST REPORTS

of the woofer and the midrange individually, with close microphone spacing, and then combined the curves with each other and with the overall room curve. The curves overlapped with little ambiguity, and the composite response curve was unusually uniform over most of the range from 50 to 8,000 Hz. The overall response was ± 4 dB from 40 to 20,000 Hz. The most obvious departures from flat response were a 3-dB rise in the octave from 700 to 1,400 Hz and a dip of about 5 dB between 9,000 and 11,000 Hz.

The midrange rise was visible in both the room-response and close-miked measurements, as well as in quasi-anechoic FFT measurements (both our own and similar ones furnished by Fried), and it appeared to correlate quite well with a slight brightness in the speaker's sound. Bass output fell smoothly at about 8 dB per octave below 70 Hz but remained strong and useful to below 40 Hz.

When we measured the output at the woofer's line-tunnel opening, the results were distinctly different from similar measurements made on conventionally vented speakers. For one thing, the frequency response at the vent was very similar to that of the driven cone from 100 Hz down, instead of increasing to augment the woofer's response at low frequencies. For another, the level was roughly 12 to 15 dB below that of the woofer cone's output, so it could not contribute anything significant to the total bass output.

The system's impedance curve showed even more convincingly that the R/4 is not just a vented-box system. There was no increase of impedance at the woofer's resonance frequency; in fact, impedance fell from a constant 9 ohms between 20 and 50 Hz to about 5.6 ohms between 70 and 100 Hz. The speaker's impedance ranged from a minimum of 5.6 ohms at about 80 Hz to a maximum of 11.5 ohms at 400 Hz, except for a dip to 4 ohms at 4,000 Hz. The impedance phase angle remained within ± 20 to 30 degrees over the full frequency range.

The system's sensitivity was 86 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts of pink noise. With a drive level of 4.5 volts (equivalent to a 90-dB SPL), the woofer distortion was about 0.6 percent from its crossover frequency of 250 Hz

to about 70 Hz, increasing to 1 percent at 60 Hz, 2.5 percent at 40 Hz, and 7 percent at 25 Hz.

Horizontal dispersion was very good. The typical difference between the response curves on-axis and 45 degrees off-axis was less than 3 dB up to 10,000 Hz, reaching 6 dB or more at frequencies above 12,000 Hz. The system's group delay varied less than ± 0.1 millisecond from 2,000 to 20,000

The Fried R/4 speakers had a smooth, well-dispersed sound that was free of obvious coloration. Bass distortion was very low, and highs were smooth and extended.

Hz. The R/4 was able to absorb large power inputs without significant distortion. Our amplifier clipped at power levels from 840 to 1,090 watts (the latter at 100 Hz, in the woofer's range) before the speaker's output was significantly distorted.

Comments

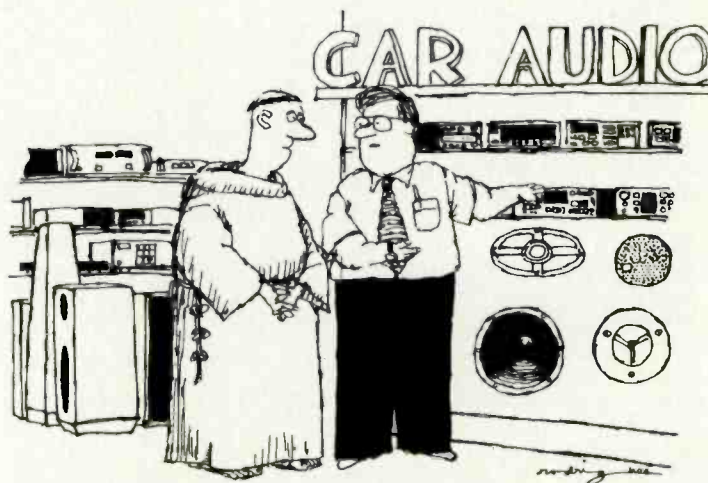
The Fried R/4 had a smooth, well-dispersed sound that was free of obvi-

ous coloration. The upper bass was not artificially emphasized, and male voices were reproduced without boom or tubbiness. Low bass was not lacking, although it was not as powerful below 40 Hz as we have experienced with some other speakers of comparable size and price. Distortion was very low through the woofer's operating range. Highs were smooth and extended, although there was a touch of brightness or crispness compared with the sound of some other speakers in the R/4's price range. While there is no obvious explanation for this effect in the measured response curves, we suspect that it is related to the slight 1,000-Hz emphasis. Without an A/B comparison with other speakers, we would probably not have considered this quality worthy of comment.

Although the R/4 has slightly lower sensitivity than many other speakers, it can deliver at least as much undistorted sound. This was made clear during our peak-power tests, in which the R/4 was able to handle more short-term power without distortion or damage (especially at low frequencies) than many speakers with higher measured sensitivity.

All in all, the Fried R/4 is a fine-sounding, attractive, and relatively compact speaker. Since all speakers sound different, the choice must be a personal one, but the R/4 is one that is worth hearing if you are considering a purchase in its price range.

Circle 141 on reader service card




"This model scans to find a weak signal and locks it in, thus insuring that even the meekest FM station will be heard."

Big bopper.



**Pretty
big bopper.**



JUST BECAUSE YOU'RE A LITTLE CRAMPED FOR SPACE DOESN'T MEAN YOU HAVE TO SCRIMP ON SOUND. INTRODUCING THE COMPACT PROPERFORMER SERIES FROM JBL. 2-PIECE SYSTEMS. AND 3-PIECE SYSTEMS LIKE THE PRO III PLUS. SAME TITANIUM TRANSDUCERS, SAME RICH BASS, SAME STUDIO MONITOR SOUND AS THE PROS. SAME WAY PEOPLE WHO MAKE MUSIC FOR A LIVING HAVE BEEN MAKING  IT, MIXING IT AND MASTERING IT SINCE DAY ONE.

H A HARMAN INTERNATIONAL COMPANY • 240 CROSSWAYS PARK WEST, WOODBURY, NEW YORK 11797 • 8500 BALBOA BOULEVARD, NORTHRIDGE, CA 91329

CIRCLE NO. 8 ON READER SERVICE CARD

TEST REPORTS



Sony D-303 Portable CD Player

by Ken C. Pohlmann, Hammer Laboratories

THE Sony D-303 is the first portable CD player to employ 1-bit digital-to-analog (D/A) conversion. Because 1-bit converters do a much greater proportion of their work in a purely digital fashion than do conventional multibit converters, they not only greatly minimize low-level nonlinearity but are also free of errors caused by miscalibration or by drift due to changes in temperature and humidity, a particular advantage in portable and car players. In addition, 1-bit converters are said to cost less and consume less power than multibit converters of comparable quality. In other words, the introduction of 1-bit D/A conversion to CD portables is a welcome development.

Like most Sony portables, the D-303 has a certain flair to its design. Its metal and plastic case is smoothly contoured, and the controls and display are well integrated into the package. The open button unlocks the top of the clamshell, enabling the disc to be placed directly on the spindle motor. When the lid is closed, the display verifies that a disc has been loaded and reads out the total number of tracks and total playing time. Loading a disc also turns the player on—it has no on/

off switch. If you leave a CD in the D-303 without putting it into play or pause mode (or after the disc has finished playing), it will turn itself off to conserve battery power. During playback, the display shows the current track number and elapsed time within that track; pressing the REMAIN/ENTER button switches the display to show the remaining time on the disc or in the current track.

Four large buttons serve as the main transport controls. The play/pause button starts playback and is also used to pause. When the player is in pause mode, the track/time display flashes and a beep is heard through the audio outputs. The forward and backward track-skip buttons move the pickup from one track to another when they're pressed once and engage fast audible search if held down. The stop button halts playback, and if no other buttons are then pressed, the unit turns itself off.

Supplementing the four main buttons are a number of smaller controls. The PLAY MODE button is used to select playback of a programmed sequence of as many as twenty-two tracks or to repeat playback of that sequence, the entire disc, a selected

segment of a disc, a single track, or a random selection of tracks (shuffle play). Pressing the INDEX button causes the track-skip buttons to step by index number rather than track number. The HOLD button disables all controls except the REMAIN/ENTER button—handy in situations where an accidental knock on a button might disrupt playback.

The RESUME function, which is turned on and off with a switch on the front of the player, enables you to resume playback at a certain disc location even after you've pressed stop. Once you open the lid, however, the location is lost. The bass-boost control has three settings: NORMAL, MID, and MAX. Mid and Max increase the output to the headphone jack, but to prevent overload the amount of boost is gradually reduced as the volume thumbwheel is turned up. Neither the bass boost nor the volume control affects the line-level output.

The display shows track number, index number (if any), remaining or elapsed time, and the status of repeat, shuffle play, and other functions. When the player is running on battery power, there's an indicator for battery strength, and the display flashes LO BATT when the battery is exhausted.

The headphone jack is located on the right side of the chassis, along with a four-pin jack for the remote control built into the cord of the supplied headphones. The remote control duplicates the volume, track-skip, manual-search, play/pause, stop, and hold controls. The left side of the chassis holds an optical digital output and a jack for an optional separate wired or wireless remote control.

On the back of the player are line-output jacks and a 9-volt DC power input. The D-303 can be powered from a variety of sources: two AA alkaline batteries, a rechargeable battery pack, house current through a voltage converter, or a car battery. It comes with a rechargeable battery and an AC adaptor. Playing time with fresh alkaline batteries is about 3½ hours. When charged for 2 hours, the rechargeable battery provides about 2½ hours of playback time; when charged for 30 minutes, it gives about 2 hours of playing time.

The D-303 comes with a plastic carrying case designed so that the principal controls can be reached by folding

CAN TUBES WARM UP CD SOUND?

How a very old technology can make a brand new compact disc player sound extraordinarily good



Our ultra-advanced new SD/A-490t includes two vacuum tubes whose classic design has remained unchanged for over 35 years.

We and many other critical listeners believe that this anachronistic addition to an already excellent CD player design significantly enhances its sound.

THE AMPLIFIER THAT DOESN'T AMPLIFY.

Between a CD player's D/A converter and external outputs is circuitry called a buffer amplifier which actually doesn't boost the signal strength at all. Instead, the buffer amp is a unity gain device which increases output current, and acts as a sort of electronic shock absorber, isolating the relatively fragile D/A chip set from the nasty outside world of demanding analog components.

TUBES VERSUS SOLID STATE.

More than 98% of all CD players use solid state devices for buffer amplifiers. A handful of hard-to-find, esoteric designs in the \$1200 to \$2500 range employ one or more tubes instead. As does our readily-available \$699 SD/A-490t.

In ultra-expensive preamplifiers and power amplifiers, tube sound is subjectively described as "mellower", "warmer", "more open and natural" or simply "less harsh than solid state". Objectively, it's safe to say that tubes: 1) Produce even-order distortion versus transistors' odd-order distortion, particularly 3rd harmonics which are especially unpleasant to the ear; 2) Act as a pure Class A device when used in a buffer stage (Class A output is considered the optimal amplifier configuration) 3) "Round off" the waveform when they clip, while over-driven solid state devices cut off sharply, causing audible distortion.

THE SD/A-490t'S OUTPUT SECTION.

Our new CD player uses two 6DJ8 dual triodes placed between the digital-to-analog converter and a motorized volume control. Operated at less than 30% of



*The Carver SD/A-490t. At \$699, its suggested retail is \$500 less than the nearest competitor with tube output.**

their maximum capacity, the tubes achieve a highly linear output voltage with very low static and transient distortion while providing very high dynamic headroom.

And because they're "loafing" at 1/3 their rated current capability, the SD/A-490t's tubes are designed to last the life of the CD player without replacement or need for adjustment.



AN ARRAY OF FEATURES AS RICH AS ITS SOUND.

We've designed the SD/A-490t to be both useful and easy-to-use. 21-key front panel or remote programming. Fixed and variable output. Programming grid display. Random "shuffle" play. Variable length fade. Automatic song selection to fit any length of tape. Even index programming for classical CD's.

Plus our proprietary Soft EQ circuitry which compensates for variables in spacial (L-R) information and midrange equalization found in many CD's mastered from analog tapes.

BRING YOUR TWO BEST CRITICS TO A CARVER DEALER.

It's tempting to further regale you with how well we think the SD/A-490t's tubes and Single Bit D/A circuitry improve the sound of a compact disc. But your own ears should be the final arbiter of quality. Bring them to a Carver dealer and compare tube output with solid state designs costing \$1000 or more. Suffice it to say that almost all critical listeners not only are able to hear a difference, but prefer the sound of the remarkably affordable SD/A-490t's dual triode transfer function.

THE SD/A-490t

- Dual 6DJ8 Vacuum Tube Output Stage
- Over-sized Disc Stabilizer Transport
- 24-Track Programming with Music Calendar Display and 21-key front panel and remote input
- Indexing
- Random Play
- Motorized Volume Control
- Time Edit/Fade Taping Feature with user-variable time parameters
- 2 to 10 Second Variable Length Fade
- Optical and Coaxial Digital Outputs
- Exclusive Carver Soft EQ

CARVER

CARVER CORP., LYNNWOOD, WA, U.S.A.
Call 1-800-443-CAVR for information and dealer listings.

*Source: 1990 Audio Magazine Annual Equipment Directory.

TEST REPORTS

back its top flap. Although the case is padded, it provides only moderate protection against physical shock. The player also comes with an audio adaptor cable with a stereo pin plug at one end and a pair of RCA phono plugs at the other.

The Sony D-303 measures 5 inches wide, 5 $\frac{1}{8}$ inches deep, and 1 $\frac{5}{16}$ inch high and weighs about 1 pound including its rechargeable battery. It is available in black or titanium finish. Price: \$330. Sony of America, Dept. SR, Sony Dr., Park Ridge, NJ 07656.

Lab Tests

Anyone who thinks portable CD players are clearly inferior to their home cousins hasn't measured one lately. As the D-303 demonstrates, portables have achieved very high per-

formance levels. The D-303's maximum frequency-response deviation was -0.32 dB at 20,000 Hz; de-emphasis error was -0.16 dB at 16,000 Hz. Channel separation measured 56.6 dB at 1,000 Hz and 54.8 dB at 20,000 Hz. Dynamic range was 88.1 dB, and the signal-to-noise ratio (S/N) was 98.1 dB. Total harmonic distortion plus noise (THD + N) measured 0.0054 percent at 0-dB (maximum) output, rising at lower levels to 0.032 percent at -20 dB and 0.33 percent at -40 dB.

As expected, the 1-bit D/A converters performed well in the low-level linearity test. Deviation was 0.0 dB at -70 dB, -0.1 dB at -80 dB, and -0.2 dB at -90 dB. Maximum inter-channel phase error was 0.2 degree at 12,000 Hz. Speed error was a com-

pletely negligible -0.0011 percent. Maximum output was 1.52 volts.

The player tracked through a 2,000-micrometer defect on the Pierre Verany #2 test disc. The pickup's slewing time was 5 seconds from Track 1 to Track 21 of the CBS CD-1 test disc. Cueing accuracy was excellent, but impact resistance was only fair.

Comments

Slipping the D-303 into its plastic pouch, I took the player for a brisk walk along the beach. Although portable CD players have come a long way in terms of shock resistance, they are still not ideal for situations in which they will be jostled about considerably. The D-303 seemed about average in this regard; you *can* take it for a brisk walk, but you might be better advised not to.

On the other hand, using battery power in more sedate circumstances, the D-303 did a fine job with its supplied headphones. Sound quality was quite good, and the bass-boost function helped to restore some missing low end. The boost was audibly effective only at the lowest settings of the volume control—below "3." The player's mechanical operation was very smooth, with fast cueing and track access. The clamshell cover on our test sample did not close tightly. This did not affect playback, but the cover moved disconcertingly whenever one of the cover-mounted buttons was pushed.

I appreciated the controls built into the headphone cord—a very convenient arrangement. It would be nice, perhaps as an option, to have an extender cord to expand the potential traveling range: Zooming back and forth along my desk in my swivel chair, I kept pulling the phones from my ears because the cord was too short.

There's no question that Sony has excelled in the art of designing and manufacturing portable CD players. After years of triumphs in the field, another one may seem anticlimactic. But the production of a modestly priced portable player with 1-bit D/A converters, a digital output, a very small enclosed battery pack, and reasonably long playing time is still no small feat, and Sony has again succeeded admirably.

Circle 142 on reader service card

FEATURES

- One-bit D/A conversion
- Track skip, manual search, index search
- Twenty-two-track programmed playback
- Repeat of entire disc, programmed track sequence, single track, or defined segment
- Random track playback (shuffle play)
- HOLD switch to defeat other controls
- Switchable bass boost
- RESUME function to start playback at same point after pause or stop
- Can be powered from AA batteries, rechargeable battery pack (supplied), car battery, or AC adaptor (supplied)
- Display of track and index numbers, elapsed or remaining time, and status of special functions
- Battery-level indicator
- Optical digital output jack
- Headphone jack with variable output
- Supplied headphones with remote control on cord; can use optional wired or wireless remote controls
- Carrying case

LABORATORY MEASUREMENTS

Maximum output level: 1.52 volts

Frequency response: $+0.0$, -0.32 dB from 20 to 20,000 Hz

De-emphasis error: -0.16 dB at 16,000 Hz

Channel separation: 56.6 dB at 100 and 1,000 Hz, 54.8 dB at 20,000 Hz

Dynamic range (A-weighted): 88.1 dB

Signal-to-noise ratio (A-weighted): 98.1 dB

Maximum interchannel phase shift: 0.2 degree at 12,000 Hz

Linearity error: 0.0 dB at -70 dB, -0.1 dB at -80 dB, -0.2 dB at -90 dB

Distortion (THD + N) at 1,000 Hz: 0.0054% at 0 dB, 0.032% at -20 dB, 0.33% at -40 dB

Defect tracking: tracked 2,000-micrometer errors on Pierre Verany #2 test disc

Slewing time: 5 seconds

Cueing accuracy: A

Impact resistance: top, C; sides, C



INTRODUCING A 100 WATT CD RECEIVER THAT RUNS ON BATTERIES.

Panasonic now brings you a car CD receiver so powerful, it'll pin you to the back of your seat. With a full 100 watts of total system power.

It's a top of the line CD receiver that's loaded with more than just power. The CQ-DP40 utilizes MASH*one-bit technology, so that low-level detail **MASH** multi-stage noise shaping comes through with real clarity.

Our TOC (table-of-contents) function tells you the total number of tracks and playing time at a touch. And instead of searching through each track to find the one you want, you can head straight for it with our 12-track Direct Access.

The tuner section includes the true convenience of Auto Store, which can find the six strongest stations in a given broadcast area and commit them to memory.

More musical options, such as a portable cassette player or a car CD changer, can easily be added by plugging them into the line level jack. While you still keep the rest of the unit's functions.

And with all the power this removable unit puts out, the Dual Preamp Out gives you the option of adding on even more — without cancelling out the unit's built-in power.

Cars with lots of power have always provided excitement out on the open road. We give you power that'll provide excitement even in bumper-to-bumper traffic. ■

Technics developed the MASH 1-bit DAC. NTT (LSI) Labs invented MASH technology. NTT has applied for trademark registration for MASH.



USA
OFFICIAL SPONSOR
1992 U.S. OLYMPIC TEAM
36 U.S.C. 380

Panasonic.
just slightly ahead of our time

CIRCLE NO. 15 ON READER SERVICE CARD

Presenting the Bose® 901 Classic System.



T H E • B O S E
901 Classic
SERIES VI DIRECT/REFLECTING® SPEAKER SYSTEM

The most highly acclaimed loudspeaker. Then and now.

Hi Fi/Stereo Review
MARCH 1968 - 60 CENTS

1968

"...I must say that I've never heard a speaker system in my own home which could surpass, or even equal, the Bose 901 for overall realism of sound."

—Julian Hirsch, Stereo Review 1968

At the Massachusetts Institute of Technology, an inquiring young assistant professor named Amar Bose began a research project in the mid-1950's. Twelve years later, he introduced the Bose® 901® Direct/Reflecting® speaker system, which soon began to win the highest acclaim ever accorded a loudspeaker.

Today, the 901 Series VI system continues to earn that acclaim. The result of a commitment to excellence spanning 25 years, this new 901 system incorporates hundreds of changes from the original. Bose engineers work continuously to develop and improve new audio technologies for this and other Bose products.

The new 901 Series VI Classic system is comprised of an unprecedented number of patented audio technologies, including Direct/Reflecting® system technology, Acoustic Matrix™ enclosure, Active Equalization, and eighteen full-range Helical Voice Coil Drivers.

And since the 901 Classic system has virtually unlimited power handling capabilities and a wide dynamic range, it releases the excitement and full impact of today's digital compact discs.

The New York Times

NEW YORK, SUNDAY, MARCH 25, 1990

1990

*"The Bose 901, fortified against the rigors of the digital age, still makes the listening room seem to expand."
"It is apparent from the first note why so many listeners are captivated by this speaker."*

—Hans Fantel, The New York Times 1990

How is the 901 system different?



During a live performance, most of the sound you hear is reflected off the walls, floor and ceiling before reaching your ears. Only a small amount of sound energy travels to you directly.



Conventional speakers send most of their sound directly into the room, like a flashlight beam, giving you full stereo only in a small area.



Bose Direct/Reflecting® speakers re-create a natural balance of direct and reflected sound, approaching the open spaciousness of a live performance, giving you full stereo anywhere you sit in the listening area.

Hearing is believing.

We invite you to compare the 901 loudspeaker with any other, regardless of size or price. For the name of your nearest Bose dealer, or for more information, call:

1-800-444-BOSE

(1-800-444-2673) Monday - Friday, 8:30 AM - 9 PM ET

BOSE®
Better sound through research.

TEST REPORTS



Acoustic Research M4 Speaker System

Julian Hirsch, Hirsch-Houck Laboratories

THE new Acoustic Research Holographic Imaging Series of loudspeakers was designed to create a more natural and believable sound stage, or stereo image, than conventional speakers do. To achieve this effect, all six models in the series have the driver that handles the musical midrange at the top of the cabinet, angled upward at about 30 degrees. The tweeter is just below that driver, offset a few inches to the outside, so that the tweeters are spaced slightly farther apart. According to AR, the upward-firing drivers provide improved hall-simulating midrange reverberation through ceiling reflections. The output from the

tweeters slightly favors the inward direction, toward the listening area, creating a clear center stage in the sound field.

Three speakers in the series are designed for installation on shelves or stands, and three are floor-standing models. The M4, the smallest of the floor-standing speakers, is a three-way system in a slim, compact cabinet that measures 7 $\frac{3}{4}$ inches wide, 10 $\frac{1}{8}$ inches deep, and 28 $\frac{1}{8}$ inches high. The cabinet leans slightly backward to tilt the tweeter radiation a few degrees, making the overall depth from top rear to bottom forward edge about 15 $\frac{1}{4}$ inches. Each speaker weighs about 23 pounds.

The upper half of the cabinet is a sealed acoustic-suspension enclosure for the 6-inch bass/midrange driver, whose carbon and mica-filled polypropylene cone has a 32-Hz free-air resonance. The driver's response is allowed to roll off naturally at low frequencies. At 3,600 Hz there is a crossover, with 12-dB-per-octave slopes, to the $\frac{3}{4}$ -inch soft-dome tweeter, whose voice coil is cooled by ferrofluid.

The lower half of the cabinet contains a separate sealed enclosure for the 6-inch low-bass woofer, which is mounted upside-down at the cabinet's bottom, with its basket and magnet external to the sealed cavity. This arrangement is claimed to provide more effective cooling of the voice coil when it's operating at high levels, since air can flow over the metallic parts of the driver. The sealed cavity, like the tweeter's enclosure, is filled with sound-absorbing material.

Although the woofer is the same size as the midrange driver, it has a relatively massive paper cone with a free-air resonance of 28 Hz, and a series inductor rolls off its output above 100 Hz. The output below 100 Hz emerges from two rectangular ports on the sides of the enclosure. The two cone drivers have different low-frequency resonance, or "Q," characteristics, as well as different resonant frequencies, so that their outputs combine to produce a strong, uniform response down to 50 Hz.

The manufacturer's specifications for the AR M4 include an anechoic frequency response on-axis of 50 to 20,000 Hz \pm 3 dB and a sensitivity of 88 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. The speaker is recommended for use with amplifiers designed to drive loads of 4 to 8 ohms and with power ratings of 20 to 150 watts.

The AR M4 is finished in charcoal-gray vinyl. It is sold only in pairs, shipped in a single box weighing 53 pounds. Price: \$600 a pair. Acoustic Research, Dept. SR, 330 Turnpike St., Canton, MA 02021.

Lab Tests

The averaged room response of the AR M4 speakers was among the flattest we have ever measured, \pm 1.5 dB from 200 to 20,000 Hz. We measured the responses of the two 6-inch drivers



If you don't want to enjoy



a movie in 70 mm,



you can go to church.



A ball game.



A jazz club.



A play.



A concert.



Or you can always go out.

A man's home has always been his castle. But with Yamaha's new 7-channel DSP-A1000 audio-video amplifier, it can be almost anything he wants.

What makes it all possible, is the combination of Dolby* Pro Logic and Yamaha's Digital Soundfield Processing.

We call it Dolby Pro Logic with Enhancements. The Dolby section delivers precisely the same effects and dialogue placement that could only be experienced in the finest movie theatres.

The Enhancement portion funnels all the Dolby Pro Logic information through Yamaha's exclusive

Digital Soundfield Processing circuitry.

The end result makes listening to music or a movie at home seem like you're actually somewhere else. Like a colossal 70 mm movie theatre. A huge stadium. An intimate jazz club. Or — you get the idea. All at the push of a button.

Stop by your Yamaha dealer today. And discover the only audio-video amplifier that can take you out just by turning it on.



YAMAHA®

TEST REPORTS

with close microphone spacing. The upper one (bass/midrange) had a well-damped resonance and a response variation of ± 1 dB from 65 to 400 Hz. Its output dropped at 12 dB per octave below 65 Hz. The lower driver (bass) had a higher-Q resonance, peaking at 70 Hz and falling off at 6 dB per octave at higher frequencies and 12 dB per octave below 70 Hz.

Combining the two responses modified the bass performance below 200 Hz, yielding an output variation of ± 2 dB from 200 to 58 Hz. Response was down 4.5 dB at 50 Hz. This bass-response curve spliced easily to the room response, creating a composite response of ± 3.5 dB from 50 to 20,000 Hz, essentially as rated.

Quasi-anechoic FFT frequency-response measurements yielded equally good figures, approximately ± 2.5 dB from about 500 to 24,000 Hz. The speaker's horizontal dispersion was excellent, although—as we expected from its asymmetrical tweeter placement—there were slight differences between the response curves at right and left 45-degree angles from the forward axis.

The group-delay variation was extremely low, less than 0.1 millisecond overall in the tweeter range, from 21,000 Hz to 5,000 Hz, and reached a maximum of only ± 0.2 millisecond from 5,000 to 180 Hz. The narrow cabinet apparently helped to keep diffraction effects to a minimum.

System impedance was considerably lower than suggested by a brochure describing the speaker series. It reached a minimum of 3.5 ohms at 20 and 200 Hz, with maxima of 8 ohms at 70 Hz and 8.5 ohms at 2,000 Hz. The phase angle of the impedance function did not exceed ± 30 degrees over the rated frequency range of the speaker, however, and it should not present a difficult load to any amplifier designed to operate into 4 ohms.

The sensitivity of the M4 was 89 dB SPL, slightly better than rated. Its distortion with a 3.2-volt drive level (corresponding to a 90-dB SPL in our sensitivity measurement) was less than 1 percent from 75 to 700 Hz, rising to 3.8 percent at 50 Hz and a maximum of 7 percent at 30 Hz.

The M4's woofers were able to handle 100-Hz pulse power inputs of 105 watts (into a 4.1-ohm impedance) before they emitted audible sounds of

distress. At 1,000 and 10,000 Hz, the amplifier clipped at about 1,200 watts before the speaker reached its limits.

Comments

The measured performance of the AR M4 met its ratings easily (within normal measurement tolerances). It is highly unlikely that a speaker with the characteristics of the M4 would sound anything less than good. In this case,

The Acoustic Research M4 speakers rarely appeared to be the source of the sound we heard, which had much of the depth, width, and height that we associate with a live performance.

the sound was sufficiently better than merely "good" to make us sit up and take notice.

The M4 produced perhaps the most natural music stage in our room that we have heard from any conventional or unaided speaker. We are *not* comparing it with some larger, and much more expensive, speakers that employ interaural crosstalk cancellation to enhance their spatial characteristics, or

with systems using electronic means of achieving "holographic" effects, which can be pleasing but are very different from the sound of the M4's.

Putting it as simply as possible, the M4 speakers rarely appeared to be the source of the sound we heard. The music came from that end of the room, with much of the depth, width, and height that we associate with a live performance, but never seemed to emerge from those small black boxes.

Although on rare occasions we have heard similar effects from other speakers, they were considerably more expensive than the M4 and required careful placement for best results. The AR M4 is surprisingly noncritical in respect to placement. The speakers' overall frequency balance was excellent, sounding consistent with their measured performance. The highs were crisp and the middle frequencies fully detailed, without any stridency or harshness. The bass was surprising in its solidity and ease, qualities that were unexpected from a speaker whose response drops rapidly below 50 Hz. It gave the impression of being much deeper than it actually was, yet with no artificial boom.

The AR M4 is one of the best values in today's speaker market. These days so many products seem to be equal to each other that it is refreshing to find one that is strikingly "more equal" than most of its competition.

Circle 143 on reader service card

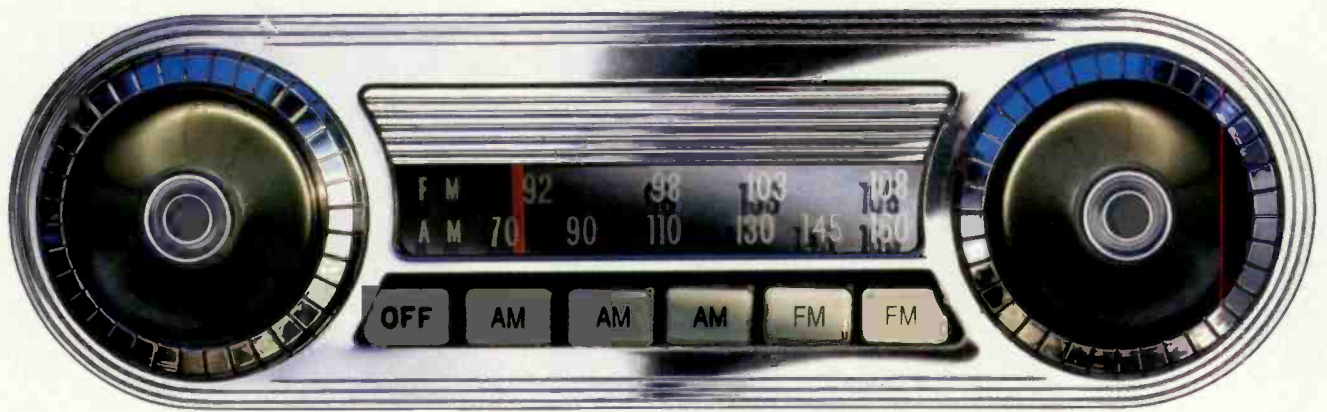


"So much for Harry insisting on always buying his stereo equipment from an authorized dealer. I don't see any authorized dealer here. Do you see any authorized dealer here?"



“So, Russ and I are bombing down the coast in Ozzie, the land shark, when he says, ‘Hey, check out my

new CD player.’ I look down and all I see is the radio. I’m like, ‘I don’t get it.’ That’s when he pulls out the remote.



So now I’m thinking, ‘Whoa, don’t tell me he’s got a TV in this starship, too.’ Turns out it’s the controller for the CD. He had hooked the whole thing up so the CD system worked right through a frequency on his regular FM radio, with a 6-disc CD changer tucked away in the trunk. Cool!”



Pioneer 6-Disc CD Changers can be added to any car or truck with an FM radio, or by installing a tuner/cassette/CD controller in the dash. And, the 6-disc CD magazine is compatible with the Pioneer 6-Disc CD Changer for home. To receive more information please call 1-800-421-1603.

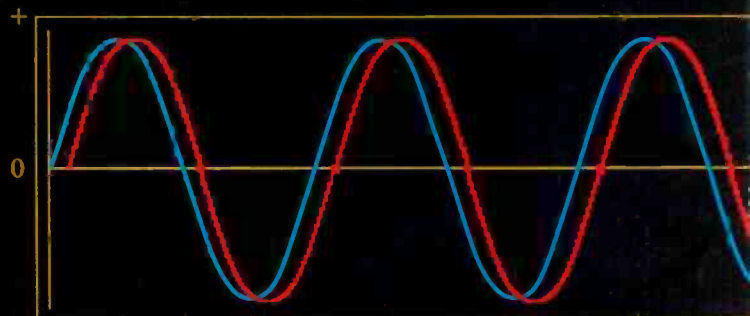
© 1991 Pioneer Electronics (USA) Inc., Long Beach, CA.

PIONEER
The Art of Entertainment

CIRCLE NO. 16 ON READER SERVICE CARD



Blue: Output of bit stream digital-to-analog audio waveform.
Red: Output of 16-bit digital-to-analog audio waveform.



The advantages of a technological breakthrough are usually obvious. But they bring with them attendant problems. Eliminating those is what leads to perfection.

Everyone knows "digital sound" is cleaner, crisper. But sound waves aren't digital at all. They're analog. So the digital signals must be converted back to analog signals before they're sent to the speakers. The degree of accuracy of this process determines how good the sound is, how real.

The two accuracy problems involve "reading" and "converting" the digital information on the CD.

The "reading" or "sampling" occurs at 44,100 times per second. A 4x's oversampling digital filter purifies the sound at 176,400 times per second. And our 8x's oversampling CD units, 352,800 times per second. By utilizing an 8x's oversampling digital filter, virtually all harshness and coloration of sound are eliminated.

Finally, Skip-Resistant, Bit-Streamed, Fiber Optics, Digital CD.



With a conventional 16-bit CD, the sampled information is converted to an analog signal in this 16-bit "chunk." Big chance for error. Because the order within this chunk may be almost random. Take the numbers 1, 5, and 9. Arrange them in one order and the number is 951. In another, 519. Big difference. And in a 16-bit binary environment it could be even worse. Because the least significant bit represents the number 1 and the most significant, 32,768. A gap far greater than that between the decimal numbers of 1 and 9.

So our digital-to-analog-converters, DAC's, don't convert the data in chunks. They do it one bit at a time. It's called "bit streaming." And it ensures that the analog waveform that is sent to the speakers is the ultimate in accuracy.

And because we're reaching for perfection, three more quick features. Our CD's are almost skip-proof. So don't worry about bumpy roads. And our

disc-to-disc access time is super fast. No more twenty seconds of silence. And our 6300 CD Changer unit employs a fiber optical cable to run through the car up to our head-unit. After all, once you've gone through this trouble to keep the sound clean and accurate, why mess it up with some static interference?

More importantly, our trunk-mount CD changers with our FMC 303 controller will plug into any existing in-dash FM radio. No more underdash cutting and splicing. Which means when you go to sell your car, just unplug the unit, and the car's audio system is still just like it came from the factory.

Last, but certainly not least, is DAT Digital Audio Tape units. We not only have them, we developed the first DAT player for the car. Our current model not only plays DAT's but also controls our CD changer. The ultimate in digital entertainment.

Clarion

FINDING



FAULT

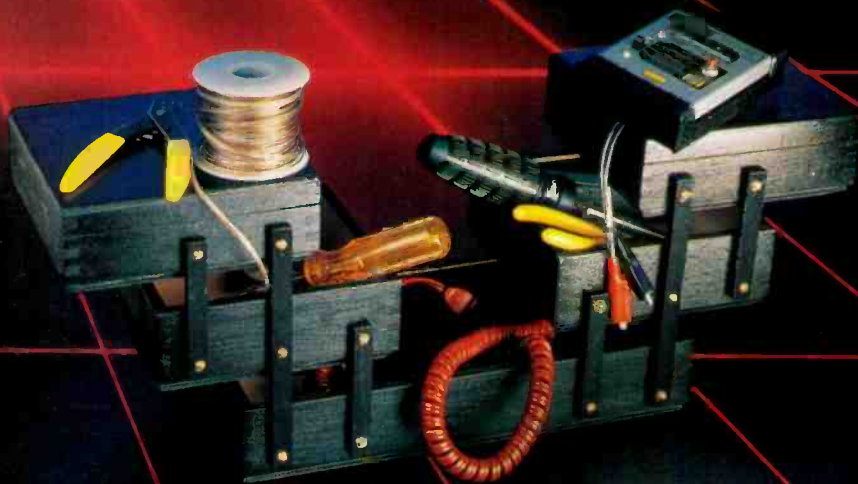
How to track
down problems
in your stereo
system

THE new amplifier seemed an incredible bargain considering the claims made by its manufacturer, so I gathered up the few pennies I had scraped together as an impecunious student and bought it. I soon learned that there really is no such thing as a free lunch: One evening my system suddenly made a noise like a dinosaur in distress and then quiet with a sigh. As I approached the amp to find out what had happened I detected a stench that only frying electrical things can make, and then I noticed some cheery flames licking out of the ventilation holes.

PHOTO: JOOK P. LEUNG

Luckily, few audio breakdowns are that dramatic. More often, you turn on your equipment and something has simply stopped functioning. Even more insidious is the gradual sort of problem that eventually becomes obvious without your quite realizing when it began. In either

by Ian G. Masters



case, the first reaction is usually to dig out the instruction manual and see if it has any help to offer. Most do include a section devoted to troubleshooting, and these can sometimes direct you to a solution, at least if the fault is confined to one component. Unfortunately, few such guides are very useful; often the hints are confined to things like, "No sound? Check that the unit is plugged in."

Anyway, many problems—and virtually all of the ones you can cure yourself—occur *between* the individual parts of the audio chain. Electronic components do fail now and then, to be sure, but that's relatively rare; cables and connectors are much more vulnerable components of a system, followed at some distance by anything that includes moving parts that can

possibility of hum entering the system, there must be a good connection between the braided shield and the outer cuff, or "skirt," of the RCA plug at each end, and both cuffs must make tight contact with the jacks they are connected to. The lower the signal level being carried by the cables, the greater the effect of hum if it is picked up. Leads from turntables—especially when a moving-coil cartridge is used—are particularly susceptible.

These days, very few of us wire our own interconnects, and the factory-assembled ones rarely have problems unless they have been used in applications where they have had to flex a great deal, so cable-related hum difficulties are almost always related to the connection between plug and jack. The cause might be something as sim-

that they are unpredictable. That's one reason turntable manufacturers always provide a separate ground lead, but connecting it is often unnecessary—and sometimes makes hum worse than it would otherwise be. And not only are ground loops unpredictable, they can sometimes occur in places that have nothing to do with the components that are causing them: It is not uncommon to have a ground loop develop just by connecting a new component to a system, without even turning it on!

In principle, the way to avoid ground loops is to make sure your system is connected to true ground only at one end, usually at the power amplifier. If you can duplicate the audio chain by cascading the power cords of the components in the same

ELECTRONIC COMPONENTS DO FAIL NOW CABLES AND CONNECTORS ARE

become misaligned or befouled. Such matters may be discussed in the manual of one component or another, but most manuals cover only what can happen *within* the piece of gear they came with; for interconnection problems, you're on your own.

Humming Along

When something does go amiss, the first task is to determine the nature of the problem. Basically, this boils down to one of two things: extraneous sounds or no sound at all. In the first category are hum, radio-frequency interference (RFI), and various crackles and forms of distortion that can creep into a signal when you're not looking.

Hum is probably the most common problem you will encounter, and it is a tough one to correct because it has many possible causes. If, for example, hum simply appears all of a sudden, chances are it has been caused by a cable coming loose. The standard audio cable consists of a "hot" central lead and a braided outer portion that acts both to shield the signal lead from stray electromagnetic signals and to connect the chassis of one component to that of the next. To minimize the

ple as oxide buildup on the contacts, which is more or less inevitable over time if the metal used is aluminum; the cure is often simply to undo and redo the connection a few times. If the cuff has just become loose, crimping it slightly with a pair of pliers will usually restore good contact; better still, replace the cable—wire is pretty cheap compared with the rest of a system.

Hum may also be a result of placing a signal lead too close to an AC power cord. Distance is the remedy in such cases, and crossing leads at right angles will minimize hum pickup as well.

A particularly knotty hum problem is one caused by a "ground loop." Theoretically, the chassis of all the components in a system are at ground potential, but in reality that is rarely the case. Slight differences usually exist, which means that small voltages can develop in the ground wires that connect one chassis to another, and these can be picked up by the signal leads as hum. The hum may be worse if two or more components are independently connected to "house ground," but this might also be okay—the big problem with ground loops is

order as the signal leads (turntable to preamp, preamp to amplifier, for instance), so much the better, but if this is impossible, and an intermediate component has a three-prong power plug, you may have to insert a three-to-two "cheater" plug that breaks the ground connection.

In extreme cases, the two shields of the stereo signal leads can result in a ground loop, and to eliminate it one of the connections must be broken. This will involve a bit of cable surgery: Strip the plastic sleeve off one lead only and carefully cut the metal foil or braid at one end all the way around to break the contact (the braid must remain attached at the other end to continue to provide shielding). You may have to do this at several points in the system, particularly if the problem is caused by a component that is connected at several spots, such as a tape deck.

Ground loops are not easy to identify. If the hum suddenly appeared when you altered the wiring of the system or added new equipment, or if you find it very hard to locate the problem and it yields to none of the other remedies, it may be a ground

loop. If so, be prepared to spend a lot of time experimenting to get rid of it.

It is also possible for hum to be caused by the internal failure of a component. If you suspect this, isolating the component by disconnecting it from the system entirely and listening to it through headphones should provide an answer. Faults of this sort are very rare, but they do occur; professional service is the only remedy.

RFI and Other Noises

In addition to the 60-Hz line frequency that shows up as hum, we are surrounded by other strong electromagnetic fields that can affect our stereo systems, such as radio-frequency interference. Radio signals usually just pass us by unless we take some care to provide a tuned circuit that will

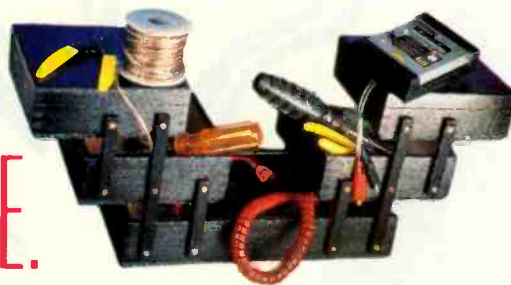
FM or TV reception. You can easily check this: If the problem stops when you turn off the player's power, that's it. Placing the two components as far apart as possible may clear things up; if not, you will probably have to switch off the CD player when you want to listen to FM, but that's not much of a hardship, as few of us want to listen to both simultaneously.

Other extraneous noises tend to be specific to particular components. Crackling noises that occur when level controls or switches are operated can usually be fixed with a shot of contact cleaner; if not, a trip to a service center is probably necessary. Fuzzy sound from a turntable may be caused by contacts that have been befouled, or it might simply mean there's a dustball on your stylus. If cleaning the stylus

in the source component itself, in the input circuitry it is connected to, or in the cables between the source and the preamp. If the problem is in both channels, it probably has nothing to do with the interconnection, but simply substituting new cables will clear up any questions on that score. Having eliminated that possibility, plugging the component into a different input (one that you know works) should identify the faulty area as the input circuitry if the unit now plays or the component itself if there is still silence. If the source has a headphone output, monitoring through it should also indicate whether the problem is at that end.

A similar process can be used to narrow the possibilities if the gremlin turns out to be in the preamplifier, power amplifier, or speakers. If the

AND THEN, BUT MUCH MORE VULNERABLE.



pick them up: a radio. But sometimes an accidental combination of cable lengths and connections can create just such a detector inadvertently, and the radio-frequency signals are converted to something we can hear. These may be strong enough to drive a speaker directly, even when the system is turned off, but it's more usual for such unwanted material to enter the system through low-level circuits and be amplified subsequently.

In some cases, RFI may be picked up by the speaker leads (which can make dandy antennas), carried to the amplifier's chassis, and then picked up by a low-level input. Usually moving your equipment, even slightly, or changing the position and length of cables—especially speaker wires—is enough to solve the problem. Line filters to remove signals that may be conducted along the AC power cables offer another solution. In extreme cases, such as persistent interference from communications equipment (CB or ham radios, for instance), an approach to the originator may be necessary, or even a report to the FCC.

Depending on your equipment, RFI from a CD player might disrupt your

doesn't fix the problem, it may be time to replace it or to upgrade the whole cartridge. Increased noise or reduced treble response in a tape deck often means that head cleaning and demagnetization are overdue. In extreme cases, the heads may have become misaligned, and that will require professional attention. If tapes made on another machine sound particularly bad (especially in mono), that may be what's wrong.

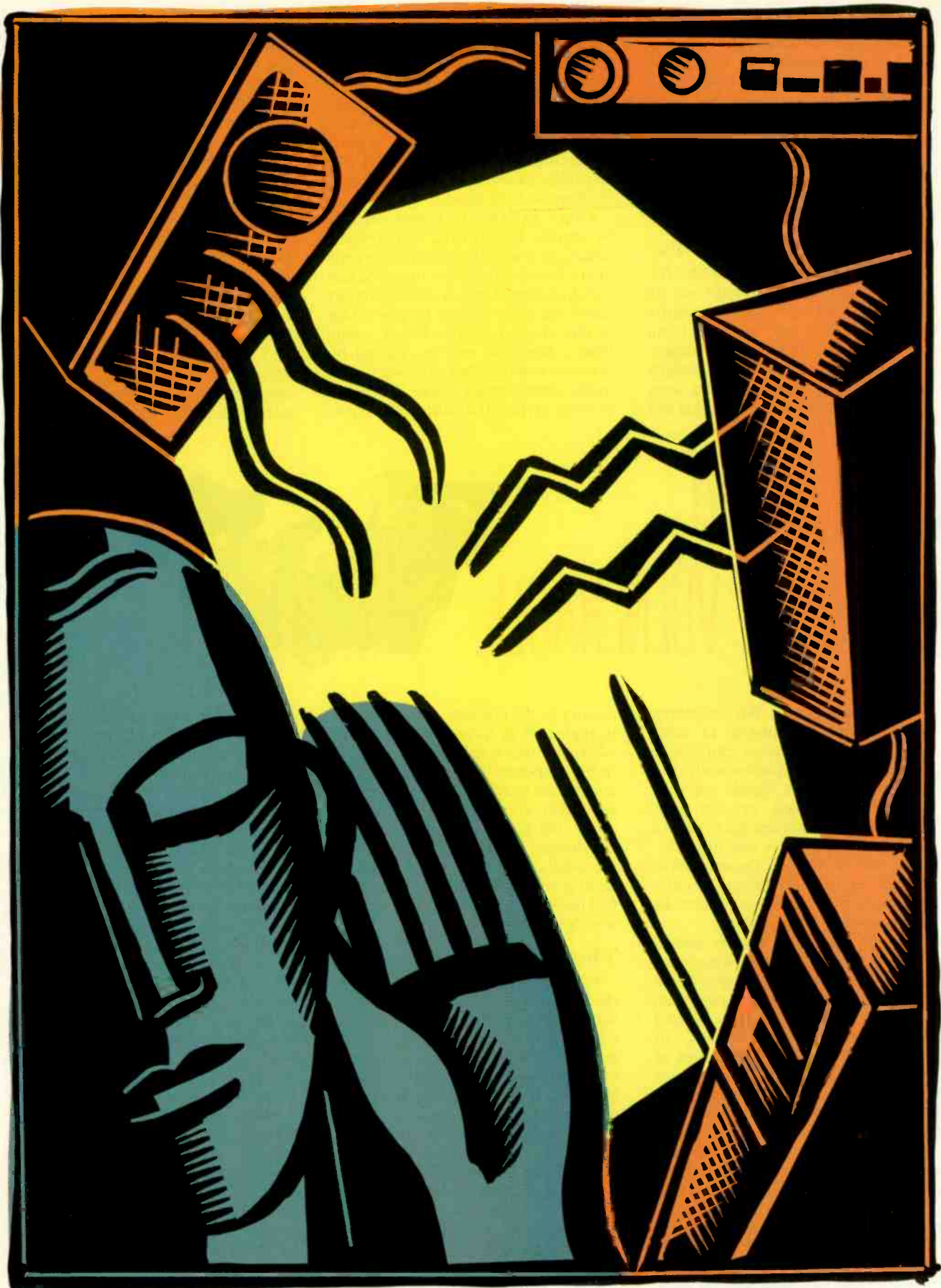
The Sound of Silence

While unwanted sounds may bedevil your system on occasion, their sources are usually fairly obvious. But when all or part of the system quits entirely, it often takes some real detective work to discover where the difficulty lies. It doesn't take all that much to interrupt an audio signal, and most problems are easily fixed, but simply locating the fault can sometimes take a considerable amount of effort. A process of elimination will help, however.

If the problem affects all sources, for instance, it is almost certainly in the preamplifier stage or beyond. On the other hand, if only one source is affected, then the disruption is either

silence affects both channels, for instance, it probably has nothing to do with the speakers (assuming, of course, all switches are in the appropriate positions). If only one channel has the problem, swap the leads between speakers at the speaker end; if the same speaker exhibits the fault, that's where the problem lies, but if the problem is now on the other side, it's earlier in the chain. Doing the same sort of swap at the amplifier end will identify whether the wiring is at fault. If not, it must be in the central electronics. In a system built around a receiver, with tuner, preamp, and power amp gathered into one box, there's not much further you can go; with separates, continuing the elimination process should finally identify which component is at fault.

Audio equipment is very reliable for the most part, so chances are that any problems you uncover will be ones of wiring rather than spontaneous combustion. But if a component really has an internal fault, the troubleshooting process will at least indicate which piece of equipment you need to have repaired, so you won't have to drag everything to the shop at once. □



THE AMP/SPEAKER

BY E. BRAD MEYER

INTERFACE

ARE YOUR LOUDSPEAKERS TURNING YOUR AMPLIFIER INTO A TONE CONTROL?

If you've been reading STEREO REVIEW for a while, you've probably read comments by Julian Hirsch and others to the effect that well-designed modern amplifiers normally sound pretty much the same. (You may even have seen "Do All Amplifiers Sound the Same?" in our January 1987 issue, which reported on controlled listening comparisons that found no statistically significant differences in the sound of five quite different amplifiers.) Although there are some provisos associated with this claim—that the amplifiers have adequately low noise and distortion, that they not be driven beyond their power limits into overload, that they have flat (or simply identical) frequency response into the loudspeakers they are driving—these don't seem like very difficult restrictions. And for the most part, they probably aren't. But E. Brad Meyer has discovered that there can be situations in which the last condition is violated, creating audible differences between amplifiers that one would ordinarily expect to sound the same. He has detailed his discovery in the form of a dialogue between audiophiles. —Ed.

ILLUSTRATION BY ANTHONY RUSSO



SOMETIMES you can hear differences between power amplifiers, even in a carefully controlled test.

Why did you say that? And what exactly did you say?

I said, sometimes you can tell the difference between two power amplifiers by the sound, even in a controlled test. And I said it because there's been an argument going on for a long time about whether you can hear the difference, and I've just conducted a test that proves you can. But remember, I said "sometimes." That's important.

But why only sometimes? If amplifiers didn't sound different, everyone would just buy the cheapest one. Some amplifiers cost thousands of dollars, and people buy them. There must be a reason.

I'll talk about the reasons for buying an expensive amplifier later. First of all, people don't just buy the cheapest amplifier because some amps are more powerful than others, and power costs money. One of the premises of the controlled test is that neither amplifier is being driven into serious distortion. If you're comparing a \$6,000 high-

power amplifier with a cheap receiver, you can just turn both of them up until the receiver distorts, and the difference will be obvious. The longstanding argument is about whether you can hear any difference between well-designed amplifiers operating within their power limits.

Well, I still don't see what's so hard about that. Last month I was over at the house of a friend who had taken home two amps for a weekend so he could decide which to buy. The salesman predicted that one of them would sound more musical, and he was right. We listened to first one and then the other for a whole evening, and it was no contest.

I can't say for sure what you did or didn't hear, but for a lot of reasons that wasn't a controlled test. The first problem is that the salesman told you what you should be hearing. Second, you probably didn't make sure that the two amps were playing at exactly the same level. And third, you had to take at least a couple of minutes to change from one amp to the other, during which time your auditory memory would have faded.

Hold on. Are you saying that one amp sounded better in the same way to both of us just because the salesman told my friend it would? I didn't even talk to the salesman, and I heard the same things my friend did.

Yes, people can and do hear things just because they expect to. And you didn't have to talk to the salesman yourself for your friend to communicate those expectations to you. You probably don't even remember how it happened, and your friend probably didn't mean to do it, but it can happen anyway.

I still don't see how I could be hearing something just because of something the salesman told my friend. What was that about the levels? We

listened at about the same volume the whole time.

If you compare two components at slightly different levels, the louder will tend to sound better, and if the difference in level is small it will masquerade as something else—greater transparency, more detail, more depth in the stereo image, or whatever. The effect is even stronger if you use a switch box to compare the two components quickly.

I still don't understand why all that trouble and extra equipment are necessary.

The methods I'm talking about were arrived at by audiophiles and audio engineers who heard differences between all kinds of equipment, just as

you do. They set out to identify the causes of the differences between electronic components, and they built switch boxes to make the job easier. Then they discovered that differences in overall level could always be heard unless the two components were within about 0.1 dB of each other.

They found that the ear is sensitive to level differences even if they occur over only part of the spectrum—an octave or two, perhaps. In other words, if the two devices had different frequency responses, they would sound provably different. As with differences in overall level, small variations in frequency response typically would sound like differences in detail or presence or warmth, or something like that.

So they tried using equalizers to eliminate the often tiny response differences, to enable them to concentrate on properties like overall musicality, the amount of depth in the stereo image, and so on. That's when the trouble really started.

What trouble? What happened?

When they finished equalizing the two components to within 0.1 dB of each other, not just in the midrange but all across the spectrum, they stopped being able to identify the components in their blind tests. And to this day no one has been able to do it, except under special conditions.

What do you mean by "special conditions?" What about differences in things like distortion and noise?

The audibility of noise and distortion depends on what you're listening to. With most music you can't hear ordinary harmonic distortion unless it's well over 1 percent. The ear is more sensitive to distortion with a pure tone, a single-frequency sine wave, but most people don't listen to those very much. The same is true of noise, only the most sensitive test condition for noise is no signal at all: You can hear hiss or hum most easily if there's no music playing to cover it up or distract you. The other exception is that with some music played on some loudspeakers you can hear differences in polarity (absolute phase)—that is, whether the speaker diaphragms move toward or away from you when a positive-going signal is applied.

But what about all the writers in audiophile magazines who go on for pages characterizing the sounds of preamps and power amps? Surely some people must hear better than others. Maybe the ones with the golden ears haven't been tested.

Most of the subjectivist audio writ-

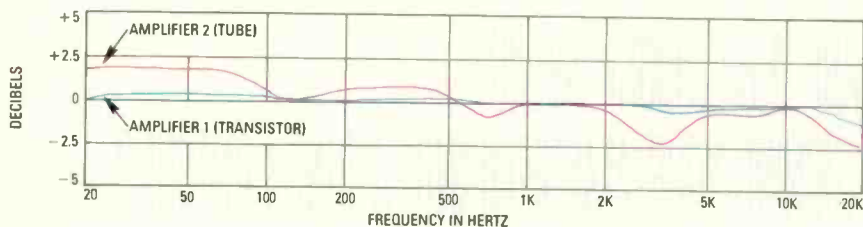


Figure 1. Frequency-response plots of a typical solid-state power amplifier and a tube amplifier driving the midrange and tweeter sections of Speaker A. The difference between them was audible with both pink noise and music.

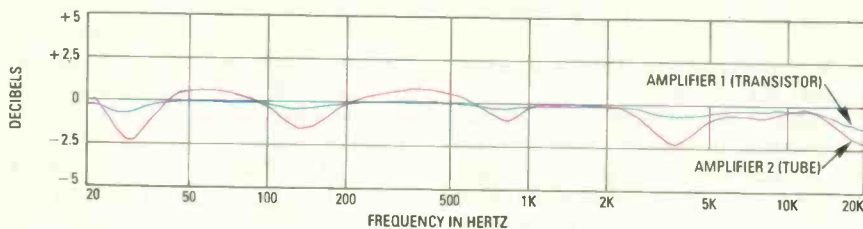


Figure 2. Frequency responses of the same amplifiers driving the entire Speaker A system, including the woofer. The upper-midrange difference was audible with pink noise, but the more similar overall balance failed to reveal the difference with music.

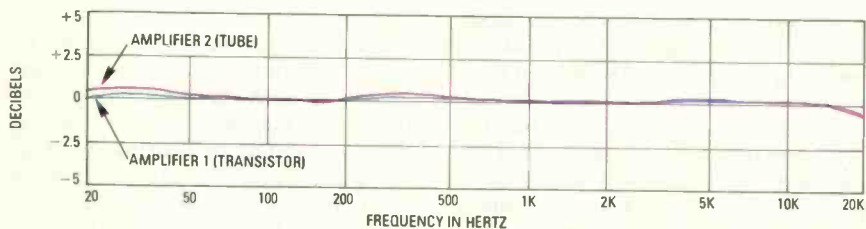


Figure 3. Responses of the same two amplifiers into Speaker B, a three-way system presenting a less difficult load than Speaker A. The slight measured difference in the midrange was barely audible with pink noise and not audible at all with music.

THE LISTENING TESTS

A proper double-blind test requires proper equipment and much care in setting it up. Levels were matched using a 1,000-Hz test tone. Polarity and levels were controlled with a custom-built line-level module from DB Systems of Jaffrey Center, New Hampshire. Its response is within ± 0.05 dB from 5 to 80,000 Hz, and its maximum distortion is less than 0.0003 percent. The module has itself proved to be inaudible in double-blind tests. The comparator, made by the ABX Company of Troy, Michigan, switches the amplifiers' inputs and outputs simultaneously.

Each trial represents many comparisons between A, B, and X or between X for the current trial and X for the next higher or lower trial. In the pink-noise tests a rapid switching sequence worked best, but with music, which is constantly changing, many strategies were used, including rapid switching during sustained notes, listening to entire passages on A or B and then to the same passages on X, and switching between similar phrases in popular music. Occasional periods of silence, including breaks for food or coffee, were helpful in maintaining concentration and aural acuity.

At first glance, the graphs in Figures 1 and 2 may appear too similar to account for the results of the music tests, which show a very strong probability of audible differences when the speakers were biamplified and none when they weren't. Closer examination of Figure 1 shows an upward tilt below 500 Hz that gave the tube amplifier a warmer overall tonal balance despite the rolloff below 100 Hz in the loudspeaker's crossover.

The much smaller differences on my own speaker system, plotted in Figure

Setup	Signal Source	Correct Choices	Confidence Level
1	pink noise	25 of 25 (100%)	99.999 + %
1	Bach: <i>St. John Passion</i>	13 of 15 (87%)	99.6%
1	Cowboy Junkies	13 of 15 (87%)	99.6%
1	combined music trials	26 of 30 (87%)	99.98%
2	pink noise	15 of 15 (100%)	99.9%
2	Bach: <i>St. John Passion</i>	9 of 15 (60%)	70%
2	Cowboy Junkies	13 of 30 (43%)	18%
2	combined music trials	21 of 45 (47%)	34%
3	pink noise	12 of 15 (80%)	98.2%

Setups 1, 2, and 3 correspond to Figures 1, 2, and 3. The confidence level expresses the probability that the correct identifications of the two amplifiers in the ABX trials could not be ascribed to chance alone. A confidence level above 95% is considered statistically significant.

3, were still faintly audible with pink noise: By concentrating on an apparent difference in the vocal range, corresponding to the 0.25-dB rise between 300 and 500 Hz, I got a score of twelve out of fifteen choices correct, representing a confidence level (probability that the results could not be ascribed to chance alone) of 98.2 percent. With music, however, I could not hear any difference.

Because of the relatively small number of trials in these tests, the results should be taken primarily as an indication of where to look and how to proceed with more thorough tests in the future. But for the biamplified configuration, the results have very high confidence levels, and the measurements, together with the results of previous work (especially that of Floyd Toole and others on the

audibility of resonances), fully support the conclusion that with these speakers, with these amplifiers, the difference was audible.

Some audiophiles maintain that the rapid switching and accompanying tension of double-blind testing is somehow unfair, or at least unlike their usual listening conditions and states of mind. Give us time, they say, and let us relax, and we can identify not just amplifiers, but speaker cables, interconnects, or cryogenically treated CD's. Such claims are, at any rate, impossible to disprove.

Double-blind testing is frustrating. Even after our scores showed we were just guessing, we still heard what we expected to hear. Was this merely convincing illusion? I think so, and I prefer to spend my money on things I know I can hear.

ers publicly refuse to participate in double-blind tests, even if some of them have taken them in private. And of those who do take such tests and write about them, most deny that the negative results prove anything. They give a lot of reasons, and the argument has been going back and forth for years. It's often called "The Great Debate."

I'm not saying I agree with you, but if what you say is true, why did you claim that differences between power amps were audible?

Because I found a pair of amplifiers

that, with a certain loudspeaker system, provably sound different. One of the amplifiers is a solid-state unit from a company that makes low- to medium-priced equipment, and the other is a vacuum-tube model from a well-known high-end manufacturer. The first lists for less than \$900, and the second is priced at more than three times as much. The loudspeaker is a large, expensive multidriver system that presents a complicated load to the amplifiers.

Look at Figure 1 and you'll see

what I mean. The frequency-response curve labeled Amplifier 1 is for the medium-priced solid-state amp; Amplifier 2 is the expensive tube amp.

Wait a minute. The expensive amp's frequency response isn't flat, and not just by a fraction of a decibel, either. It varies by almost 3 dB. Is something the matter with it? Are you sure it was working right? What's going on here?

I wondered the same thing myself, but I tried two different examples of the same model and they behaved almost identically. You never see

graphs like this in equipment reviews because no one tests amplifiers with speakers attached; they use a simple load resistor instead.

But this speaker system's impedance varies widely with frequency. In the parts of the spectrum where the impedance dips, the speaker draws more current from the amplifiers, so their output voltage tends to fall. In general, transistor amplifiers have lower internal resistance (higher damping factor) than many tube designs, so their response doesn't change as much when they're presented with a load like this one.

You mentioned some kind of scientific test. What did you do?

We used a double-blind comparator—a switch box with three positions, A, B, and X. A and B are the two amplifiers, and X is one of the two, but the box decides which, and it doesn't tell you until after you've made your guess.

But you have a 50 percent chance of guessing right even if you can't hear any difference.

That's right. So you do a number of trials, and if you're correct all, or almost all, of the time, you probably are hearing a difference. I did two sets of trials, one with a steady signal called pink noise that makes it easy to hear response differences and another with music. With the pink noise I got fifteen out of fifteen choices correct in about 5 minutes; with music, I got thirteen out of fifteen correct in about 20 minutes. The audiophile at whose house we did the tests got ten out of ten choices correct with pink noise and thirteen out of fifteen in his own independent music test. All these results satisfy what is loosely called the 95-percent criterion, meaning that we could expect to score that well by guesswork alone fewer than one time in twenty. In fact, the "confidence level" is almost 100 percent for the pink-noise trials and 99.9 percent for the music trials.

Now I'm really puzzled. It looks like we should buy the transistor amplifier because its response is flatter. But the subjectivist writers don't agree with that.

Well, the situation is more complicated than it looks. Remember, the graphs show the amplifiers' electrical outputs, not the sound in the room. From where we sat, the tube amplifier sounded better with these speakers. The slight rise below 500 Hz added a warmth that was pleasing with most recordings we tried, and the dip between 3,000 and 4,000 Hz softened a

slight upper-midrange hardness and made vocals more natural sounding and easier to listen to.

But can't you accomplish the same thing with an inexpensive equalizer and save yourself a lot of money?

Practically speaking, no. I've tried to duplicate curves like this one with equalizers, and although it's possible if you have the right equipment, it takes a long time and many tiny adjustments. You can't do it accurately without expensive measuring equipment to check your work. You might come up with something that sounded as good or better by trial and error, but it would still take a lot of work and almost certainly would not be exactly the same.

It looks as though the amplifier has errors that happen to compensate for the speaker's errors. Wouldn't it be simpler if the amplifier had flat response and the speaker were designed to sound best with the ideal amplifier?

In a perfect world, yes. In the real world, people buy speakers like these for their other fine qualities and then buy the amplifier that sounds best with them. It's even possible that these speakers were designed using an amplifier like our tube model, which is why the combination sounds good.

How strongly you feel about this depends on your philosophy of equipment design. If you buy this tube amp with these speakers, then for your money you get a slightly mellower and very musical sound, a beautifully massive physical package, a slightly higher electrical bill, a slightly lower heating bill, and the pride of owning a hand-assembled piece of American craftsmanship. That combination holds a lot of appeal for some people.

There's another complication I haven't mentioned. In the comparison where the differences were obvious with both pink noise and music, the system was bi-amplified: The amplifiers we tested were driving the system from the lower midrange up, while a separate amplifier drove the woofers. With the same amps driving the entire system, the response difference decreased, as you can see in Figure 2. Under those conditions we could hear which amp was which with pink noise, but we failed to identify them using music.

What about your own system? What kind of amplifier do you use when you have to put your money where your mouth is?

I'm currently using a large solid-state amplifier. But when I compare the same two amplifiers on my speak-

ers, both of them sound fine. My speakers don't present as difficult a load, so the two amps actually sound more alike on them, as you would expect from looking at Figure 3. The speaker systems used for some previous controlled amplifier tests were electrically more like mine, which may be one reason the results were mostly negative. And in many cases, both the amplifiers compared were more like Amplifier 1 than like Amplifier 2, and, as we've seen, Amplifier 1 maintains almost perfectly flat frequency response even into the more difficult loudspeaker load.

The reason we succeeded in our tests wasn't because we hear better than other people; we don't. If we had just listened, instead of doing double-blind tests and making measurements of the amplifiers with the speakers attached, we would have said that the bi-amplified system was the most revealing of the differences in power amps, and my speakers the least revealing. But the controlled tests and measurements show that we heard differences on the bi-amplified system because the speaker actually produced them.

What you seem to be saying is that the amplifier and speaker form a system and that to talk about the sound of an amplifier without reference to a specific speaker is meaningless.

I couldn't have said it better myself.

Then what does this say about other combinations of amplifiers and speakers? You got very different results for your three systems.

Most speakers are probably more like the one that produced the curves in Figure 3, but we need more tests like these to answer that question. What we've found so far suggests (1) that most good solid-state amplifiers probably sound identical, or at least very much alike, within their power limits; (2) that tube amplifiers (and solid-state amps designed deliberately to behave like tube amps) will tend to behave differently with different speakers; and (3) that speakers with strongly varying impedance curves tend to make the two types of amplifiers sound different. □

E. Brad Meyer works as an audio consultant, recording engineer, and producer for Point One Audio, Inc., of Lincoln, Massachusetts, and is president of the Boston Audio Society. He wishes to thank Audio Vision of New England, in Arlington, Massachusetts, for the generous loan of equipment and especially audiophile Jean-Marc Matteini, for both his gracious hospitality and his intellectual courage.

NOT ALL GREAT SPEAKERS ARE GREAT BIG SPEAKERS.



HOW TO FILL SMALL SPACES WITH BIG SOUND.

No, we're not saying that the sonic performance of the amazing new *Infinesimal Micro™* speaker system from Infinity is just like the sound that comes from the masterpiece of loudspeaker design—the world famous, critically acclaimed \$60,000 Infinity IRS V.

But why compromise?

Even if your passion for music isn't matched by your available space, Infinity is

still within reach. The new *Infinesimal Micro* three-piece satellite/subwoofer system was specifically designed to fit where larger and more costly speakers just won't.

Use the *Infinesimal Micro* as the heart of your sound system; as the perfect choice for video speakers, or as part of a surround sound home theater.

With the *Infinesimal Micro*, you get great big sound. In a *Micro* size. All the depth,

presence and clarity that Infinity is legendary for, without compromise.

The new *Infinesimal Micro* three-piece system. Affordable proof that not all great speakers have to be great big speakers.



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

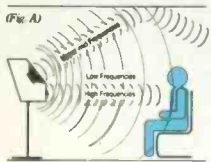
AR ANNOUNCES A STARTLING NEW DIMENSION IN STEREO LISTENING. HOLOGRAPHIC IMAGING.™

It's astonishing. You're used to speakers blanketing a room with ambience. Or limiting imaging to a narrow sweet spot.

Holographic Imaging unites imaging and ambience to recreate music in its proper position. The music is projected into the room. The effect is electrifying. Three dimensional.

THINK OF IT AS A SONIC HOLOGRAM.

And you're right in the middle of it. Imaging is far more focused than conventional speakers, so not only can you pinpoint instruments with striking accuracy, but experience their size, weight and texture as well. We've combined that improved definition with more spacious, natural ambience that envelops you in what we call the Spatial Soundstage™ (Fig. A)

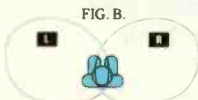


The technology responsible for Holographic Imaging could only have come from the people who invented acoustic suspension.

ASTOUNDING SOUND BECAUSE WE BROKE THE VERY RULES WE MADE.

For instance, the first four in the H/I Series have the woofer on top, angled precisely. This minimizes unwanted crossover components and diffraction effects, leaving nothing between you and the music.

The offset dome tweeter adds strong, precise imaging over a broader area than merely the traditional sweet spot. (Fig. B)



In the two largest H/I Series, we put the midrange on the top on an angle. Then we mounted the woofers into an acoustic suspension cabinet that fires into a filtered

chamber. The result...Filtered Suspension...tight bass response combined with dynamic, efficient performance. (Fig. C)

The narrow speaker encasement (Minimal Baffle Design) reduces reflected information and gives you an enormous sound from a surprisingly small amount of space.

SOUND DESIGN DICTATED COSMETIC DESIGN.

The design philosophy here is "form follows function." As such, every physical characteristic is born from specific physics and psych-acoustic principles. The result is a seamless blend of engineering innovation and visual art.

From bookshelf to tower, each sleek, uncompromising model projects precise stereo performance. Other finish options are available on the largest model.

See and hear these new speakers only at selected AR dealers. They are offering an extraordinary demonstration featuring Nova artists such as Brandon Fields and Jude Swift on a special CD which you're free to keep afterward.

The other thing free is information. So if you have questions about the H/I Series or Holographic Imaging call 1-800-969-AR4U.



FIG. C.



WE CAN BREAK THE RULES BECAUSE WE MADE THE RULES.

© 1991, AR, Holographic Imaging, Spatial Soundstage and H/I Series are registered trademarks of Acoustic Research.



REMOTE



CONTROL

REMOTE controls fulfill a common fantasy—being able to make things do your will without effort. With barely more than a thought, just the touch of a finger, you can control objects across the room. Nowadays we take these magic wands for granted, but it took four decades before they became ubiquitous.

People sat very close to the tiny screens of early television sets. The controls were usually within arm's length. But as screens got larger and viewers moved back, the demand for remote control grew. Some manufacturers offered simple wired affairs, but they appealed to few viewers.

During the 1950's two different types of wireless TV remote controls evolved. Companies such as General Electric used low-frequency radio waves (below the AM broadcast band). Zenith controlled its sets ultrasonically with remotes that emitted loud clicking sounds. Both systems suffered significant shortcomings: The radio remotes were frequently fooled by electrical interference, such as that

BY RICH WARREN

By the mid-1980's most audio/video gear offered remotes. You needed an extra table next to your armchair for all of them. Even the most dexterous couch potato could not juggle a drink, a sandwich, and all the remotes necessary to watch a videotape with surround sound.

The challenge was to design a single remote control that could command multiple components from various manufacturers. Since every household had different equipment, the remote would have to work with unknown combinations of components.

THE LATEST TWIST IN REMOTE CONTROLS IS PROGRAMMABILITY.

Should buttons on the remote be dedicated to each type of component, or should each button serve multiple functions depending on the component being controlled? The former approach resulted in sixty-button remotes, while the latter confused users about which button to push for the desired function. Yamaha combines the two approaches in its MRX 70 remote, using both dedicated keys and multiple-function keys for a whopping 110 keys in all.

Two main types of multiple-component remote controls have emerged: *learning* remotes and *universal* remotes (though the term "universal" is often applied to learning remotes as well). Learning remotes, as the name implies, learn commands from the individual remote controls that came with your components. If the original remote for a component is missing or dead, then the learning remote is useless, since it has nothing to learn the code from. Universal remotes, on the other hand, come preprogrammed with operating codes for hundreds (or even thousands) of components stored on a ROM chip. Simply tap in the code for the component you wish to operate on the universal remote's numbered keypad, and it will then command that piece of equipment. If no code exists in the remote's memory for a particular piece of gear, you're stuck in the wrong universe. Most universal remotes lack the ability to learn additional codes.

Teaching a learning remote requires some patience and coordination. A full education takes more than an hour. First you press a combination of buttons on the remote to place it in the learning mode. You place the learning remote "eye to eye" with the remote control you wish it to emulate. Press the desired key (such as play) on the learning remote and the corresponding key on the teaching remote. You may then need to press the same key again on the learning remote, plus another one to save the command code in nonvolatile memory. (The process

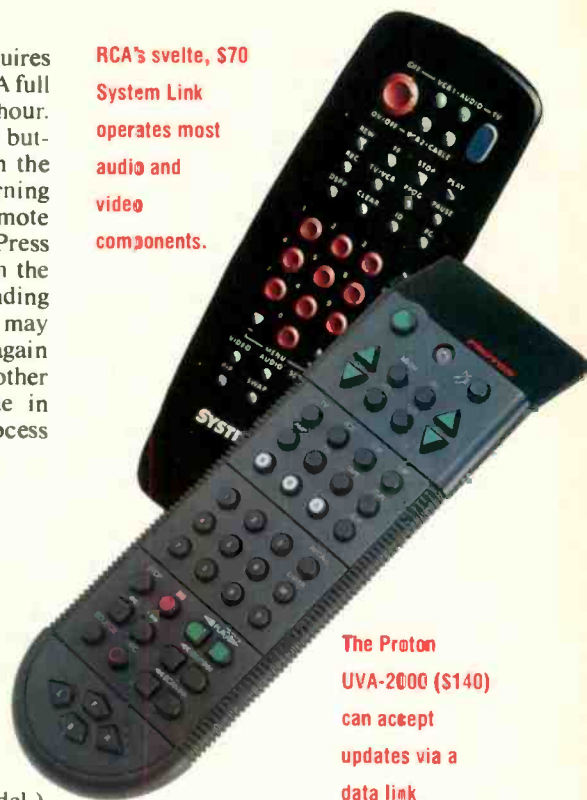
varies slightly from model to model.) You must get the distance and angle between the two remotes just right. Usually a green LED lights if you're successful, and a red LED lights if the learning remote needs a remedial lesson. To earn a graduate degree, repeat the process for every command you want the learning remote to memorize.

A universal remote comes with a master code book listing selection codes for all preprogrammed components. Simply punch in the two- or three-digit codes for the components you own. If you can't find a code for a particular component, you can sequentially step through all of the codes to see if one of them works. Sometimes different brands use the same codes, such as when one company manufactures for another. Then it becomes a matter of figuring out which of the universal remote's multifunction keys control which functions.

The latest twist in both learning and universal remotes is programmability. You tap a series of commands into the remote's memory, then assign them to a single key. Pressing that key then initiates a chain of commands, such as turning on the receiver and switching it to CD, turning on the CD player and directing it to play, and turning on the cassette deck and directing it to record. One keystroke thus replaces six.

The most versatile remotes bristle with the most

RCA's svelte, \$70 System Link operates most audio and video components.



The Proton UVA-200G (\$140) can accept updates via a data link to a PC.

UNIVERSAL REMOTES

Like conventional, dedicated units, universal remotes have all their control codes preprogrammed—but lots more of them for many different brands and models.

Harman/Kardon's MasterWorks (\$119) is exceptionally comprehensive.



buttons. Operating a handheld device with as many keys as a personal computer intimidates even the fleet-fingered, so start by deciding how many components you want to control with a single remote. The simplest multiple-component remotes control three components; the most complex command three times that many.

If you just want to control the receiver, CD player, and cassette deck in your audio system, or the TV, VCR, and cable box (or satellite receiver) in your video system, choose a simple remote. If you've integrated your audio and video systems, or have an elaborate surround-sound installation, then you'll need the General Schwarzkopf of remotes. You might want to choose a unit that will control a growing system. If you select an intimidating remote control, however, you may never use it at all. Consider how many functions you really need to have at your fingertips. How often do you adjust the brightness on your

TV, for instance, or switch the tape/source monitor on your cassette deck?

Zenith offers a thirty-six-key, bare-bones universal remote, the \$30 Personal Control Center, that controls only a TV, a VCR, and a cable box. You can select from the small universe of equipment whose codes are preprogrammed by setting DIP (dual in-line pin) switches rather than tapping in a code on its keyboard.

Memorex, one of the first companies in the universal-remote business, provides the next steps up with the AV4 (\$50) and the AV8 (\$90). As their model numbers denote, the AV4 controls four components, and the AV8 controls eight. The AV8 can be upgraded to control the newest models at Memorex service centers. Memorex's \$120 CP8 Turbo learning remote also incorporates a timer, enabling you to program it to turn on any component at a preset time.

Onkyo had one of the first of the "super" learning remotes with its

original Unifier. The current version, the \$100 RC-AV20M, has just over fifty buttons, logically grouped by the categories of components they control.

RCA now makes the attractive, ergonomically designed remote control that it originally supplied with its premium TV sets available as a universal remote. The forty-two buttons of the \$70 System Link RCU 100 have different shapes, sizes, and colors. You can guess the functions at a glance, and they're easy to remember.

MasterWorks, a \$119 universal remote from Harman Kardon, controls virtually any audio/video component in an easy-to-understand fashion. It offers the possibility of updating its memory at home by incorporating a serial computer port. You can load additional codes supplied on a floppy disk from the manufacturer using a home computer.

"The Remote" from Proton (UVA-2000, \$140) is so universal it would probably work aboard the Starship Enterprise. It controls not only A/V equipment but also infrared-controlled home-security and automation systems. The sixty-one-page code book supplied by Proton lists even obscure brands, and if that's not enough, there's a toll-free telephone number for updates and further information. Like the MasterWorks, the UVA-2000 can download new codes from a computer.

The Proton remote shares the peak of programmability with the Technics SH-R500 learning remote (\$130). A microprocessor enables the SH-R500 to memorize a string of commands, so that touching a single button triggers a series of actions. To reduce confusion, there's a liquid-crystal display (LCD) indicating the type of component for which the SH-R500 is set. The display also aids in setup and programming.

JVC takes the LCD concept a step further in its \$250 RM-S1 learning remote. Half of its face is a touch-sensitive LCD screen with a grid etched on it; labels for the available commands appear in each square of the grid. The labels change for each component selected, so there's no confusion about exactly which command you're selecting. This would be a desirable feature for all universal and learning remotes.

Many manufacturers include a universal or learning remote when you buy one of their premium components. Becoming comfortable with using one of these remotes is somewhat like learning to type. Once you master the keyboard, you'll wonder how you ever fumbled around the slow way. □

MULTIROOM INFRARED LINKS

Almost all of today's remote controls are based on infrared transmission, which is great except that it won't work around corners or through walls—a problem solved by repeater systems.



Video Link's Phantom Link receiver (\$70) picks up infrared signals and retransmits them by radio to an emitter (\$60) near the equipment.

The Terk Leapfrog system sends control signals through your home's AC wiring.



ON THE CUTTING EDGE

As music spreads to every room in the home through whole-house audio systems, remote control follows. Various manufacturers, including Luxman, B&O, Revox, and Denon, sell remote room sensors. Custom-installation companies such as Sonance offer remote sensor/relay units that work with most remote controls and components. These remote sensors must be hard-wired into the home. The sensors convert the infrared signals into electrical signals that travel through wires to the room holding the equipment to be controlled, where the electrical signals are converted back into infrared pulses and transmitted to the equipment.

Makers of satellite receivers realized that people might be watching a TV set in a different room of the house from the one where the receiver is located. Most offer dedicated remotes that transmit UHF radio waves rather than infrared. These remotes control only the satellite receiver, however.



The HTS MasterMind (\$199) is a learning remote that radios commands to an infrared emitter near the equipment.

Breaking from the crowd, the satellite-receiver company HTS combined UHF transmission with a learning remote in its \$199 MasterMind, which has a range of about 200 feet. The MasterMind can learn the functions of four other remotes. Bose includes a sophisticated radio remote with its Lifestyle Music System, but it operates only specific Bose components.

Bang & Olufsen's complex infrared remote controls stymie most learning and universal remotes. B&O was the first company to make its components interactive, so that, for instance, pressing tape play on the remote also turned on the receiver and switched it to tape mode. Now B&O has taken remote control a step further with interactive remotes. The world's most expensive remote control, the \$1,000 Beolink 7000, displays information that it receives back from the components. The buttonless brushed-metal and glass control panel responds to the lightest touch. Touch the metal case and the glass top of the unit pivots toward you for easier viewing.

The future remote control will need no touch at all. Panasonic already markets a VCR in Japan that responds to voice commands. Other companies are also working on this technology, and voice remotes are expected to arrive here next year. That conjures up unnerving thoughts of having to talk to your possessions. Just saying the word "on" could have mind-boggling consequences.



Bose uses a dedicated radio-frequency remote for its Lifestyle Music System. Bang & Olufsen's amazing \$1,000 Beolink 7000 interactive remote operates B&O components and displays status information sent back from them.

DIGITAL



Sony's new top DAT deck, the \$1,800 DTC-87ES, has four heads, enabling off-the-tape monitoring during recording.



RECORDING

COMES HOME

SHOULD I replace my old cassette deck, or should I get one of those DAT machines I've been hearing about?" Knowing of my thirty-year love affair with tape in its various formats, that's a question friends often put to me. And having been able to work with and test a number of digital audio tape decks in the last few years, it's a question that I can answer—for myself, at least—with confidence.

To many people, however, DAT is still the new kid on the block, a somewhat unknown quantity. Since many good cassette decks cost less than half as much as today's DAT decks, can the advantages of digital audio tape be worth it?

In brief, DAT combines the sonic quality of the compact disc with the ease of use of a cassette recorder. The same digital techniques and standards—indeed, many of the very same circuit chips—used for CD players are used for DAT machines. In terms of sound quality, then, CD's and DAT's are not merely similar: They are identical.

Naturally, if you don't care for CD sound, DAT is not for you. Moreover, if you use your cassette deck for nothing but playing back prerecorded tapes, DAT has little to offer. Purely for listening purposes, regular cassettes are—and for the foreseeable future will continue to be—both cheaper and more plentiful than prerecorded DAT's.

If you're interested in *recording*, however—whether live music or top-quality prerecorded sources—DAT is the door to open. If you've felt that the cassette copies you've made,

An inside look at DAT

by Craig Stark

while fine for the car, just don't do your CD's justice, rest assured that DAT copies will.

We'll see a little later why analog cassettes can't match the potential of CD's and other demanding sound sources. DAT, however, gives you instant access to a world of recording capabilities that only a few years ago was restricted to professionals. Indeed, the fact that DAT copies can *perfectly* replicate digital sources is what kept DAT decks from our shores for several years (see "Copy Protection" on this page).

The Task at Hand

Physically, what we call "sound" is simply a rapid series of variations in barometric pressure. It may take days for the low-pressure front in the weather forecast to move from California to the East Coast, but the variations we hear in music occur at a rate between 20 and 20,000 times per second and over a range of sound-pressure levels of approximately 100 dB. A fully satisfactory recording system must store (and recover) these variations faithfully while adding no audible contributions of its own.

An analog system attempts to track each pressure variation continuously, just as it occurs: electrically, as a continuously varying voltage or current; physically, as a series of squiggles in the sides of a record groove; or magnetically, as variations in the field strength produced by billions of magnetic particles on a tape.

A digital system makes no attempt to follow an infinite number of variations through an infinite number of moments. Instead, it *samples* the analog signal from a microphone or other source at defined, discrete intervals. The graceful curvature of a sine wave gets chopped up at a rate of 44,100 slices per second for a CD or 48,000 per second for a DAT, and the instantaneous amplitude of each time slice is rounded off to one of the 65,536 (2^{16}) numbers that can be expressed in 16 binary digits (or bits). What is stored on the disc or tape is just an enormously long series of these 16-bit numbers, which are the quantized sample values. Although it might seem as though a lot of information were being lost in this process, the stored data can, in fact, be reassembled into an *exact* replica of the original signal, plus a small amount of noise and distortion—less noise and distortion than one would normally get in even a very high-quality analog recording.

But one of the biggest hurdles to


digital recording is the very wide bandwidth of the signal that emerges from this process of sampling and quantization. Whereas an analog cassette deck records signals up to 15,000 or 20,000 Hz, a DAT machine must handle digital signal frequencies of more than 1.5 megahertz (MHz). To achieve such performance, the system's developers turned to video technology. Indeed, the very first home digital recording systems were boxes that converted analog audio signals into digital data streams formatted as video signals for recording on a separate portable or tabletop VCR.

DAT integrates all this equipment into a single compact component. A

DAT transport closely resembles the miniature VCR mechanisms used in camcorders, with tiny heads mounted on a small, rapidly spinning drum. The tape is wrapped partway around the drum and pulled slowly by as the heads whip across its surface, laying down narrow, diagonal stripes of digitally encoded sound.

In terms of meeting the conditions for a fully satisfactory recording system, analog cassette decks face two outstanding problems: restricted dynamic range (especially at the high frequencies) and mechanical instability (wow-and-flutter). Typically, the A-weighted signal-to-noise ratios of analog decks measure in the high 70's

Copy Protection



WHEREAS every analog copying process—such as cassette dubbing—inevitably degrades signal quality to at least a slight degree, digital copying does not. This is one reason audiophiles have been so eager for a digital recording system they could use at home. But the idea of something like DAT for consumers (as opposed to professionals) has been anathema to many people in the music industry, which has been at best ambivalent about home recording of any kind, even though cassettes now account for most sales of recorded music. For them, DAT is a chilling prospect. They are haunted by the nightmare of bit-for-bit clones of their digital master tapes, transferred to DAT by way of CD and from there to a never-ending stream of perfect copies passed from friend to friend without a cent more coming back to the people who made the master tape and distributed the CD's derived from it for sale.

To assuage such fears, the first consumer DAT decks were built so that they could not make direct digital copies of any commercially recorded material. The music industry still worried, however, because there was nothing to prevent this situation from changing overnight if that were to suit the hardware manufacturers. But when DAT was finally officially launched in the United States last year, the decks incorporated a new, more sophisticated copy-protection scheme called the Serial Copy Management System, or SCMS.

Unlike earlier consumer DAT decks, SCMS-equipped models will make direct

digital copies of commercial digital recordings, but with some restrictions. Assuming your CD player has digital outputs (as most now do) that you

can feed into your DAT deck's digital inputs, SCMS lets you make, one at a time, as many digital copies of a copyrighted CD as you wish. What SCMS will not allow you to do, however, is to make digital copies of digital copies—that is, "serial" or second-generation copies. If you send a DAT copy of a CD to your son in college, he can't copy it digitally for all of his friends.

SCMS operates simply by setting a flag (turning on a digital bit) in the subcode section of the tape copy. Since no musical information is stored in the subcode section, such flagging cannot in any way affect the sound quality of the music. But it can (and does) prevent any DAT deck from making any further digital copies of that tape. (An exception is made for material fed into a DAT recorder from an SCMS-aware "digital" microphone equipped with its own analog-to-digital converter. From such live material serial copies can be generated, enabling musicians to make any number of digital dubs of their own performances.)

When you use a DAT deck to record from an analog source (an LP, a cassette, or a normal microphone), the copy you make is flagged in such a way as to make it subsequently look like a copyrighted commercial CD or DAT release. As a result, SCMS lets you digitally copy this copy on a DAT deck for one more generation.



The KLIPSCH kg³, Nothing Else This Small Can Move You So Much

As you audition the new KLIPSCH kg³, expect to be moved by the lifelike presence and breathtaking dynamics of your favorite music. These are the sonic pleasures that only a horn loaded speaker system can provide.

Note that the kg³ gives you this big sound from a very compact design. With a cabinet less than two cubic feet in size, it is the smallest (and most affordable) true horn loaded system ever created by KLIPSCH.

The carefully flared tweeter horn delivers a sound stage that's so smooth and natural you feel as if you can touch it. The compression driver mated to this horn is ferrofluid cooled to effortlessly handle the rigorous dynamics of the most demanding musical passages.

The bass authority and extension of the kg³ defies your notions about smaller speaker systems. By combining an 8" woofer with a 10" sub-bass radiator, the kg³ can easily deliver clean, solid response down to a room trembling 36 Hz.

And the elegantly-styled cabinet is hand finished in your choice of *genuine wood veneers* to make this system as beautiful as the music it reproduces.

Hear the new kg³ for yourself. And expect to be moved. Demonstrations are going on now at your nearest KLIPSCH dealer. Look in the Yellow Pages. Or call toll free 1-800-395-4676.



klipsch

A LEGEND IN SOUND™

P.O. BOX 688 • HOPE, ARKANSAS USA 71801

CIRCLE NO. 10 ON READER SERVICE CARD

(in decibels) with Dolby C noise reduction. This is a far cry from the 90-dB or greater signal-to-noise ratios afforded by DAT recorders *without* any noise reduction. And the highest permissible distortion of the analog signal for this test, 3 percent total harmonic distortion plus noise (THD + N), is three orders of magnitude greater than that produced by a DAT deck at maximum recording level.

Even these comparisons barely begin to tell the story, however. The frequency-response curves we make of high-quality analog cassette decks show that they can maintain flat response out to 20,000 Hz at a -20-dB recording level. What they do not show, however, is that 15 to 20 dB of treble boost in the record circuitry is being used to achieve that flat frequency response.

Most music, most of the time, does not contain large amounts of high-frequency energy, so the tape can tolerate treble boost without overload. But sometimes the music does have high-level high frequencies. And the curves we make at a 0-dB level show that with high-level high frequencies the response of an analog deck falls drastically—typically by 20 dB or more at 15,000 Hz with chrome and ferric formulations and by 5 dB with metal tape. Plainly, the tape is being driven beyond its capacity into saturation.

DAT, in contrast, requires no recording equalization to achieve flat response at high frequencies, and frequency response is the same at *all* permissible recording levels.

Goodbye to Flutter

When you make a careful comparison between a CD and an analog cassette dub of it, you can almost always hear *some* differences in the high frequencies. Even when there is little measurable or audible loss in the high-frequency amplitude response of the copy, there is often a change in the *character* of the sound. There may be an “edginess” or “grittiness” or “graininess” that isn’t there in the CD. Or the width (or depth) of the apparent sound stage may perceptibly narrow (or flatten) when you switch from source to tape. Or again, whereas there may be an almost palpable sense of spaciousness or “air” surrounding the soloist in the original, in the copy the soloist’s apparent location itself may expand or become blurred and diffuse, filling the “air” that should surround rather than be part of him.

Although these effects can have

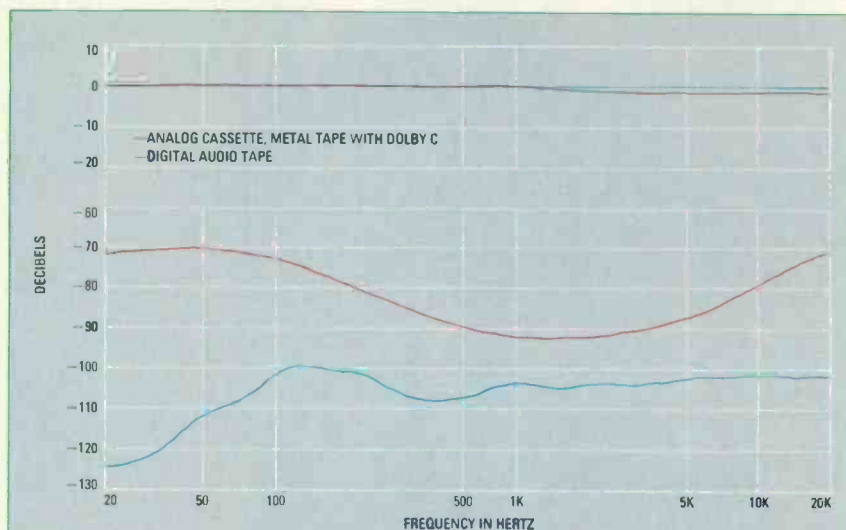


Figure 1. The dynamic range of a medium is the difference between the largest signal it can store without gross distortion and the noise level (including distortion) it generates at each frequency within the desired spectrum. Using Dolby C and metal tape, the best of today’s cassette decks can record a nearly constant input from 20 to 20,000 Hz at an IEC 0-dB level. The cassette’s tape-noise spectrum is shown in the upper of the two bottom traces. Digital audio tape also has flat frequency response at maximum output, but its noise spectrum (bottom curve) lies considerably lower, giving it a wider dynamic range.

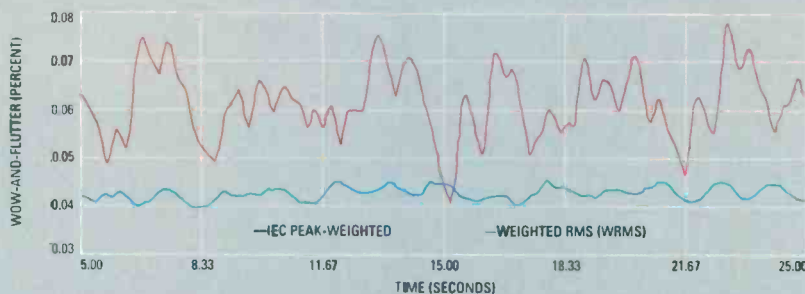


Figure 2. Although an analog cassette deck’s wow-and-flutter is usually reported as a single percentage, the deviations in tape speed vary from moment to moment. The two traces above show the actual variations in the recorded frequency of a constant 3,150-Hz tone over a period of 20 seconds. The more rigorous IEC peak-weighted flutter reading is shown in the upper trace. The lower, weighted-rms (wrms) trace smooths out the actual variations considerably, giving a better-looking number. Unfortunately, the ear is not so easily fooled.

more than one cause, in my experience the chief culprit is tape flutter. Ideally, the tape should flow across a cassette deck’s playback head as smoothly as Fred Astaire flowed across a stage. In practice, a deck’s drive mechanism inevitably introduces both periodic and aperiodic variations in the instantaneous speed of the tape. Capstans and pinch-rollers are never perfectly round, nor do motors provide absolutely unvarying torque. Layer-to-layer adhesion of the tape on the supply-side hub and imperfections in the cassette’s own rotation

system introduce short-term variations in holdback tension (drag). Dual-capstan drives ameliorate these problems, but they do not cure them. And the cassette’s pressure pad, while it helps to cover a multitude of sins, can cause problems of its own.

When we measure the flutter of an analog cassette deck, we monitor the playback of a fixed tone (conventionally, 3,150 Hz) and report the amount of frequency instability caused by the transport’s speed fluctuations, weighted to reflect the ear’s sensitivity to short-term pitch variations (as de-

Introducing Ensemble II.

"My newest design provides better performance, better clarity and more powerful deep bass than *any* competing speaker system costing up to *twice* as much. We guarantee it."

Henry Kloss

Three years ago, we at Cambridge SoundWorks changed the audio world when we introduced Ensemble® by Henry Kloss. Designed to compete with expensive, high-performance speaker systems, Ensemble offered no-compromise performance...in a revolutionary dual-subwoofer/satellite speaker package that could virtually disappear in one's living room. We then sold this revolutionary system in a revolutionary way: factory-direct to the public. By eliminating costly middlemen, we were able to price Ensemble at a fraction of the \$1,000 price tag it would have carried in stores.

**Price breakthrough...
only \$399!**

We're now pleased to announce Ensemble II, a single-subwoofer version of the best-selling Ensemble system. Ensemble II sounds virtually identical to Ensemble (with its dual subwoofers placed next to each other). In fact, the satellites in Ensemble II are the same as we use in the original Ensemble. But the big news is Ensemble II's price: only \$399. Ensemble II features quality components and cabinet construction normally found only in very expensive speakers. And sonically it outperforms systems selling for well over \$750 a pair. But it's priced in the same range with miniature bookshelf speakers.

**The subwoofer is
the solution.**

Your ears can't tell what direction bass notes are coming from. So Ensemble II uses a subwoofer with two long-throw woofers to reproduce deep bass, and two mini "satellite" speakers for the mid-high frequencies.

Audio Hall of Fame member Henry Kloss created the dominant speakers of the '50s (AR), '60s (KLH) and '70s (Advent). Now he's created a new kind of audio company for the '90s...Cambridge SoundWorks.



**For factory-direct savings
call 1-800-AKA-HIFI.***

Our helpful, knowledgeable audio experts are on call from 8AM till midnight (eastern time). Call to place an order – or to request our color catalog – 24 hours a day, 365 days a year. You'll find out why *Stereo Review* said "it's hard to imagine going wrong with Ensemble."

**CAMBRIDGE
SOUNDWORKS**

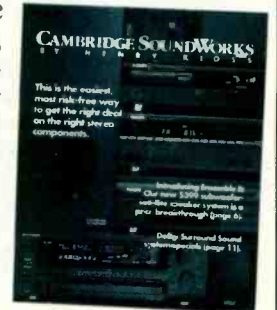
154 California St., Suite 102JUN, Newton, MA 02158

* 1-800-AKA-HIFI (800-252-4434) Fax: 617-332-9229

Canada: 1-800-525-4434 Switchboard: 617-332-5936

FREE Catalog

Our new catalog has specials on systems and components from Philips, Denon, and Cambridge SoundWorks, including complete Dolby Surround Sound systems – as low as \$999 – that we think are the best values in the country.



The subwoofer can be placed just about anywhere in a room. It can go behind a chair, in back of drapes...or be used as a plant stand. The subwoofer uses a dual-chamber design. The first chamber consists of two long-throw 6.5" woofers, sealed in a true acoustic suspension cavity. These woofers project the bass notes into a second cavity, which acts as an acoustic filter. This design is far more accurate than a conventional ported woofer.

The satellites.

The satellites in the Ensemble II system are identical to those in the original Ensemble system† (which *Audio* magazine said "may be the best value in the world"). Unlike our competition, an Ensemble satellite is a true two-way system, using high-grade components normally found in more expensive systems. With Ensemble II's dual-chamber subwoofer, they create spectacular sound.

**Conquer the fear of
spending too little.**

Don't be fooled by Ensemble II's price. Since we sell factory-direct to you, your money goes into making better speakers, not into paying for layers of distribution. Ensemble II is an all-out performance speaker that's equal to or surpasses competing systems selling for hundreds more. We guarantee it – or your money back.

© 1991 Cambridge SoundWorks, Inc. We ship worldwide, including APO & FPO.
† Except for connecting terminals. AR & Advent are trademarks of Jensen Laboratories.

Digital Compact Cassette

PHILIPS, the inventor of the compact cassette and the compact disc, recently announced the development of what may prove to be a major competitor to DAT: the Digital Compact Cassette, or DCC, a stationary-head digital tape format designed both to replace the analog cassette and to provide consumers with a smooth transition into digital tape recording. Philips expects that DCC decks and tape will be introduced next year. Because DCC's and the machines that use them are simpler mechanically than DAT cassettes and decks, the prices of DCC equipment and recordings are projected to be relatively low—eventually as low as or lower than those for CD's and CD players. But don't get the wrong idea—DCC is a very sophisticated technology.

A DCC looks very much like an analog cassette, except that the spindle holes and tape are concealed by a protective shutter. Once a DCC is safely inside a recorder, the shutter



slides to one side to expose the spindle holes and the tape. The tape itself is the same width as analog cassette tape, and it uses a chromium-dioxide formulation similar to that used for videocassette tapes. Tape speed is the same as for analog cassettes. Because of the compatibility of the cassette shells and the use of dual analog/digital heads, a DCC deck will play both DCC's and analog cassettes. That means you can continue to enjoy your analog cassette collection even as you begin collecting digital tapes.

The secret behind the DCC's simplicity of operation is a greatly reduced digital data rate. Specifically, the audio data flow from a DCC is 384

kilobits per second, about one-fourth that of a compact disc or DAT cassette. Yet thanks to data compression, DCC is said to provide audio performance equivalent to that of CD or DAT. Both CD's and DAT's store data in a linear fashion with sequences of 16-bit numbers. Whether all the data are always needed is not a choice these formats are prepared to make. The DCC format, however, is able to choose. During recording, a DCC deck uses what Philips calls Precision Adaptive Sub-band Coding (PASC) to split the audio signal into thirty-two frequency bands, analyze the contents of each band, and selectively assign variable-length binary numbers to represent only the audible signals.

Thanks to newly developed digital signal processing (DSP) chips, PASC data compression can operate in real time. Still, the compression algorithm itself must be very sophisticated to insure that all audible program content is encoded (and that as much inaudible content as possible is not encoded). Thus, the design of that algorithm is ultimately a matter for the ears.

Philips painstakingly consulted "golden eared" listeners at its affiliated record companies, adjusting each software parameter until they were unable to differentiate between a CD and its DCC recording in blind listening comparisons. From a numbers standpoint, DCC is said to provide flat response from 5 to 22,000 Hz and a dynamic range greater than 108 dB.

DCC sampling frequencies are the standard 32, 44.1 and 48 kHz. Two sectors (A and B) are recorded in different tape directions; the direction is automatically reversed at the end of the tape. A playing time of 90 minutes will be available initially, and 120-minute cassettes are in development. (Although the longer tape will enable DCC to match DAT's maximum recording time in its standard mode, unidirectional DAT will still have the advantage of uninterrupted recording.) High-speed duplication of prerecorded DCC's will help keep the cost down.

—Ken Pohlmann

speakers as it comes. Instead, data are fed from the disc or tape into a buffer whose output is precisely regulated by a crystal-oscillator clock. Enormous amounts of processing are applied to the data in the buffer to make sure that what goes out is correct, complete, and in the proper order.

The Bottom Line

Thus, at every turn, both technically and audibly, DAT has considerable advantages over the analog cassette. In price, today's digital audio tape products are clearly aimed at an "upscale" market, but they are already economically competitive with conventional high-end cassette decks. Analog decks priced at \$500 or more are currently selling at a rate of about 100,000 a year. It is in this part of the market where DAT decks are expected to have the most impact. CD's are already a clear winner over prerecorded tapes in this market, as your own buying habits probably attest. And, as we've seen, a DAT deck is essentially a CD-quality tape recorder.

In terms of ease of use, I find little to choose between the DAT deck and the CD player that sits atop it in my equipment bay. The pop-open drawer on the CD player is a little wider, but the basic playback controls are the same, and if I record CD's digitally I don't even have to set the recording-level control. My analog deck is a little larger than either digital component, and because I optimize its bias and equalization controls for each tape I make (necessary to get really flat frequency response and low distortion from analog cassettes), recording on it is significantly more complicated than dubbing onto DAT. Finding a given selection is a little faster on a CD than on a DAT, though the high-speed winding and electronic precision of the DAT deck make it no chore, and it's much faster than on any analog cassette deck.

For some people, however, no matter how clear the advantages of DAT may be, the fundamental argument will always be that it's not "natural" to store music as a string of ones and zeroes. I'll admit that it's not easy to think of a Beethoven sonata as a "binary file." You must make your own decision; for me, the deciding factor is that my DAT deck is even better than the professional open-reel recorder I lugged to so many concerts for so many years. And my ongoing project is dubbing the live master recordings I've made to this wonderful new digital format. □

termined by one or another standards organization, such as NAB, JIS, ANSI, IEC, etc.). Individuals vary in their sensitivity to and tolerance of small, momentary pitch changes, but to some extent your ear *always* registers them. Amid the dynamic changes of music these jitterings are hard to isolate, but they form an underlying

background to every cassette you play, and I think they are largely responsible for some of the subtle imaging problems mentioned above.

DAT's, however, like CD's, are inherently free of mechanically induced flutter effects. The reason is that with digital media the music is not simply read off the tape and pushed out to the

McIntosh®

...PURE POWER for PURE MUSIC

Pure Music requires Pure Power and lots of it. The McIntosh MC 7200 Power Amplifier, from gold plated inputs to gold plated 50 amp outputs, provides the Pure Power for your choice of loudspeakers.

The MC 7200 Stereo Power Amplifier is rugged and reliable. The mechanical and electrical design is the result of the many years of engineering and manufacturing experience by the designers at McIntosh. This "know-how" combined with meticulous attention to design and production details, makes the MC 7200 one of the finest products produced by McIntosh Laboratory.

The output signal is so distortion free as to be beyond the measurement capabilities of conventional distortion analysis equipment. You'll get almost 50 amps of Pure Power with less than 0.005% of distortion.



For information on McIntosh products and product reviews, please send your name, address and phone number to:
McIntosh Laboratory Inc.
Department SR591
PO Box 96 East Side Station
Binghamton, NY 13904-0096
CIRCLE NO. 12 ON READER SERVICE CARD

Handcrafted with pride in the United States by dedicated, highly trained craftspeople.

In 1987, critics said Bose® changed the way people thought about loudspeakers.

"Superb sound and virtual invisibility."

"...side by side with speakers costing three to five times as much, the AM-5 consistently produced the more exciting and listenable sound..."

Julian Hirsch,
Stereo Review, 1987



Now, they're saying it about our Lifestyle® music system.

"No visible speakers, no stack of components, nothing that looks like sound equipment."

"Hit the start button and suddenly the room fills with music of exemplary clarity and fullness."

Hans Fantel,
*The New York Times**, 1990



Call us today to arrange for a personal audition at a participating dealer near you. Try the Lifestyle® music system in your own home for two weeks. Then part with it, if you can.

For more information and a free Lifestyle® music system video, call;

1-800-444-BOSE (2673) 8:30AM-9:00PM ET.

In Canada call 1-800-465-BOSE (2673) 9:00AM-5:00PM

BOSE
Better sound through research.



Joni Mitchell Updates Her Life and Times

IN her sixteenth album, "Night Ride Home," Joni Mitchell—pop's most obsessed and daring romantic—muses against the dying of the light. Call it the effect of middle age (she's forty-seven now), or simply the result of finding a mate—her bassist and co-producer, Larry Klein. But she's begun to settle down, relatively speaking, to make her peace with mortality, and the result is the strongest recorded update on her life and times since 1976's underrated "Hejira."

Musically, "Night Ride Home" creates rich aural moods with a set of spare, gliding arrangements. The tracks are built, rhythmically, on Klein's understated bass patterns. Above them, Mitchell's acoustic guitar or piano eases the songs along. Occasionally a soprano sax (Wayne Shorter) or oboe (Mitchell herself) lifts the music further, but the only additional sounds come from moody tendrils of amplified guitar or synthesizer.

Lyrically, Mitchell seems these days to be looking both forward and backward, with a combination of contentment and regret. Her new songs, as you'd expect, are mainly about love. In *Nothing Can Be Done*, for example, she sings about love on the rocks: "Oh I am not old/I am told/But I am not young/Oh and nothing to be done." But while that air of desperation is familiar from earlier Mitchell albums, elsewhere she creates an image of quiet domesticity, as in the title track's description of a Fourth of July car ride with her lover.

Of course, Mitchell sings about other subjects as well. *Come In from the Cold* is an ambivalent take on the very notion of sex: "Is this just vulgar electricity/Is this the edifying fire? . . . Does your smile's covert complicity/debase as it admires?" Later there are songs about sexual abuse and religious liberation, and even a setting of William Butler Yeats's poem "The Second Coming."

Still, the mood of the album is set by the relationship songs, in which the push-pull of passion never stays in balance for long. That almost autumn-



nal feeling is reinforced by Mitchell's voice, sounding a little the worse for wear. The honeyed soprano is no longer quite so sweet; it's deeper, even a little hoarse. Mitchell still sings with the same gorgeous jazzy inflections, but the old ease is gone. When she sings about her past, present, and future—with sentiment and melancholy—her voice is further evidence of the passage of time. We have always heard that voice with wonder, but now, in this remarkable and mov-

ing album, we hear it with a touch of sadness, too.
Ron Givens

JONI MITCHELL: *Night Ride Home*. Joni Mitchell (vocals, guitar); Larry Klein (bass); Vinnie Colaiuta (drums); other musicians. *Night Ride Home*; *Passion Play (When All the Slaves Are Free)*; *Cherokee Louise*; *The Windfall (Everything for Nothing)*; *Come In from the Cold*; *Nothing Can Be Done*; *The Only Joy in Town*; *Ray's Dad's Cadillac*; *Two Grey Rooms*. GEPFEN © GEFD-24302 (52 min), © GEFC-24302, ● GEF-24302.

Murray Perahia's Stimulating "Aldeburgh Recital"

THE title "The Aldeburgh Recital" is bound to be a little misleading, or in any event less than clear, on Murray Perahia's new Sony Classical disc of music by Beethoven, Schumann, Liszt, and Rachmaninoff. It is not a live recording but the audio portion of a program the pianist taped for a videodisc at the Maltings,

Snape, two years ago, in advance of an actual public performance. This approach has certain advantages over both a studio session (a balanced program, greater in range and contrast than the usual collection of works by a single composer, and played in a "natural" setting) and a live concert recording (no audience noises, no ap-



plause to break the mood created by the music), and in this case it has given us an exceptionally stimulating hour of musicmaking.

The Beethoven is the wonderfully concise set of Thirty-two Variations in C Minor, more or less contemporaneous with the Fourth Piano Concerto: 10 minutes of concentrated drama, wit, and all-round brilliance to which any composer ought to have been proud to affix an opus number, but, for some curious reason, Beethoven did not. Because it is brief, and carries no sobriquet, such a work might be overlooked amid the grander dimensions of Beethoven's "Eroica" Variations and the monumental "Diabelli" set that capped his keyboard production. On its own, and in Perahia's hands, it can be admired and relished for its own very substantial strengths, and it is a knockout piece to start a recital.

Schumann is a composer with whose music Perahia has been closely identified since the very beginning of his recording activity, and his affectionate realization of the *Faschingschwank aus Wien*, which reminds us that Schumann really has no more eloquent champion, will be the highlight of this program for many listeners. For me, though, after the Beethoven, it is the shorter pieces by the two

composers with whom we do *not* readily identify this pianist. Liszt's Hungarian Rhapsody No. 12, in particular, is downright intoxicating, though not in the way most would regard as "Lisztian." Perahia, naturally, doesn't go in for barnstorming and bluster, but he does see glitter as a legitimate end, and he finds a *charm* in this music—the all but forgotten ingratiating quality such folk-oriented pieces ought to exude first of all—that must have given him special pleasure and which he passes along to us with the same innate elegance that distinguishes his Beethoven and Schumann. The famous *Consolation* No. 3 benefits perhaps even more from this approach, taking on a revivifying air of noble simplicity.

At the end are four of Rachmaninoff's *Études-Tableaux*, more material one might imagine to be far from Perahia's sphere of enthusiasm but which he must admire enormously. As in all the other pieces on the disc, these performances are enlivening in the very best sense, taking the music absolutely on its own terms, touching all the emotional bases and glorying in the virtually orchestral range of colors. That range, along with every other aspect of Perahia's playing, has been splendidly captured in the recording,



WILLIAM COUPON/CBS RECORDS

one of the finest reproductions of piano sound yet achieved on this label (or its predecessors). *Richard Freed*

MURRAY PERAHIA. *The Aldeburgh Recital.* **Beethoven:** *Thirty-two Variations in C Minor, WoO 80.* **Schumann:** *Faschingschwank aus Wien, Op. 26.* **Liszt:** *Hungarian Rhapsody No. 12; Consolation No. 3, in D-flat Major.* **Rachmaninoff:** *Études-Tableaux: Op. 33, No. 2, in C Major; Op. 39, No. 5, in E-flat Minor; No. 6, in A Minor; No. 9, in D Major.* Murray Perahia (piano). SONY CLASSICAL © SK 46437 (59 min).

The Kentucky Headhunters At Play in the "Electric Barnyard"



THE two sets of brothers and a cousin who make up the Kentucky Headhunters hail from south-central Kentucky and a tiny town in Arkansas—places that trends bypass altogether if they can. So when the British Invasion—and particularly the bluesy hard rock and psychedelic music of Eric Clapton and Cream—showed up in the late Sixties and early Seventies, the budding Headhunters, then playing boogie and bluegrass, glommed onto it for life. Understandably—nothing that exciting had ever filtered into the little cracks of their rural Americana, and nothing else would until ZZ Top and Lynyrd Skynyrd came along a few years later.

All of those influences—the music of Bill Monroe and the power chords of the Top and any number of loud Southern rockers—came together last year in a stunning kind of synthesis in the Headhunters' award-winning debut album, "Pickin' on Nashville." Now comes their follow-up album, "Elec-

PHOTO: PETER NASHMERCURY

You've never heard it so good.

Ford was the first car maker to offer compact disc capability in our high performance automotive sound systems. It's not surprising that for 1991, no other car company has more ways for you to enjoy the wide-open sound of compact discs.

You'll also find advanced technical features like dynamic range compression for optimum listening pleasure no matter what the road or driving conditions may be.



Dealer Installed Ten CD Changer*

And our popular ten CD changer allows you the convenience and freedom of over ten hours of your favorite "traveling music" without ever having to handle a compact disc while driving.



Compact Disc Radio*



Compact Disc Player*

You can arrange for an audition at your local Ford or Lincoln-Mercury dealer; bring your favorite CD for a test-listen and we think you'll agree that "you've never heard it so good."

*Ford Compact Disc Systems are optional on select Ford, Mercury and Lincoln vehicles.



AUDIO SYSTEMS
The Sound of Quality



tric Barnyard," and just in case listeners don't get the message, the first half, the countrier side, is titled "Steppin' in It," and the second half, the louder side, is titled "Walkin' Through It."

Anyone who hasn't seen the Headhunters in concert won't be prepared for the rowdiness and ferocity that bellow through "Electric Barnyard." In eight originals and five cover tunes, the band forges a sound—and a personality—that seems a natural integration of all its disparate elements. The fact that the album is also great fun is merely icing on the cake.

It's been a long time since the physical appearance of a band was so bodacious—the Headhunters' dirty, long-haired look gives "scrungy" a new meaning, and rhythm guitarist Richard Young is a dead ringer for Cousin It of the Addams Family. But what makes

their music so infectious is the combination of the bandmembers' distinctive sounds. Lead singer Ricky Lee Phelps is a preacher's kid who matches his daddy's pulpit bravado with a natural love of bluegrass and Southern rock, a taste shared by his bass-playing brother, Doug. Lay that on top of the Young brothers' love of Cream and Led Zeppelin-style rock, and you have a brash yet rootsy sound that comes to a head in Greg Martin's scorching lead guitar.

But the Headhunters have something else going for them, too, and that is their wit. Not many contemporary performers have the panache to write a white-trash tune like *16 and Single* or, for that matter, *Big Mexican Dinner*, a South of the Border send-up that is sure to offend somebody somewhere.

The bottom line is that both the

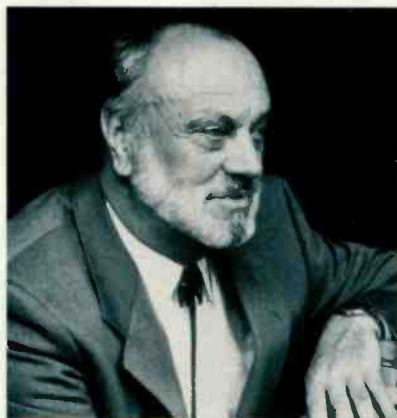
country and the rock audiences are ripe and ready for a decent juke-joint band like the Kentucky Headhunters. George Strait, Garth Brooks, and Clint Black may know a little about polite cowboy ways, but the rest of America wants something a little reckless, maybe a little dangerous in its music. It's all fantasy, of course, but whether you're steppin' in it or walkin' through it, this is a band whose time has come. *Alanna Nash*

THE KENTUCKY HEADHUNTERS: *Electric Barnyard*. The Kentucky Headhunters (vocals and instrumentals). *It's Chittlin' Time; The Ballad of Davy Crockett; Only Daddy That'll Walk the Line; With Body and Soul; Diane; 16 and Single; Wishin' Well; Spirit in the Sky; Always Makin' Love; Love Bug Crawl; Big Mexican Dinner; Kickin' Them Blues Around; Take Me Back*. MERCURY © 848 054-2 (48 min), © 848 054-4.

Masur: Second Thoughts On Schumann Symphonies

KURT MASUR, who becomes music director of the New York Philharmonic this fall, has been conductor of the Leipzig Gewandhaus Orchestra since 1970. He has been no stranger to the recording studios, and lately he has been rerecording some titles. The remakes are dramatically different from their predecessors, which were always musically sound but not always very exciting. Stimulated perhaps by having played a significant part in bringing about the recent political changes in Germany, perhaps by the prospect of taking over the Philharmonic, he is offering readings that are no less "solid" than before but are suddenly ablaze with vitality and drive. The first installment of his new Beethoven cycle, on Philips, brought us a galvanic, sweepingly dramatic Fifth Symphony, with real fire in its belly, and a no less refreshing account of the First. Now, on Teldec, he is responsible for two of the most inspiring realizations of any of Schumann's symphonies to come our way in years.

The "Spring" Symphony (No. 1) and the original version of No. 4 were both introduced by the Gewandhaus Orchestra in 1841 (when the latter was



billed as "No. 2"), and this is the music Masur conducts. It is not his Leipzig orchestra in this case, though, but the London Philharmonic, which seems to have been a very happy choice for this project. The English brass, in particular, is leaner, more brilliant, and more flexible than what we've heard from Leipzig, and that factor, among others, really tells in enlivening these works.

The Fourth Symphony is not exactly a remake, and that is what makes this recording especially noteworthy. Schumann revised the work substan-

tially ten years after its 1841 premiere, and it is the final version we always hear. Some twenty-five or thirty years after Schumann's death, however, Brahms, convinced that the original version was far superior, had it published at his own expense (and over Clara Schumann's strong objections). Masur's earlier recording was of the standard 1851 version; his new one of the original version will surely persuade many that Brahms was right, that Schumann had surer instincts for orchestration in 1841 than he did later. The original version of the D Minor has a conspicuously clearer texture than the revision, more like that of the "Spring" Symphony: The sound can open up and breathe—and charm the ear. The form is neater, too, with a more concise layout, no repeat in the first movement, and a trimmer introduction to the finale. No matter how much one may enjoy the 1851 version, or simply respect Schumann's wishes, the original, as heard here, is simply irresistible. The LPO plays with real conviction, as well as brilliance and warmth, in both works, and Teldec has surpassed itself in the vibrancy and body and all-round delicious realism of the sound. *Richard Freed*

SCHUMANN: *Symphony No. 1, in B-flat Major, Op. 38 ("Spring"); Symphony No. 4, in D Minor (1841 version)*. London Philharmonic Orchestra, Kurt Masur cond. TELDEC © 46445-2 (56 min).



IF YOU THINK THE VIEW IS GREAT YOU SHOULD HEAR THE SOUND.

Introducing the Wireless Rock Speaker by Datawave.

Now you can bring the great outdoors alive with the sound of music—without wires!

Announcing the amazing new WRS-10 Wireless Rock Speaker System by Datawave. Portable and compact, the WRS-10 lets you listen to sound from your Hi-Fi, CD, TV or VCR player anywhere within a 150' radius of the sound source.

Because it looks like an ordinary rock, the WRS-10 blends in naturally with any outdoor environment—so it's perfect in the backyard or garden. Battery powered and water resistant, it even lets you enjoy state-of-the-art sound by the pool or on the dock in complete safety. Plus you can add on as many RS-10 rock speakers as you like, for an

amazing surround-sound effect.

So for wireless sound as great as the great outdoors, discover the new Rock Speaker by Datawave.

 **DATAWAVE**
The Wireless Wonders



For additional information on any Datawave wireless products and for the Dealer nearest you call toll free: 800-272-9283.

THE MILLION DOLLAR TWEETER.



ENERGY loudspeakers have become the personal favorites of discriminating audiophiles the world over. **O**ur Dual Hyperdome™ tweeter is the key reason why ENERGY recreates the original performance with uncompromised accuracy. **W**ith more than \$1 million in development, it exhibits better dispersion than any other tweeter on the market today. **T**hat's also why our new ENERGY 22-Series incorporates the revolutionary SPHEREX™ baffle. **I**ts smooth, sculpted surface angles gracefully out of the

way of direct radiated sound. **D**iffraction is eliminated for superior soundstage and positional imaging. **S**imply put, the ENERGY 22-Series defines a new standard in sonic precision. **T**ake a test drive today. **Y**our ears will thank you.



ENERGY

CIRCLE NO. 1 ON READER SERVICE CARD

©1990 ENERGY • 3641 McNicoll Ave. • Scarborough, Ontario, Canada M4K 1G5 • (416) 321-1800

Recent discs and
cassettes reviewed by

Chris Albertson, Phyl Garland,
Ron Givens, Roy Hemming, Alanna Nash,
Parke Puterbaugh, and Steve Simels

DANIEL ASH: *Coming Down*. Daniel Ash (vocals, guitar, bass, saxophone, keyboards); other musicians. *Blue Moon; Coming Down Fast; Walk This Way; Closer to You; Day Tripper; This Love*; and six others. BEGGARS BANQUET © 3014-2-R (42 min), © 3014-4-R.

Performance: *Spectral*
Recording: *Good*

Dangerous liaisons, troubled memories, narcotic reveries—this is Daniel Ash's world, and welcome to it. A member of Love and Rockets, Ash steps out here with a solo album that emanates from the same haunted inner underworld the Velvet Underground explored in its first three albums. When he sings "I love the darkness and the shadows/Where I can be alone," you don't doubt that his misanthropy is real—an impression bolstered by the spectral portrait of him, shrouded in candlelight and deep blue shadows, that graces the cover of "Coming Down."

The album begins explosively when a distant snippet of a wistful Fifties love song, *Blue Moon*, dissolves into the firestorm of *Coming Down Fast*, a twelve-bar grinder cut from the same rugged cloth as the Clash's *Should I Stay or Should I Go?* Eclecticism rules, with Ash varying his plaintive, otherworldly songs with things like the bouncy, Latin *Walk This Way*, which kindles over a low flame, or a version of *Day Tripper* that's considerably more sinister and sinuous than the Beatles' original. Sometimes the contrasts occur in the same song, as with *Candy Darling*, an elegy for one of Andy Warhol's pack. *This Love* hacks at the theme of insatiable lust with acid humor as piledriving riffs and robotic vocals identify the danger (and the fun) in illicit sex.

The thematic center of the album comes in the juxtaposition of *Sweet Little Liar*, a confession of dishonesty and distemper, with *Not So Fast*, a plea for forgiveness. As a whole the album is

Explanation of Symbols

- Ⓢ = Tape cassette
- Ⓛ = LP record
- Ⓢ = Compact disc (timings are to the nearest minute)

about sin and redemption, with stark but finely focused musical backdrops creating a moody chiaroscuro of sounds and images. Hey, babe, take a walk on the wild side. P.P.

ROSEMARY CLOONEY: *For the Duration*. Rosemary Clooney (vocals); John Oddo (piano); Chuck Berghofer (bass); Warren Vaché (cornet); Scott Hamilton (tenor saxophone); Jake Hanna (drums); other musicians. *No Love, No Nothin'; I Don't Want to Walk Without You; Ev'ry Time We Say Goodbye; Sentimental Journey; They're Either Too Young or Too Old; Saturday Night Is the Loneliest Night of the Week*; and eight others. CONCORD © CCD-4444 (55 min), © CJ-444-C.

Performance: *Warm and tender*
Recording: *Clean, close-up*

"Everything that happened before [World War II] simply led up to it; every-

ing the war, gets as deeply and as touchingly into the grown-up feelings of most of the album's songs as anyone ever has. She sings them in a warmly intimate, one-to-one manner that's a far cry from the ultracheery approach she used to be famous for. Not only have the songs grown in richness with the passing years, but so, too, has Clooney. R.H.

THE FEELIES: *Time for a Witness*. The Feelies (vocals and instrumentals). *Waiting; Time for a Witness; Sooner or Later; Find a Way; Decide; Doin' It Again*; and four others. A&M © 75021-5344-2 (42 min), © 75021-5344-4, ● 75021-5344-1.

Performance: *Guitar-riffic*
Recording: *Good*

In "Time for a Witness," the Feelies come on like a cross between the Velvet Underground and a circa-1967 San Francisco jam band. There's more speed than acid in Glenn Mercer and Bill Million's



The Feelies: neo-acid-garage rock

thing that has happened since has been influenced by it." So writes Rosemary Clooney's brother Nick in his notes to this new album of songs from 1941-1945. Although the WWII era marked the apex of what we now call our century's "classic pop"—dominated by Broadway, Hollywood, and Tin Pan Alley—it was also the last period in which virtually everybody in the country embraced the same kind of music and kept it at the top of the charts. In the irrevocable musical splintering that came after the war, that classic style (particularly its heart-on-the-sleeve sentimentality) lost its dominating popularity. Yet individual songs have proved remarkably durable, and Clooney's "For the Duration" beautifully shows why they'll surely continue to endure.

Clooney, who was just a teenager dur-

ing the war, gets as deeply and as touchingly into the grown-up feelings of most of the album's songs as anyone ever has. She sings them in a warmly intimate, one-to-one manner that's a far cry from the ultracheery approach she used to be famous for. Not only have the songs grown in richness with the passing years, but so, too, has Clooney. R.H.

succinct guitar rave-ups, which are bright and forward-surgin in a way that hasn't been heard since a glorious glut of garage bands set their sights on the Fillmore West twenty-odd years ago. There's potency in the band's jittery, guitar-driven sprints—the title track's solos explode like race horses bolting out of the gate—and spine-tingling pop in the songwriting as well. Mercer's slurry speak-singing powers numbers like *Sooner or Later* and *Decide*, the latter a dead ringer for the "Loaded"-era Velvets right down to the offhand, Lou Reed-ish vocal. The Feelies can also stretch out and explore space with a more measured gait, as in the 7-minute *Find a Way*, where elongated guitar interplays and muted cymbal crashes create a hypnotic drone similar to Jefferson Airplane's version of Donovan's *Fat An-*

PHOTO: GUY/NUP/WINTERBAM RECORDS

gel. If all these references turn you on, you'll revel in "Time for a Witness," a riveting synthesis of punk pithiness, pop songcraft, and inspired guitar work from a band whose well-chosen influences are proudly declared. *P.P.*

THE KENTUCKY HEADHUNTERS: *Electric Barnyard* (see Best of the Month, page 74)

BRENDA LEE. Brenda Lee (vocals); the Forester Sisters (background vocals); other musicians. *Once Love Makes a Fool of You; Love Is Fair; Against My Will; Lonely Too Long; Some of These Days; You Better Do Better;* and four others. WARNER BROS. © 26439-2 (34 min), © 26439-4.

Performance: *Topnotch*
Recording: *Very good*

The great Brenda Lee's previous comeback attempts failed because her producers never figured out that the way to have her succeed was to leave her alone, to let her record the kind of material, with the kind of backing, that made her a legend in the first place. You wouldn't think it would take a genius to realize that, but it did take Jim Ed Norman, who's brought Little Miss Dynamite back with a terrific set of new tunes that sound as if they were recorded back in 1962, when Lee was the toast of the town.

All the old trademarks are here—the

Leaves You. But Lee's new rhythm numbers are also something to write home about, especially the gospelish *One and Only* and *You Better Do Better*, in which she handles a tricky vocal line with the kind of aplomb younger singers can only envy. Only once do Lee and Norman go over the top, in the big-band production of *Some of These Days*, where she comes off like Sophie Tucker. Otherwise, anyone who can listen to this record and keep his foot still qualifies for my personal Dead But Still Sitting Up award. *A.N.*

LONDONBEAT: *In The Blood.* Londonbeat (vocals and instrumentals); other musicians. *I've Been Thinking About You; A Better Love; No Woman No Cry; It's in the Blood; Getcha Ya Ya; Step Inside My Shoes; She Broke My Heart (In 36 Places); She Said She Loves Me;* and four others. RADIOACTIVE/MCA © MCAD-10192 (50 min), © MCAC-10192, © MCA-10192.

Performance: *Retro-nuevo soul*
Recording: *Good*

Everything old is new again. Or maybe everything new is old again. When you listen to Londonbeat, it becomes clear how a musical time machine can be in two places at once. The vocals of this London r-&-b group—essentially a quartet of three singers and one multi-instrumentalist, but with a lot of musical help—bring back memories of the best

driving dance tune with all the synthesized energy of the music that now dominates the pop charts. The beat, as in nearly all the other songs, moves with a supple grace that belies its mechanical origins. Unlike disco, which sounded robotic, the best contemporary dance music uses machines in a way that sounds human, if slick. Londonbeat goes even further. The lyrics of its songs may rely a little too much on sunny homilies, but the melodies are charming. And they sound effervescent when these postmodern soul masters spin them around the 1991 dance floor. *R.G.*

BOBBY MCFERRIN: *Medicine Music.* Bobby McFerrin (vocals); vocal accompaniment. *Medicine Man; Baby; Yes, You; The Garden; Common Threads; Sweet in the Mornin'; Discipline; The 23rd Psalm;* and four others. EMI/USA © E2-92048 (49 min), © E4-92048.

Performance: *Stunning virtuosity*
Recording: *Excellent*

Bobby McFerrin's continuing experiments with the human voice reach new heights in this album, which consists entirely of his own compositions. "Medicine Music" taps McFerrin's African and African-American roots, employing chants, mixed rhythms, and poignant melodies that have the quality of ancient spirituals. The music is intended to touch the listener at the deepest part of his or her soul, and thus to heal. In this respect, the performer assumes the role of witch doctor.

What is most amazing is that in all but three selections, McFerrin's voice is the only sound heard. Through skillful overdubbing, he becomes both a chorus and an orchestra accompanying himself in such spirited and affecting numbers as *Baby* and *Soma So de la de Sase*, which is written in a nonsense language he created. In *He Ran All the Way* he conveys the panic of an escaped slave by combining a drone with a pulsing beat. When others join McFerrin, they blend in seamlessly. Voicestra provides a perfect complement in *Sweet in the Morning* and *Discipline*, which features a baritone solo by McFerrin's father, Robert McFerrin, Sr., who was one of the first black men to sing with the Metropolitan Opera.

While nothing here is less than stunning, one track stands out: *Common Threads*, drawn from the soundtrack McFerrin created for the Oscar-winning film about the AIDS quilt. Majestic in its simplicity and piercing in the pain it projects, *Common Threads* lingers in the mind and heart long after the disc is over. The ability to create music with this sort of power must be magical. *P.G.*

JONI MITCHELL: *Night Ride Home* (see Best of the Month, page 73)

MOTORHEAD: *1916.* Motörhead (vocals and instrumentals). *The One to Sing the Blues; I'm So Bad (Baby I Don't Care); No Voices in the Sky; Going to*



Londonbeat: postmodern soul masters

full instrumentation, the big background voices, the Floyd Cramer-like, slipnote piano touches, and, of course, Lee's huge, glorious voice, as much gospel as it is old-style rock and ballad. Ballads, as anyone over the age of thirty-five knows, are what Brenda Lee always did best, and they're the best tracks here, too, particularly Beth Nielsen Chapman's *Once Love Makes a Fool of You* and Kent Robbins and Mike Reid's woman-to-other-woman song, *When He*

Sixties and Seventies black music. Lead singer Jimmy "Helmsey" Helms is like the two all-time best Temptations vocalists rolled into one, combining the high sweetness of Eddie Kendricks and the deep growling of David Ruffin. When he harmonizes with the other two Londonbeat singers, the effect is sublime.

That's the old part. The new element is the music. The first cut in the album, *I've Been Thinking About You*, which has been a worldwide hit, is a smooth, hard-

World's Largest/Smallest Record Store

Browsing through **Bose Express Music Catalog** is like having an enormous record store all to yourself. You can shop for the music you want, when you want it. We carry everything in print in Classical, Jazz & Rock...you will find it all in our 240-page, 50,000-title catalog.

We carry the complete catalog of all classical labels including DG, Phillips, Angel, London, Chandos, Harmonia-Mundi, Nonesuch, Telarc, Delos, Verona ...in total, over 1,000 independents. All music Videos are available as well. Ordering from us couldn't be easier. Call, or send the order form to us by fax or mail.



1990 GRAMMY WINNERS

BEST RECORDS OF THE YEAR

\$12⁹⁹ per CD

Quincy Jones - *Back on the Block* (40600) ALBUM OF THE YEAR

Mariah Carey - *Mariah Carey* (44655) BEST NEW ARTIST; BEST POP FEMALE VOCAL

Vaughan Brothers - *Family Style* (46785) BEST ROCK INSTRUMENTAL PERFORMANCE; BEST CONTEMPORARY BLUES RECORDING

B.B. King - *Live at San Quentin* (48051) BEST TRADITIONAL BLUES RECORDING

Harry Connick, Jr. - *We Are In Love* (43544) BEST JAZZ MALE VOCAL

Oscar Peterson - *Live at the Blue Note* (45686) BEST JAZZ INSTRUMENTAL SOLO & GROUP PERFORMANCE

Robert Johnson - *The Complete Recordings* (45095) 2CAs \$14.99, 2 CDs \$23.99 BEST HISTORICAL ALBUM

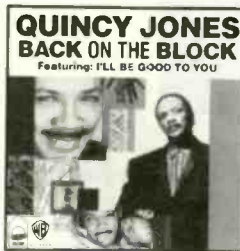
Ives: *Symphony No. 2; The Gong on the Hook and Ladder; Central Park in the Dark; Unanswered Question* New York Philharmonic (Bernstein) (46219) BEST CLASSICAL ALBUM

Wagner: *Das Rheingold* Morris, Ludwig, Jerusalem, Wlaschiha, Moll, Zednik, Rootering, Mettropolitan Opera Orchestra (Levine) (41800) 3 CDs \$44.99 BEST OPERA RECORDING

Brahms: *Three Violin Sonatas* Itzhak Perlman, Daniel Barenboim (45684) BEST CHAMBER MUSIC PERFORMANCE

Carreras, Domingo, Pavarotti - *The Three Tenors in Concert with Zubin Mehta* (46582) BEST CLASSICAL VOCAL PERFORMANCE

Vladimir Horowitz - *The Last Recording (Chopin, Haydn, Liszt, Wagner)* (38575) BEST INSTRUMENTAL SOLOIST (WITHOUT ORCHESTRA)



Ordering from us couldn't be easier. Call, or send the order form to us by fax or mail.

A one-year subscription is \$6. Your first issue includes a refund certificate for \$6.00, plus \$50.00 in additional merchandise credits. There is no purchase obligation or unrequested shipments.

Any CD in this Issue \$13⁹⁹

Subscribers may order any title reviewed or advertised in this issue for \$13.99/CD, \$7.99/Tape (for CDs regularly priced less than \$17) plus \$3.95 S&H *per order*.

Free Updates

New subscribers will receive 1 FREE year of Catalog Updates, covering new releases & monthly specials.

1-800-233-6357

Subscription / Mail Order Form

- Start Updates & send 240-page Catalog (\$6.00/yr., refundable on first order from the catalog)
- Overnight Catalog Delivery - I'm enclosing \$5 extra.
- Send me the attached list of recordings (include artist, title, & format - CD/CA) Please include payment + \$3.95 for Shipping & Handling *per order (music orders only)*
- Check or Credit Card Visa MC AMEX (Canadian Orders Credit Card Only)

_____ EXP _____

Name _____

Address _____

City/State/Zip _____

CALL OR MAIL WITH PAYMENT TO:

Bose Express Music, 50 W 17th St., NYC, NY 10011

1-800-233-6357

SREV91

John and Mary



Brazil; *Nightmare/The Dreamtime*; and five others. WTG/EPIC © NK 46858 (39 min), © NT 46858.

Performance: *Take no prisoners*
Recording: *Roaring*

Motörhead virtually invented speed metal, and while that probably won't earn them a berth in the Rock & Roll Hall of Fame, they rate more than a footnote in rock history. Their adrenalin-jolt combination of manic tempos and sledgehammer riffs may not be your cup of blood, but if you've ever enjoyed such more critically celebrated bands as the Ramones, Blue Öyster Cult, or Spinal Tap, you might be pleasantly surprised by the glorious racket these lugs from Britain make. "1916" might, in fact, turn out to be metal's "Dark Side of the Moon." Its fast songs serve as textbook examples of how to rock, and the more conceptual pieces (*Nightmare/The Dreamtime*, *1916*, *Love Me Forever*) plunge into the heart of darkness with an unnerving power.

So what if leader Lemmy Kilmister's voice sounds like the guy grabbed the wrong bottle and swigged lye instead of Jack Daniel's? His gruff growling, mixed down in the trenches with the guitars and drums, is part of Motörhead's rough-hewn charm. If songs like *I'm So Bad (Baby I Don't Care)*, *Shut You Down*, and *The One to Sing the Blues* don't move you to kick up a cloud of dust, or at least smile a little, then there's a nice rest home in Florida awaiting your arrival. These guys celebrate their lives as rockers, rounders, and rogues as if they couldn't imagine doing anything else. *Going to Brazil* finds the band whipping a Chuck Berry riff while Lemmy happily spouts off about a plane flight to a rock festival. Three songs later, they're headed to Los Angeles to settle into an uproariously dissolute life that is every fogbound British rocker's dream: "I wanna be a star and buy a hundred guitars/Eat everything I can bite/I wanna feel a little danger, feel a little stranger/Angel City tonight."

Are they serious? Hell, yes. Are they having fun? You bet. These guys have been battered by the biz long enough to become permanently jaded, but here they have a blast dancing on the broken glass of a nonstop rock-and-roll party. If you want to hear what a synth-free band of true believers sounds like in 1991, look no further than "1916." P.P.

MAURA O'CONNELL: *A Real Life Story*. Maura O'Connell (vocals); Dean Parks (guitar); Jerry Douglas (dobro); Jim Keltner (drums); other musicians. *When Your Heart Is Weak; Burning My Rowboat; A Family Tie; Ireland; Unwinding*; and five others. WARNER BROS. © 26342-2 (37 min), © 26342-4.

Performance: *Full-blooded*
Recording: *Very good*

Pop music—or at least the kind of pop music that derives from folk and rock-

JOHAN LOMBARDO and Mary Ramsey are the kind of people you'd like to have as neighbors. They're sensitive, thoughtful, and talented. You won't have to worry about them throwing wild parties or detonating cherry bombs in garbage cans; they're more likely to put up birdhouses and plant trees in the yard. Such are the first impressions generated by John and Mary's "Victory Gardens," an album that skirts the boundary between folk and classical music while offering lyrics a poetical cut above the norm.

John and Mary call to mind the manicured folk-rock of 10,000 Maniacs, and for good reason. Lombardo was a founding member of that band (leaving after "The Wishing Chair"). Ramsey's honeyed voice is similar in timbre to Natalie Merchant's, and guitarist Robert Buck and drummer Jerome Augustyniak of the Maniacs are supporting players in "Victory Gardens." The Maniacs' *Less Is More* approach is operative here as well, with John's guitar and Mary's strings giving the songs a graceful composure and the accompanists adding color within the dotted lines. It truly sounds like an album made by old friends who are attuned to each other and draw from a common reservoir of experience.

"Victory Gardens" flows agreeably from one vignette to another. Mary's voice is convivial yet full of deep feeling, while John's is conversational, homespun, and honest. What's more, their sound is flavored with some unexpected spices. The guitar playing owes as much to Middle Eastern *soukous* as to the American folk tradition, and the violin and viola remind one of jazz great Stephane Grappelli as much as anything in

the classical world. The drummer's brushwork is sprightly and brisk, driving the songs along without becoming intrusive. John and Mary's unconventional small ensemble is unique in makeup but familiar and accessible in the hearing.

The songs set childhood reminiscences and closely observed short stories to lithe, gingery melodies as evocative as a handsewn quilt. *July 6th* is the best example, recounting in fluid detail the tragic, true story of a circus fire that claimed the lives of 168 people in 1944, among them a young girl without relatives to claim her body. Rustic English folk-rocker Ronnie Lane (late of the Faces) provides an affecting cameo vocal in *We Have Nothing*, and Joey Moland of Badfinger injects ramshackle rootsiness into *I Became Alone*. In *Rags of Flowers* Mary sings, in a breezy, legato way, "Searching for our secret tree, the one with both our names, but there was nothing, nothing we could find," words that convey a sense of youthful turning points for which memory is vivid but hard evidence is vanishing—a wistful theme that permeates the entire album. It all goes down as agreeably as a cup of cappuccino, simultaneously firing the imagination and soothing the psyche.

Parke Puterbaugh

JOHN AND MARY: *Victory Gardens*. Mary Ramsey (vocals, viola, violin, piano, organ); John Lombardo (guitars, bass, vocals); other musicians. *Red Wooden Beads; The Azalea Festival; Piles of Dead Leaves; We Have Nothing; Rags of Flowers; I Became Alone; The Open Window; July 6th; Pram; Un Canadien Errant*. RYKODISC © RCD-10203 (41 min), © RACS-0203.

new wave POUNDERS

Are you wild enough?

Pyle New Wave Pounders® have been redesigned and improved to capture the latest sound reproduction innovations and tame them just enough to give you high-powered performance without the high price and distortion of other speaker systems.

Improved heavy-duty, high excursion, polymer laminate woofers growl lower and louder inside our new computer designed port tuned enclosures. And our exclusive Ironcloth™ and Ironglaze™ technology in the voice coil and spider assembly ensures maximum power handling capabilities.

High performance liquid-cooled dome tweeters produce smoother and crisper highs without fear of power overload.

19 new shapes and sizes, including many split models for maximum stereo separation, install easily and look great with their sleek new carpet-covered profiles.

American-made Pyle New Wave Pounders® are the newest and most technologically advanced speaker systems available today. Now you can afford to experience the wild sound of Pyle speaker systems in virtually any vehicle.



Introducing Pyle Toobz™ —
The Rounder Pounders
that give you true bass
performance in limited
space applications.



Made in U.S.A.



PYLE

For the name of the Pyle dealer nearest you write:
Pyle Industries, Inc. • Huntington, IN 46750

For technical assistance call 1-800-852-9688.

CIRCLE NO. 18 ON READER SERVICE CARD

H A Harman International Company

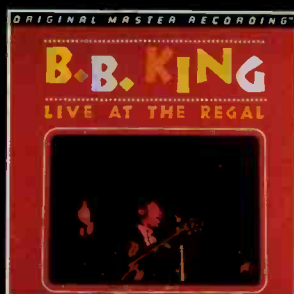


ORIGINAL MASTER RECORDING™

ULTRADISC



THE MOBILE FIDELITY FORMULA*
O·M·R + A/A/D + 24k Au =
The Ultimate Audio Experience



***(Original Master Recordings
+ Analog/Analog/Digital
proprietary transfer
technology + 24 karat gold
plated compact discs)**



For a complete free Original Master Recordings catalog and ULTRADISC technical information, call toll free **800-423-5759** or write to: Mobile Fidelity Sound Lab, PO Box 1657, Sebastopol, CA 95473-1657.

and-roll—has a bias toward songwriters who give voice to their own visions. The cult of the singer-songwriter is so solidly established at this point that we assume those who come up with songs can realize their full potential better than anyone else. Even if the composer has the stringiest or bleatiest of voices, we give that limited expression the benefit of our aesthetic doubt. Those assumptions are called into question by a singer like Maura O'Connell, whose good, strong voice and finely tuned interpretive ear combine to bring new colors, emotions, and urgencies to other people's tunes. She proves what should be obvious: When a great singer interprets great songs, the results can knock the breath out of you.

"A Real Life Story" is O'Connell's second solo album, following 1989's "Helpless Heart." You might know O'Connell as a former vocalist with the Irish group De Danaan, but that shouldn't mislead you into thinking that "A Real Life Story" is an ethnic album. The songs here come from a diverse group of Anglo-Americans, including John Lennon and Paul McCartney, Tom Waits, and John Hiatt. Other songwriters here, such as Peter Kingsbery and Larry Tagg, are less familiar, but their songs are carefully wrought, emotionally strong works as well. O'Connell may not write songs, but she sure knows how to choose them.

When O'Connell wants to, her full-blooded soprano can raise the roof, but she never lets it get out of control. She will also, at the drop of a phrase, become whisper soft or tenderly matter of fact. Modulation is the key to her art, and she moves fluidly from hot bursts to warm swoops to cool monotonies. Even a familiar tune like the Beatles' *For No One* takes on new life in O'Connell's quietly impassioned performance. Like every other song in the album, when O'Connell sings it, it becomes hers. R.G.

R.E.M.: *Out of Time*. R.E.M. (vocals and instrumentals); other musicians. *Radio Song; Losing My Religion; Low; Near Wild Heaven; Endgame; Shiny Happy People*; and five others. WARNER BROS. © 26527-2 (44 min), © 26527-4.

Performance: *Twitchy*
Recording: *Good*

These guys sound bored. In addition to the typical R.E.M. tracks, driving folk-based rock with murky overtones, you can hear a wild catalog of special effects in this album, from the guest rap of KRS-1 to the spoken recitation of lead singer Michael Stipe to syrupy strings and horns. It sounds like overthinking was needed to keep everyone awake.

That's okay as long as there's something to keep us thinkers at home satisfied, too. Listening to R.E.M. has always been an interactive experience (if only to decode Stipe's vocals), and the process has become only slightly easier now that the band is recorded more

cleanly. Without their puzzles, R.E.M. would certainly be less interesting. In fact, the songs in "Out of Time" that are easiest to figure out—*Near Wild Heaven, Endgame, Belong, and Texarkana*—are the ones that quickly become tedious.

The rest, however, are packed with nuance. *Losing My Religion* may literally be about a loss of faith, or it may be about the loss of romantic love, or may-



R.E.M.: interactive

be about how these two things are the same thing, or maybe it's about performance anxiety, or maybe it's about none of these things. Maybe I'm getting some of the crucial words wrong. In conversations with journalists, Stipe has offered a clue by describing "Out of Time" as a collection of "love songs," but I don't know how much I trust him.

No faith is needed to get the music, although a chart identifying the stylistic ties would be helpful. Tiny bits of influence pop out in the strangest places, like the quavery, nasty electric guitar in *Country Feedback* that seems straight out of Jefferson Airplane. In *Half a World Away*, the instruments just keep coming—after the mandolin, organ, guitar, bass, and harpsichord, the strings show up. The whole album has the same sort of overdone, more-is-more quality. Maybe R.E.M. should have called it "Out of Ideas," because after using everything they could think of here, they can't have any left. R.G.

Jazz

LIONEL HAMPTON: *Mostly Blues*. Lionel Hampton (vibraphone); Bobby Scott (piano); Joe Beck (guitar); Bob Cranshaw, Anthony Jackson (bass); Grady Tate, Chris Parker (drums). *Bye Bye Blues; Someday My Prince Will Come; Take the "A" Train; Blues for Jazz Beaux; Walkin' Uptown*; and four others. MUSIC MASTERS © CIJD 60168K (60 min).

Performance: *Good vibes, had beat*
Recording: *Very good*

Lionel Hampton, the sole survivor of the famous Benny Goodman Quartet and

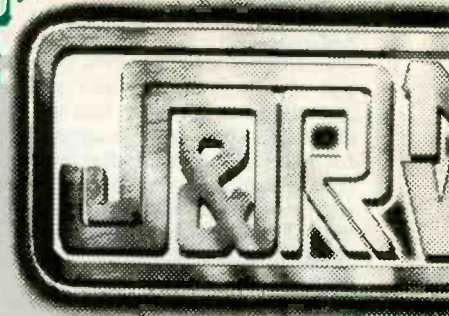
the man who more than anyone else helped to popularize the vibraphone, is a bandleader who gave many successful performers their start. But his own music remains Hampton's most outstanding achievement. "Mostly Blues," a newly released set of 1988 quintet recordings, demonstrates just how well his creative juices continue to flow. Mind you, Hampton's style has not changed for several decades, but it continues to sound fresh, and proof of its timelessness is to be found in the way it complements a wide range of other musical styles. Unfortunately, although pianist Bobby Scott and guitarist Joe Beck contribute mightily to "Mostly Blues," the drummers—Grady Tate on the first five tracks, Chris Parker on the rest—seem bent on sabotage. For this reason, I cannot recommend the album. If you like Hampton's music, I suggest you pick up such Bluebird reissues as "After You've Gone," Volume I of a Goodman Trio and Quartet project, and "Together Again," featuring a 1963 reunion of the quartet. Let's also hope that Bluebird reissues the classic all-star Victor sessions Hampton led between 1937 and 1940. While we're at it, let's wish for more new Hampton sides—with more sympathetic drummers. C.A.

ETTA JONES: *Sugar*. Etta Jones (vocals); Houston Person (tenor saxophone); other musicians. *Sugar; So I Love You; That's All There Is to That; All the Way*; and four others. MUSE © MR-5379, © MC-5379, © MCD-5379 (42 min).

Performance: *Weighty*
Recording: *Too much echo*

Etta Jones thrilled Harlem audiences back in the late Forties, and she has recorded often, starting with a 1944 Barney Bigard Black and White date, but her only big hit has been her 1960 Prestige version of *Don't Go to Strangers*. In recent years Jones, whose voice continues to be strong and authoritative, has enjoyed a musical association with tenor saxophonist Houston Person. "Sugar," their latest collaboration, is a characteristically laid-back set of songs performed in a style essentially timeless.

The album also contains two duets. The one with Earl Coleman re-creates his biggest hit, *This Isn't Always*, which he originally recorded for Dial with Charlie Parker in 1947. In *Side by Side* Jones duets with Della Griffin, whose appearance here is somewhat baffling. There is nothing remarkable about her hoarse, failing voice, which only detracts from the overall quality of the album. Coleman's baritone voice is still deep in the basement and remarkably intact, but the track with him is the only one on which Jones seems uncomfortable, probably because the song is in an awkward key for her. The studio where the album was recorded has a certain amount of natural echo, but there's some added reverb that I find distracting. C.A.



This Month's

Compact Disc Specials



ATL 91208
Virginia
12⁹⁹ Per CD

Also Available at \$12.99 per CD:
 BERNSTEIN: West Side Story Dances, On the Town, Gershwin: Rhapsody in Blue, American In Paris-Edo DeWaart (ATL 91431)
 TCHAIKOVSKY: Piano Cta. No.1, Concert Fantasy-Mikhail Pletnev (ATL 91190)
 Folk Music Around The World-Swingle Singers (ATL 91207)
 The American Piano Sonata Vol.1: Copland, Ives, Corlier, Barber-Peter Lawson (ATL 91163)
 MUSSORGSKY: Pictures At An Exhibition, Borodin: Polovtsian Dances-Mackerras (ATL 91174)

Receivers



Sherwood RA-1140 Stereo Receiver with Surround Sound
 • 25 watts per channel • Matrix surround sound • Video sound input • Digital readout • Quartz locked AM/FM tuner with 24-presets • LED power indicators • Headphone jack
 Our Low Price **\$99⁹⁵** (SHE RA1140)

Sherwood RA-1142
 • 50 watts/channel, surround sound . . . **\$129⁹⁵**

Technics SA-GX100
 • 40 watts/channel, remote . . . **\$169⁹⁵**

Technics SA-GX300
 • 60 watts/channel, EQ, remote . . . **\$219⁹⁵**

Sherwood RV-1340R
 • 100 watts/channel, surround . . . **\$279⁹⁵**

Technics SA-GX500
 • A/V, 80 watts/channel, surround . . . **\$299⁹⁵**

JVC RX-803VBK
 • A/V, 120 watts/channel . . . **\$349⁹⁵**

Compact Disc Players



Technics SL-PG300 Remote Compact Disc Player
 • MASH 1-bit digital-to-analog converter • Digital servo system • Peak level search • 30 key remote • 20-track programming • Edit guide • Headphone output with volume control
 Our Low Price **\$159⁹⁵** (TEC SLPG300)

Sharp DX-200
 • 3-beam laser pick-up . . . **\$99⁹⁵**

Sharp DXR-250
 • 2X sampling, remote . . . **\$119⁹⁵**

Teac PD-365
 • 4 X oversampling, remote . . . **\$129⁹⁵**

Technics SL-PG100
 • MASH D/A converter, 20-track pig . . . **\$139⁹⁵**

Teac AD-3
 • CD/Cassette Combo, remote . . . **\$229⁹⁵**

Technics SL-P550
 • MASH D/A, 4x oversampling, remote . . . **\$249⁹⁵**

Compact Disc Changers



Technics SL-PC25 Remote Rotary Compact Disc Changer
 • 5-disc rotary permits changing discs even when one is in play • MASH D/A converter for accurate sound • 4 X oversampling • 32-track programming • Wireless remote
 Our Low Price **\$199⁹⁵** (TEC SLPC25)

Technics SL-PC15
 • 5-disc rotary, remote . . . **\$159⁹⁵**

Teac PD-D400
 • 5-disc, remote . . . **\$179⁹⁵**

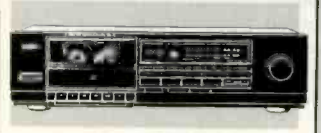
Technics SL-PC33
 • 5-disc rotary, remote . . . **\$249⁹⁵**

Technics SL-PC45
 • 5-disc rotary, remote . . . **\$269⁹⁵**

JVC XL-M505
 • 6 disc magazine + 1 single, remote . . . **CALL**

JVC XL-M705
 • 6-disc mag. + 1 single, 8 x oversampling . . . **CALL**

Cassette Decks



Teac V-285CHX Stereo Cassette Deck
 • Dolby B and C noise reduction • Dolby HX Pro headroom extension system • Bias fine tuning • LED peak level meter • 3-digit tape counter • Black finish
 Our Low Price **\$84⁹⁵** (TEA V285CHX)

Teac V-480
 • Dolby B/C/HX-Pro, fine bias . . . **\$99⁹⁵**

Teac R-455CHX
 • Auto-Reverse, Dolby B/C/HX-Pro . . . **\$124⁹⁵**

Teac AD1
 • CD/Cassette, Dolby B, 16-track mem . . . **\$169⁹⁵**

Technics RS-BR465
 • Auto-Reverse, Dolby B/C/HX-Pro . . . **\$189⁹⁵**

Sherwood DS-700OR
 • 3-head, Dolby B/C/HX-Pro . . . **\$199⁹⁵**

Teac V-970X
 • 3-head/3-motor, dbx, Dolby B/C . . . **\$459⁹⁵**

Dual Cassette Decks



Teac W-355 Double Cassette Deck
 • Normal and high speed dubbing • Dolby B noise reduction • LED peak level meters • Continuous playback • Auto tape selector on deck-1 • Tape counter • Black finish
 Our Low Price **\$99⁹⁵** (TEA W355)

Teac W-450R
 • Dolby B/C, auto-reverse . . . **\$149⁹⁵**

Technics RS-TR212
 • Deck #1 A/R, Dolby B/C . . . **\$159⁹⁵**

Technics RS-TR313
 • Dolby B/C/HX-Pro, auto-reverse . . . **\$199⁹⁵**

Technics RS-TR355
 • Dolby B/C/HX-Pro . . . **\$219⁹⁵**

Technics RS-TR555
 • Auto-reverse, Dolby B/C/HX-Pro, dbx . . . **\$339⁹⁵**

Teac W-995RX
 • Dual reverse, Dolby B/C, dbx . . . **\$499⁹⁵**

Turntables/Cartridges



Technics SL-QD33 Quartz Direct-Drive Turntable
 • Fully-automatic • 2-motors • Auto disc size selection • Low-mass tonearm accepts P-Mount cartridge • Illuminated strobe • Front panel controls • Black finish
 Our Low Price **\$149⁹⁵** (TEC SLQD33K)

Stanton 500AL
 • Pro Disco Cartridge, spherical stylus . . . **\$19⁹⁵**

Audio Technica AT-231LP
 • Universal mount Cartridge . . . **\$39⁹⁵**

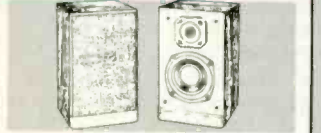
Stanton 680EL
 • Disco Cartridge, w/extra stylus . . . **\$54⁹⁵**

Gemini XL-BD10
 • Semi-Auto Turntable, bell, pitch . . . **\$89⁹⁵**

Technics SL-BD22K
 • Bell Drive Turntable, semi-auto, pitch . . . **\$99⁹⁵**

Shure V15-VMR
 • Cartridge, micro-ridge stylus . . . **\$139⁹⁵**

Home Speakers



Pinnacle PN5 + Two Way Speaker System
 • Patented diaduct port for superb bass response from a very compact enclosure • 5 1/4" polypropylene woofer • 50 watt power handling • Beautiful oak trim
 Our Low Price **\$159⁹⁵ Pair** (PIN PN5 + /OAK)

Advent Subwoofer
 • Mini-size, 5.25" woofer . . . Each **\$99⁹⁵**

Technics SB-L40
 • 2-way Speakers, 10" woofer . . . Pair **\$99⁹⁵**

Technics SB-L60
 • 3-way Speakers, 10" woofer . . . Pair **\$129⁹⁵**

Teac ST-X5
 • 3-Way Floor standing, 10" woofer . . . Pair **\$199⁹⁵**

Pinnacle PN8 + /Oak
 • 2-Way, 8" woofer, diaduct . . . Pair **\$349⁹⁵**

Base AM3
 • Acoustimass 3-piece speaker system . . . **\$399⁹⁵**

Home Speakers



Bose 301 Series II Direct/Reflecting Speakers
 • 2-way ported bookshelf speakers • 8-inch woofer with two 3-inch tweeters in Free Space Array • Dual-frequency crossover • Woodgrain vinyl veneer
 Our Low Price **\$299⁹⁵ Pair** (BOS 301-II)

Audio Source LS-1
 • Micro 2-way system, . . . Pair **\$119⁹⁵**

Recaton W-100
 • Cardless Speakers, powered . . . Pair **\$169⁹⁵**

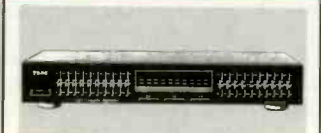
Technics SB-L80
 • 3-way Speakers, 12" woofer . . . Pair **\$169⁹⁵**

Bose 201-II
 • Direct/Reflecting Speaker System . . . Pair **\$199⁹⁵**

Cerwin Vega AT-10
 • Speakers, 3-way, 10" woofer . . . Pair **\$359⁹⁵**

Cerwin Vega AT-15
 • 3-way, 15" woofer, 400 watts . . . Pair **\$659⁹⁵**

Equalizers/DJ Equipment



Teac EQA-6 Stereo 10-Band Equalizer
 • Separate illuminated slide controls for each channel • 12 db boost/cut • Switchable EQ defeat • Tape monitor • Peak program level meter • Black finish
 Our Low Price **\$69⁹⁵** (TEA EQA-6)

Teac EQA-22
 • Equalizer/Analyzer, 10 bands/channel . . . **\$99⁹⁵**

Gemini PMX-100
 • Mixer/Preamp, 3-phono/3-line . . . **\$139⁹⁵**

Gemini XL-1800Q
 • Pro Turntable, manual pitch . . . **\$299⁹⁵**

Audio Source EQ-10
 • Graphic EQ/Analyzer, pink-noise . . . **\$349⁹⁵**

Gemini PDM-5000
 • Digital Sampling Mixer/Equalizer . . . **\$399⁹⁵**

Disco Lights
 • For Info On Our Large Selection . . . **CALL**

Antennas/Remotes



Terk 9825 (pi2) Deluxe Indoor FM Antenna
 • Increases FM stereo reception and sound quality • Adjustable gain control • Scholitz 38db high gain low noise amplifier • Patented Gamma-loop technology • Omnidirectional or Directional
 Our Low Price **\$79⁹⁵** (TRK 9825)

Memorex AV4
 • Preprogrammed Remote, for 4 units . . . **\$39⁹⁵**

Parsec LS4
 • Electronic FM Antenna, Scholitz circuit . . . **\$39⁹⁵**

Terk 9425
 • AM/FM Wedge Amplified Antenna . . . **\$59⁹⁵**

One For All URC-4000
 • Universal Remote, pre-programmed . . . **\$64⁹⁵**

Parsec ARC
 • AM/FM Electronic Antenna . . . **\$69⁹⁵**

Memorex CPB-Turbo
 • Universal remote control, 156 commands . . . **\$89⁹⁵**



24 HOUR TOLL-FREE 1-800-221-8180
 7 DAYS A WEEK

J&R Music World, Dept. SR0691, 59-50 Queens-Midtown Expressway, Maspeth, Queens, NY 11378

Outside U.S.A Call:
 1-718-417-3737





Super Specials!

VHS Video Movie Specials



16⁹⁵ Each VHS

- Also Available:**
- Aswad—Always Wicked . . . \$14⁹⁵
 - Chick Corea & Akoustic band: Alive . . . \$16⁹⁵
 - Bob Dylan & Tom Petty: Hard to Handle . . . \$14⁹⁵
 - Dead Kennedy's: Live . . . \$16⁹⁵
 - Free: Best Of . . . \$16⁹⁵
 - Marvin Gaye—Greatest Hits Live . . . \$16⁹⁵
 - Mick Jagger—Running Out Of Luck . . . \$14⁹⁵
 - Paul McCartney: Give My Regards To Broad Street . . . \$14⁹⁵
 - Gary Moore & The Midnight Blues Band . . . \$16⁹⁵
 - Making Of "Will The Circle Be Unbroken Pt 2" . . . \$14⁹⁵
 - MICA Paris . . . \$12⁹⁵
 - The Police: Around The World . . . \$16⁹⁵
 - Righteous Bros.: Unchained Melody . . . \$16⁹⁵
 - Style Council: Showbiz Live . . . \$16⁹⁵
 - TODD Rundgren: Live In Japan '90 . . . \$16⁹⁵
 - Traffic: Live In Santa Monica . . . \$16⁹⁵
 - Thin Lizzy—Dedication . . . \$16⁹⁵
 - Turners: Happy Together . . . \$16⁹⁵
 - Neil Young & Crazyhorse: Ragged Glory . . . \$12⁹⁵

Audio/Video Accessories



Target BTI Tilt & Swivel Speaker Wall Bracket

• Tilts 18-degrees up or down • Swivels left or right • Holds 22lbs with movement & up to 50lbs safely

- Our Low Price **\$29⁹⁵ Pair** (TGT BTI)
- Audioquest Feet • Sorbothane shock absorbers, set of 4 . . . \$34⁹⁵
- Goldstands 20" • Speaker Stands, 20" high . . . Pair \$69⁹⁵
- Audio Source SS-One II • Surround Sound Amp, Dolby . . . \$129⁹⁵
- JVC CG-V60 • Character/Filter Generator . . . \$179⁹⁵
- Elite EL-80 • A/V Cabinet, oak, 51.25" high . . . \$199⁹⁵
- Nitty Gritty 1.5FI Mark II • Record Cleaning Machine, semi-auto . . . \$389⁹⁵

Video Recorders



Toshiba M-441 4-Head VHS Video Recorder
 • 181-ch cable capable tuner • Quick-access system • Digital tracking • 1-year/8-event timer • Wireless remote

- Our Low Price **\$299⁹⁵** (TOS M441)
- ShinTom VCR-550 • VHS Video recorder, remote . . . \$179⁹⁵
- Samsung VR-3700 • VHS, on-screen, remote . . . \$199⁹⁵
- Sharp VC-A630 • VHS Recorder, 4-head, remote . . . \$249⁹⁵
- Panasonic PV-4160 • Hi-Fi VHS Recorder, 4-head . . . \$379⁹⁵
- JVC HR-D780 • Hi-Fi Stereo VHS Recorder, remote . . . \$399⁹⁵
- RCA VR-700HF • 5-VHS Hi-Fi Video Recorder, remote . . . \$499⁹⁵

Camcorders/Televisions



Samsung VM-3105 13 Inch Color Monitor/VCR Combination
 • 155-channel cable ready • 1-touch recording • Full loading/quick start • On-screen display • 1-year/8-event programmable timer

- Our Low Price **\$399⁹⁵** (SAM VM3105)
- Sharp VL-1310 • JetZoom VHS Camcorder, 12X zoom . . . \$799⁹⁵
- Sony CCD-TR6 • 8mm Mini Camcorder, 8:1 zoom, 4-lux . . . CALL
- Sony KV-27XBR50 • 27" Trinitron XBR Monitor/Receiver . . . CALL
- Toshiba CF-3060 • 30" Stereo Monitor, 700-line res . . . CALL
- Panasonic PV-40 • VHS-C Camcorder, 8x zoom, 7 lux . . . CALL
- JVC GR-5707 • 5-VHS Hi-Fi Camcorder, 8:1 zoom, 8-lux . . . CALL

Cameras & Binoculars



Olympus "Stylus" Ultra-Compact 35mm Camera
 • 35mm Olympus lens • Auto-5 red eye reduction flash • Fully automatic operation • Advanced 100-step autofocus system w/macro focusing • Built-in multi-mode flash • ESP metering system

- Our Low Price **\$149⁹⁵** (OLM STYLUS)
- Bushnell 13-7710 • Spectator Binocular, wide, 10 x 50 . . . \$74⁹⁵
- Nikon One Touch 100 • Compact 35mm Camera, fully-auto . . . \$139⁹⁵
- Minolta Dual C • Freedoma Autolocus Camera . . . \$139⁹⁵
- Minolta Freedom 90 • 35mm Automatic Camera, 38.90mm lens . . . \$219⁹⁵
- Canon Photura • Point & Shoot Camera, 1-hand operation . . . \$279⁹⁵
- Nikon N-6006 • 35mm SLR, auto-focus . . . **IN STOCK**

Portables



Sony WM-F2041 AM/FM/Cassette Recording Walkman

• Stereo recording/play • Includes one-point stereo mic • Adjustable playback speed control • Cue/review • Includes belt-clip • belt-clip & headphones • Requires 2 X AA batteries

- Our Low Price **\$79⁹⁵** (SON WMF2041)
- Sony SRF-4 • Sports FM Walkman, water-resistant . . . \$29⁹⁵
- Panasonic RX-FS460 • AM/FM/Cassette Stereo . . . \$69⁹⁵
- Panasonic RQ-382 • Cassette Recorder, voice activated . . . \$99⁹⁵
- Denon DCP-50 • CD Player, 4 X oversampling, remote . . . \$219⁹⁵
- Sony CFD-454 • AM/FM/Cassette/CD 3 Piece Stereo . . . \$219⁹⁵
- Sony ICF-Pro80 • World Band Radio, quartz tuner . . . CALL

Headphones



Sony MDR-V6 Digital Ready Headphones

• Digital-ready • Dynamic closed-ear monitor design • Compact folding headband • Oval earpads with 40mm drivers • One-sided litz cord with uni-match plug • Response 5-30KHz

- Our Low Price **\$79⁹⁵** (SON MDRV6)
- Audio Technica ATH-M3X • Closed back Headphones . . . \$24⁹⁵
- Memorex EDM-110 • Open-air Headphones, dual-plugs . . . \$34⁹⁵
- Sony MDR-E575 • Earbud Headphones, digital-ready . . . \$44⁹⁵
- Koss JCK/200 • Cordless Stereophones, w/transmitter . . . \$89⁹⁵
- Sony SRS-170 • Active Speaker System, 15 watts each/ear . . . \$159⁹⁵
- Sennheiser HD-250 • Audiophile Headphones, closed ear . . . \$169⁹⁵

Telephones



AT&T 1323 Telephone Answering Machine

• Dual cassette • LED message counter • Time/day stamp • Voice menu • Call intercept • Personal memo • Toll saver • Call screening • Remote

- Our Low Price **\$99⁹⁵** (ATT 1323)
- Panasonic KX-T2395 • Answering Machine & Phone, remote . . . \$79⁹⁵
- Southwestern Bell 650 MarkII • Cordless phone, 1000 ft range . . . \$79⁹⁵
- Sony TAM-50 • Answering Machine, beepless remote . . . \$99⁹⁵
- Panasonic KX-T3910 • Cordless Phone, 10 channel . . . \$139⁹⁵
- AT&T 5500 • Cordless Phone, 9# mem., dual keypad . . . \$159⁹⁵
- Sony SPP-D15 • 2-Line Cordless Phone, speaker/phone . . . \$199⁹⁵

Audio/Video Blank Tape



Scotch T-160EG + High Grade VHS Video Tape

• Famous Scotch tape dependability • EG+ high grade video tape provides finer colors, detail and resolution • Great for all your recording needs

- Our Low Price **\$39⁹⁵ 10-pack** (SCO T160EG+)
- TDK D-90 • Normal bias low-noise cassette tape 10-Pack . . . \$9⁹⁵
- TDK SA-90 • High Bias Audio Cassettes . . . 10-Pack \$17⁹⁵
- Fuji FR11 Metal 90 • 90 minute metal tapes . . . 10-Pack \$18⁹⁵
- Sony SR-100 • Metal Audio Cassettes . . . 10-Pack \$22⁹⁵
- Maxell XL-II590 • High Bias Cassettes . . . 10-Pack \$23⁹⁵
- Sony P6-120 • 8mm Metal FormU Video Tape 10-Pack \$49⁹⁵

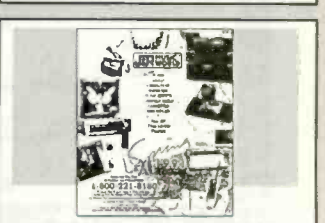
CD/LP/Tape Storage



Leslie Dame CD-576/KD Compact Disc Storage Unit

• Crafted from solid oak • Holds 576 CDs or 345 cassettes in any combination (also hold 56 video tapes on top 2 tiers) • Includes 8 oak dividers • Oiled finish

- Our Low Price **\$139⁹⁵** (LD CD576KD)
- Creative Point CD-36 • CD Storage, holds 36 . . . \$11⁹⁵
- Leslie Dame LP-140 • Record Storage Rack, holds 140 LPs . . . \$19⁹⁵
- Product Plus CD-84 • CD Storage, oak, holds 84 . . . \$39⁹⁵
- Creative Point CD-4800 • 48 CD Storage Cabinet . . . \$39⁹⁵
- Kalmar 479 • Cassette Cabinet, oak, holds 30 . . . \$39⁹⁵
- Leslie Dame CD-260KD • CD/Cassette/Video Storage, 260 CDs . . . \$69⁸⁸



FREE CATALOGUE

For a FREE catalogue call toll-free 800-221-8180, or Write: J&R Music World Department SR0691 59-50 Queens-Midtown Expressway Maspeth, NY 11378

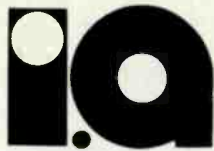
NAME _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____

TO ORDER BY MAIL:

SEND MONEY ORDER, CERTIFIED OR CASHIER'S CHECK, MASTERCARD, VISA, AMERICAN EXPRESS or DISCOVER CARD (include Interbank No, expiration date and signature.) TO: J&R MUSIC WORLD, DEPT. SR0691, 59-50 QUEENS-MIDTOWN EXPRESSWAY, MASPETH, QUEENS, NY 11378. Personal and business checks must clear our Authorization Center before processing. Shipping, Handling & Insurance Charge is 5% of Total Order with a \$4.95 minimum. (Canadian Orders Add 15% Shipping, with a \$9.95 minimum charge.) For shipments by air, please double these charges. \$25 MINIMUM ORDER. DO NOT SEND CASH. SORRY, NO C.O.D.'s. NEW YORK RESIDENTS PLEASE ADD SALES TAX. ALL MERCHANDISE SHIPPED BRAND NEW, FACTORY FRESH, AND 100% GUARANTEED. Copyright 1991 J&R Music World



SAVE MONEY, TIME AND FREIGHT ON FAMOUS BRAND STEREO EQUIPMENT



illinois audio

(800) 621-8042 (312) 664-0020
Hours: Monday thru Saturday 9-5

12 E. DELAWARE PLACE • CHICAGO, IL 60611

LOUDSPEAKERS



TECHNICS SBL-40
Powerful
Loudspeaker System

- Linear Phase 2-Way System • Large Diam. 10" Woofer • Anti-resonance cabinet
- Attractive Woodgrain Finish

CALL FOR PRICE

- JENSEN 3120** 12" 3 way List 139.95 **SALE \$74.95**
- WHARFEDALE DIAMOND II** 4 1/2" 2 way List 150.00 **SALE \$90.00**
- JBL 3800** 8" 3 way List 279.00 **SALE \$149.00**
- TECHNICS SBL-60** 10" 3-way bass reflex **CALL FOR PRICE**
- JBL 62T** 6" 2 way List 115.00 **SALE \$69.95**

PORTABLES



SONY WM-F2068
AM/FM Stereo Radio
Cassette player

- Dolby B NR • Auto-reverse with direction and mode selectors • Variable Mega Bass • Ultra-light MDR headphones

List \$89.95 **SALE \$54.95**

SONY D-11 Discman Port. CD Player List 179.95 **SALE \$129.95**

SONY CFD-50 AM/FM/CD/CASS. w/mic mixing List 199.95 **SALE \$159.95**

PANASONIC RX-D520 CD/CASS auto/rev. digital tuning List 279.95 **SALE \$219.95**

JVC PCX-200 AM/FM/CD/CASS. 3-pc. List 399.95 **SALE \$275.00**

TECHNICS SLXP-300 Port. CD w/ remote **CALL FOR PRICE**

AUTO



SHERWOOD XR-1604
Car Stereo with Cassette Deck

- High Power • Removable DIN • Dolby B & C • Auto Reverse

List \$429.95 **SALE \$199.95**

JBL T-900 12" 3 way List 199.95 **SALE \$79.95**

SHERWOOD SCP-1002BP 240 watt tri-mode amp List 279.95 **SALE \$179.95**

PANASONIC CGE-850 AM/FM/CD Player Req. Amp List 700.00 **SALE \$330.00**

CASSETTE DECKS



TEAC W-990RX
Double Cassette Deck

- Auto reverse • Full function wireless remote • Dolby B, C, dbx N.R. • One touch dubbing

List \$779.00 **SALE \$459.95**

TEAC V285CHX List 145.95 **SALE \$89.95**
Dolby B/C HX Pro

TEAC W450R List 289.95 **SALE \$159.95**
Dubbing A/R, Dolby B & C

TECHNICS RSTR-155 List 189.95 **SALE \$159.95**
auto-rev. D Deck #1

JVC TDR-431 List **CALL FOR PRICE**
Dolby B/C HX-Pro Auto rev

SHERWOOD DD-1230 List 289.95 **SALE \$189.95**
Dolby B/C Dual auto rev. decks

JVC TD-W505 List **CALL FOR PRICE**
Twin Hi-Fi auto reverse, Dolby HX-Pro, B/C N.R

TEAC V-970X List 799.95 **SALE \$449.00**
Dolby HX-Pro, 3 HD remote, DBX

AUDIO TAPE

MAXELL XLII 100 High Bias 10 for \$22.50

MAXELL R-60DM Digital tape \$6.99

MAXELL MXS-90 Metal Bias 10 for \$27.90

TDK SAX-90 High-Bias 10 for \$19.90

SONY SR-90 metal cass 10 for \$19.90

TDK T-120 EHG 10 for \$34.90

HEADPHONES

SONY MDR-CD6 List \$119.95 Digital Stereo Headphones **SALE \$69.95**

AKG K-55 List 50.00 **SALE \$33.00**

AZDEN DSR18 List 69.95 **SALE \$39.95**

SENNHEISER HD-490 List 119.00 **SALE \$89.95**

KOSS JCK-200 Wireless headphone system List 150.00 **SALE \$89.95**

SONY MDR 1F5K Cordless Headphones List 199.95 **SALE \$99.95**

RECEIVERS



TECHNICS SA-GX500
Quartz Synthesized
AM/FM Stereo Receiver

- 160 W (80x2) front; 30 W (15x2) rear Amp
- Dolby Surround System • 49 key wireless A/V remote • 24 preset • Parametric Equalizer • Preset EQ curve memory

CALL FOR PRICE

TECHNICS SA-GX700 100 watt ch., digital tuning **CALL FOR PRICE**

SHERWOOD RV-1340R 100 watt Ch. fr. remote 20 watt Ch. rear, Dolby surround List 339.95 **SALE \$239.95**

KENWOOD KR-8020 Front 100 watt ch., rear 20 watt ch., learning remote **CALL FOR PRICE**

TECHNICS SA-GX 100 40 watt ch., A/V remote control **CALL FOR PRICE**

JVC RX-703BK 110 Ch. fr. Prog remote 12 ch rear **CALL FOR PRICE**

JVC RX-903VBK 100 watt Ch. learning remote digital delay, Dolby Pro-logic **CALL FOR PRICE**

VIDEO



PIONEER CLD-1080
Laserdisc/CD Player

- All Disc Talents • High Quality Picture
- High Quality Sound • 8X Oversampling
- 20 bit compact OBC • Remote Control

CALL FOR PRICE

JVC HRD-780 2HD, HiFi, Remote **CALL FOR PRICE**

SONY SLV-575 Remote Control VHS HiFi, Videocassette recorder **CALL FOR PRICE**

SONY MDP-333 Remote Multi-disc player **CALL FOR PRICE**

AZDEN AVS-20 Video switcher w/mic mixing List 139.95 **SALE \$99.95**

AUDIO-SOURCE SS-2 Remote Dolby Surround Sound Amp **CALL FOR PRICE**

JVC-HRS5500 SVHS, HiFi, 4 HD List 1099.95 **SALE \$599.95**

TECHNICS SU-AV55 Remote, A/V AMP, digital Dolby Surround **CALL FOR PRICE**

CD PLAYERS



TECHNICS SL-PG300
Programmable
Compact Disc Player

- A new generation of CD player using the MASH Digital-to-Analog converter
- 10 key direct access on front panel & remote control

CALL FOR PRICE

SHERWOOD CD-1192 8x Oversampling, remote **CALL FOR PRICE**

TECHNICS SL-PS50 1 bit Mash **CALL FOR PRICE**

JVC XLZ-431 8x Oversampling, 20bit DAC **CALL FOR PRICE**

TECHNICS SL-PG100 Mash digital to analog converter **CALL FOR PRICE**

TEAC AD-1 CD/Cass combo, Dolby B List 299.95 **SALE \$189.95**

SHERWOOD CDM-1260R 6-Disc Changer, 4x Oversampling remote List 549.95 **SALE \$189.95**

TECHNICS SL-PC33 1 bit, Mash, front loading remote **CALL FOR PRICE**

JVC XLM-403 6+1 CD Changer 18 bit DAC **CALL FOR PRICE**

PIONEER CLD-980 CD/CLD CDV Combo player, remote List 500.00 **SALE \$369.95**

TURNTABLES



TECHNICS SL-GD33
Quartz Direct Drive
Turntable

- Automatic dual motor system
- Gimbals suspension tone arm

CALL FOR PRICE

TECHNICS SL 1200 II Quartz-locked direct drive manual turntable with tone arm **CALL FOR PRICE**

SHURE M-111HE List 149.95 **SALE \$57.00**

AUDIO TECHNICA AT 155LC Linear contact, Spec buy List 299.95 **SALE \$119.95**

MIDI SYSTEMS



PANASONIC SC-CH9
Lifestyle Component System

- CD player • Quartz synthesized AM/FM stereo tuner w/20 presets • 5 band gr. eq. • Dbl. auto-rev. cass. deck • 3 way spkr. sys. • 35 key full remote

CALL FOR PRICE

SONY MHC-1500 Hi-fi mini stereo system Amplifier, tuner, Dbl. auto reverse cassette deck, CD player **CALL FOR PRICE**

SANSUI M-590 Midi system w/5 Disc Carousel C.B. changer List 999.95 **SALE \$599.95**



illinois audio

12 E. Delaware Pl., Chicago 60611



NOTE: This is just a partial listing of our extensive inventory. Please call for quantities on additional items or to request a free price list.



Prices in this ad are for mail-order only. Freight charges not included in prices. All merchandise shipped brand new, factory fresh with full warranty. Not responsible for typographical errors. Prices and availability subject to change.

RETURN POLICY: Equipment received within the first 14 days from date of shipment may be returned to us for repair or replacement at no additional charge. After the 14 day period it is the manufacturer's responsibility to repair or replace an item through their U.S. warranty. NOTE: Certain manufacturers require all returns to be processed directly through them and not through us so please ask when making your purchase. All cancellations are subject to a service charge. *Does not include shipping fees

Recent discs and
cassettes reviewed by

Robert Ackart, Richard Freed, David Hall,
Eric Salzman, and David Patrick Stearns

BACH: Clavier Concertos Nos. 1-7 (BWV 1052-1058). András Schiff (piano), Thierry Fischer, Catherine Tournaire-Stutz (flute, in BWV 1057); Chamber Orchestra of Europe, András Schiff cond. LONDON © 425 676-2 two CD's (108 min).

Performance: *Spirited*
Recording: *Attractive chamber sound*

Bach's keyboard concertos all seem to have been produced for a musical club that met every week in a Leipzig coffee house. Prolific as he was, Bach hardly had time left over from his busy church duties to produce originals for these soirées, so he contributed a lot of arrangements. It is thought that all seven keyboard concertos are reworked versions of earlier music, some of it now lost. Bach lovers will recognize a "Brandenburg" Concerto and two familiar violin concertos in the relatively unfamiliar keyboard versions. In short, this is coffee-house music, quite a different sort of musicmaking from that one associates with the formality and ritual of modern concert life. The performances here are not "authentic" Back-to-Bach Bach played on old instruments with musicological treatises in hand, but they have an authenticity derived from their spirit, good humor, and good musical sense.

In matters of style, András Schiff is basically a Classicist. His phrasing, use of crescendos and diminuendos, up-beat lifts and slightly delayed downbeats, even his crisp piano ornaments and cadenzas derive primarily from late eighteenth-century or even early nineteenth-century traditions. But they also fit old Bach—perhaps in the way that one of his talented and progressive sons might have played the old man's music. The young Chamber Orchestra of Europe—strings mostly, sometimes tutti and sometimes solo—catches this spirit. Even in the post-Glenn Gould heyday of early instruments, Bach-on-the-piano is still very much alive. *E.S.*

BOITO: Mefistofele. Samuel Ramey (bass), Mefistofele; Plácido Domingo

Explanation of Symbols

- Ⓢ = Tape cassette
- = LP record
- Ⓢ = Compact disc (timings are to the nearest minute)

(tenor), Faust; Eva Marton (soprano), Margherita/Elena; Sergio Tedesco (tenor), Wagner; Tamara Takács (mezzo-soprano), Marta; others. Hungaroton Opera Chorus; Hungarian State Orchestra, Giuseppe Patanè cond. SONY CLASSICAL © S2K 44983 two CD's (139 min), © S2T 44983.

Performance: *Estimable*
Recording: *Excellent*

Gounod's *Faust*, the work to which Boito's *Mefistofele* is inevitably compared, is essentially a domestic drama with supernatural trappings; the plot focuses on the misfortune of Marguerite, and on her salvation, which, in turn, redeems Faust. Boito's canvas is vaster and contains two stories, one of Margherita and the other of Helen of Troy (Elena), each representing different aspects of Faust's desire. And in addition to the two love plots, there is the study of Mefistofele's "evil," which is far more nuanced than in Gounod's opera. Then there is the music. Boito's score offers greater invention than Gounod's, highly original orchestration, and telling subtlety of effect. And yet, somehow, *Mefistofele* does not really "work."

The new Sony Classical recording, however, does much to overcome some of the problems inherent in *Mefistofele*. A great measure of its effectiveness derives from the detailed, careful, and at the same time impassioned conducting of Giuseppe Patanè, who regrettably did not live to hear the finished tape. Leading the Hungaroton Opera Chorus and the Hungarian State Symphony, he conducts with such sweep that Boito's epic concept is largely fulfilled.

Samuel Ramey sings admirably as Mefistofele. His deep, rich, resonant bass is ideal for the "villain" of the piece, and he articulates the text so that Mefistofele's analytical cast of mind is apparent. Eva Marton as Margherita/Elena touchingly conveys the naive frailty of the young girl and, later, discloses with equal effectiveness the amorous and mundane Elena. Plácido Domingo brings to Faust a carefully considered characterization. We believe in his ardor for Margherita, his open desire for Elena, and his deliverance through final self-knowledge. Throughout, he sings with ease, tonal beauty, and musical refinement. The remaining members of the cast are also praiseworthy. *R.A.*

BRAHMS: Piano Trio in A Major, Op. posth. SCHUMANN: Piano Trio No. 1, in D Minor, Op. 63. Trio Fontenay. TELDEC © 44927-2 (65 min).

Performance: *A winner*
Recording: *Excellent*

The A Major Trio, thought to be a very early work by Brahms, has yet to be

authenticated, but the issue seems to be a good deal less controversial than it was only a few years ago, and the work is edging its way out of the "curiosity" bin toward at least the fringes of the repertory. And well it should, for no matter whose name may eventually be affixed to the trio, it certainly merits attention. The themes are rather less distinctive than we might expect from Brahms, but his signature seems to be everywhere, in rhythmic figures and submotifs, and more than occasionally we come across what might be regarded as a sort of bud of a real Brahms tune, not quite ready to open up.

The Fontenay Trio has already recorded Brahms's three known piano trios (Opp. 8, 87, 101) on three very well-received Teldec discs. This new recording of the A Major is a welcome follow-up and a clear winner, more fetching than the one by the Beaux Arts Trio in that group's two-disc Brahms set on Philips or the Trio Pro Arte's record-



Ramey as Mephistopheles

ing on Bis. The Pro Arte is a little grander in its gestures, as if to remind us that the twenty-year-old Brahms would have been more assertive than subtle; it's an interesting view, but the other work on their disc, Brahms's Op. 87 trio, is not a match for the Fontenay or Beaux Arts performances of that work—or for the Fontenay's surpassingly fine reading of the Schumann D Minor Trio on the new recording. The Schumann, together with Teldec's clearly superior sound treatment, would certainly swing the balance for me. *R.F.*

CHAUSSON: Concert in D Major for Violin, Piano, and String Quartet, Op. 21. RAVEL: Trio in A Minor. Joshua Bell (violin); Jean-Yves Thibaudet (piano);

PHOTO: MARC VANAPPELHEM/SONY CLASSICAL

RECEIVERS



PIONEER VSX-9700S

- 125 WATTS PER CHANNEL
- DOLBY PRO LOGIC SURROUND • TOTAL REMOTE

\$656

CARVER HR 722*	386	ONKYO TX-SV50PRO*	CALL
CARVER HR 752*	486	ONKYO TX-SV70PRO*	616
CARVER HR 772*	596	ONKYO TX-SV90PRO*	796
DENON DRA-335RA*	226	ONKYO TX-866*	336
DENON DRA-435RA*	276	PHILIPS FR-50	296
DENON DRA-825RA*	516	PIONEER VSX-3700S	306
DENON AVR-1010*	726	PIONEER VSX-4700S	396
JVC RX-703VBK	296	PIONEER VSX-5700S	466
JVC RX-805VBK	CALL	PIONEER VSX-D1S	886
LUXMAN R114*	396	SONY STR-AV720*	276
LUXMAN R115*	566	SONY STR-AV920*	346
LUXMAN R117*	766	SONY STR-AV1020*	436
MARANTZ RS3559	896	SONY STRD2020*	766
NAD 7240PE*	346	SONY STR-GX60ES*	426
NAD 7000X*	436	YAMAHA RX-350*	186
NAD 7400PE*	796	YAMAHA RX-550*	316
NAKAMICHI RECEIVER 2*	486	YAMAHA RX-V850*	646
NAKAMICHI RECEIVER 1*	726	YAMAHA RX-V1050*	CALL

TAPE DECKS



NAKAMICHI CASSETTE DECK 2*

- DOLBY B & C • AUTO REPEAT
- BIAS FINE TUNE CONTROL
- BI-DIRECTIONAL AUTO SEARCH

\$296

AWA ADF-800	286	NAD 6300*	646
AWA ADF-1000	446	NAKAMICHI CASSETTE 1*	696
AWA ADWX-777	246	NAKAMICHI DRAGON*	CALL
AWA ADWX-888	296	ONKYO TARW-490*	446
CARVER TD 1700*	466	PHILIPS FC-60*	546
CASIO DA-2 PORTABLE DAT*	306	PIONEER CTW-530R	186
DENON DRM-700A*	306	PIONEER CTW-830R	CALL
DENON DRM-800A*	376	SONY TCW-R820*	336
DENON DRW-750A*	286	SONY TDC-3* PORTABLE DAT*	676
DENON DRW-850*	366	SONY DTC-700* DAT*	676
DENON DTR-2000* DAT*	496	YAMAHA KW-900*	496
JVC TDW-803	CALL	YAMAHA KX-630*	376
NAD 6340*	266	YAMAHA KX-930*	CALL

SEPARATES

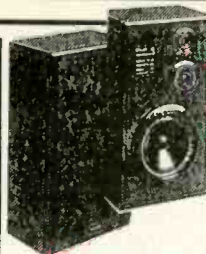


DENON AVC-3020*

- 5 CH. INTEGRATED AMPLIFIER
- DOLBY PRO LOGIC CIRCUITRY

\$776

ADCOM GFA-535*	236	CARVER CM-1090*	436
ADCOM GFA-545MKII*	426	DENON PMA-1060*	426
ADCOM GFA-555MKII*	646	MUSE 100 AUTHORIZED DEALER	
ADCOM GFA-565*	646	NAD 1300*	256
ADCOM GFP-565*	CALL	NAD 1600*	336
ADCOM GTP-500MK II*	516	NAD 2600A*	596
ARAGON 4004MKII*	1346	ONKYO Y-9090 MKII*	586
AUDIOSOURCE SS-THREE	336	PARASOUND HCA-1200	796
CARVER C-5*	396	PHILIPS AV-1000 REFERENCE	636
CARVER CT-6*	396	YAMAHA AX-630*	356
CARVER CT-17*	526	YAMAHA AVX-E300*	636
CARVER TFM-15*	326	YAMAHA AVX-700*	526
CARVER TFM-42*	596	YAMAHA DSP-A700*	896
CARVER TFM-45*	666	YAMAHA MX-1000*	896



SPEAKERS

POLK AUDIO

- 5JR+SII
- 3-WAY BOOKSHELF
- 1" DOME TWEETER
- HANDLES 125 WATTS P/C

\$286

ALL PRICES PER PAIR

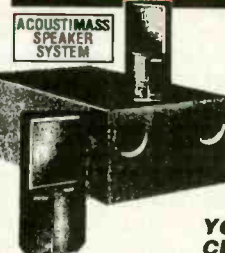
A. RESEARCH 570 .. POWERED		JBL LX44 .. TOP RATEDI	
ALLISON AL115 ..	326	KEF C-35* ..	346
ALLISON AL120 ..	486	KEF C-95* ..	896
AUDIOSOURCE LS2 ..	226	KEF 103.3* ..	1086
BOSE 2.2 ..	186	KEF 104.2* ..	1686
BOSE 4.2 ..	286	KEF 105.3* ..	2786
BOSE 6.2 ..	416	KEF 107* ..	3496
BOSE 10.2 S II ..	846	KLIPSCH KG-3* ..	396
BOSE 901 CONCERTO .. CALL		KLIPSCH KG-4* ..	486
B. ACOUSTIC HD-8** .. CALL		NHT 2 .. CALL	
B. ACOUSTIC HD-7** ..	166	NHT MODEL 1.3 .. TOP RATEDI	
B. ACOUSTIC A70SII** ..	256	OHM 3X0 ..	1156
B. ACOUSTIC T830** ..	376	OHM 4X0 .. CALL	
B. ACOUSTIC T1030** ..	796	PINNACLE PN5+ ..	146
CELESTION 3 & 5 .. IN STOCK		PINNACLE PN8+ .. CALL	
CELESTION DL-12 SII ..	686	POLK AUDIO 4.6 SII ..	226
DESIGN ACOUSTICS PS10 CALL		POLK MONITOR 1CSII ..	546
INFINITY REFERENCE 3* ..	566	POLK MONITOR 12SII ..	686
INFINITY REFERENCE 4* ..	396	POLK AUDIO RTA11TL ..	696
INFINITY REFERENCE 5* ..	526	POLK AUDIO RTA15TL ..	1096
INFINITY KAPPA 8* .. CALL		POLK AUDIO SRS-2.3TL CALL	
INFINITY KAPPA 9* ..	2296	VELODYNE .. IN STOCK	
JBL 2800 .. TOP RATEDI		WHARFEDALE DIAMOND IV CALL	

JBL 3800

- 3-WAY FLOORSTANDING
- TITANIUM TWEETER
- HI-POWER HANDLING
- AUTHORIZED DEALER

\$266

3 PC SATELLITE SYSTEMS



BOSE SE-5 or AM-5

- SUBWOOFER
- SATELLITE SYSTEM
- AUTHORIZED DEALER
- 5 YR MANUFACTURER USA WARRANTY

YOUR CHOICE \$599

A. RESEARCH STC-660 .. CALL		JBL PRO III PLUS ..	596
B. ACOUSTIC SUB SAT 6** ..	396	POLK AUDIO RM3000* ..	616
CELESTION 3** DIMENSION 696		3A TR-80 ..	996
DESIGN ACOUSTICS PS-3 346		V. RESEARCH VSP-230 ..	596
JBL PRO PERFORMER + 246		WHARFEDALE 2130 ..	646

IN WALL SPEAKERS

BOSTON ACOUSTIC 360**

- FLUSH MOUNT IN WALL
- 2-WAY SPEAKERS
- HI POWER HANDLING
- WHITE OR BLACK

\$266

ADS C-300IS* ..	276	INFINITY ERS-800* ..	396
ADS C-400I* ..	376	JBL S3 .. IN STOCK	
BOSTON ACOUSTICS 325** ..	136	JBL S4 .. IN STOCK	
BOSTON ACOUSTICS 350** ..	216	KEF IN WALL* .. CALL	
BOSTON ACOUSTICS 380** ..	186	POLKAUDIO FULL-LINE .. CALL	
INFINITY ERS-500* ..	196	SONANCE IV* ..	366
INFINITY ERS-600* ..	246	NILES .. FULL LINE IN STOCK	

CALL FOR PRODUCTS NOT LISTED



MAIL ORDER MONDAY THRU SATURDAY

201-48

CD PLAYERS



ADCOM GCD-575*

- 16 BIT 4X OVERSAMPLING
- 24 TRACK PROGRAMMING
- FULL FUNCTION REMOTE

\$436

CARVER SDA-450* .. CALL		NAKAMICHI CD PLAYER 3* ..	436
CARVER SDA-490T* ..	496	ONKYO DX-6800* ..	496
DENON DCD-660* ..	196	PHILIPS CD40 .. CALL	
DENON DCD-860* ..	286	PHILIPS LHH500 Reference Series	
DENON DCD-1560* ..	446	SONY CDP-591* .. CALL	
DENON DCD-2560* ..	546	SONY CDP-790* ..	216
DENON DCD-3560* ..	1096	SONY CDP-990* ..	336
JVC XLZ-1010 .. CALL		SONY CDP-209ES* ..	266
LUXMAN DZ-122 ..	396	SONY CDP-X33ES* .. CALL	
MAGNAVOX CDB-624 ..	286	SONY CDP-X55ES* ..	786
NAD 5000 .. CALL		SONY CDP-X77ES* .. CALL	
NAD 5325 ..	236	YAMAHA CDX-550* ..	216
NAKAMICHI CD PLAYER 4* ..	276	YAMAHA CDX-1050* .. CALL	

TURNTABLES



B&O RX-2*

- BELT-DRIVE
- AUTO • 33/45 RPM

\$176

ARISTON O DECK MKII ..	326
AR EB 101 ..	CALL
B&O TX-2* ..	CALL
SONY PS-F7 MKIIB* ..	276
TECHNICS SLB022 ..	116
TECHNICS SL1200 MK II ..	CALL
THORENS TD280 MKII ..	246
THORENS TD320 MKII ..	596

CARTRIDGES IN STOCK

NEW JERSEY RETAIL ONLY

331 Rt. 4 WEST PARAMUS, NJ

HOURS: 6 DAYS A WEEK MON THRU SAT 10-9

201-489-0666

10-DAY MONEY-BACK RETURN POLICY

Returns accepted within 10 days (must be called in for prior authorization) Products must be in original condition. Returns subject to restocking fee, shipping and handling not refundable

NEXT DAY SERVICE

OVERNIGHT ANYWHERE IN THE U.S., PUERTO RICO & USVI

CALL FOR PRICES SE HÁBLA ESPAÑOL

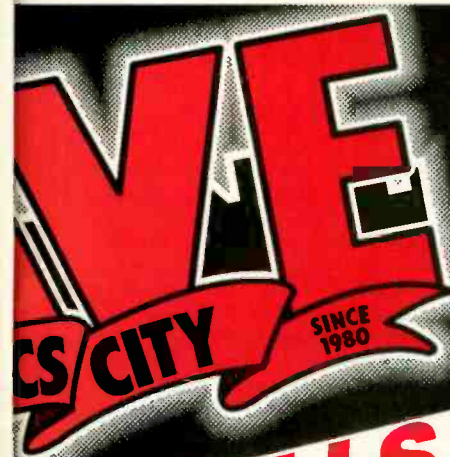
GUARANTEED DELIVERY ON ALL ADVERTISED ITEMS

We do our best to have sufficient inventory on all advertised products. If demand exceeds supply, rain checks will be issued on out of stock merchandise.

30-DAY SPEAKER TRIAL

We want you to be acoustically satisfied. If the speakers you buy don't sound as good as we said they would, then just send them back for an exchange.

PICTURES ARE FOR ILLUSTRATION ONLY. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS. AD REPRESENTS A SMALL



FREE
9-1204
 MONDAY 10:00 AM TO 7 PM

**ASK ABOUT
 6TH AVENUE'S
 EXTENDED WARRANTY**

CD CHANGERS



DENON DCM-450*
 • 6 DISC CD CHANGER
 • 20 BIT 8X OVERSAMPLING
 • 20 TRACK PROGRAM REMOTE
\$346

DENON DCM350	266	PIONEER PDM-530	216
DENON DCM777	466	PIONEER PDM-630	286
JVC XLM3058K	CALL	PIONEER PDM-730	376
LUXMAN DC113	446	SONY CDP-C505*	236
NAD 5060*	CALL	SONY CDP-C515*	CALL
NAD 5170*	546	SONY CDP-C705*	296
NAKAMICHI CD PLAYER 2*	CALL	SONY CDP-C755*	346
ONKYO DXC-310*	266	YAMAHA CDC-615*	CALL
PHILIPS CDC-875	CALL	YAMAHA CDC-805*	376

PORTABLE CD PLAYERS

SONY D-35
 • 8X OVERSAMPLING
 • RECHARGEABLE
\$276

SONY D11	136	DENON DCP-50*	216
SONY D66	186	DENON DCP-100*	286
SONY D180K	216	PHILIPS AZ6804BK	246
SONY D555	346	SONY WMD3 PRO	226
		SONY WMD6C PRO	296

CAMCORDERS

SONY CCD-F77
 • 2 LUX/LOW LIGHT
 • 8:1 ZOOM PALM-SIZE
 • HI-FI STEREO • 8MM
\$796



PANASONIC PV40	866	SONY CCDTR7	826
PANASONIC PV700	656	SONY CCDV101	1076
PANASONIC PV-660	1146	CANON A1MKII DIGITAL	1376
SONY CCDTR4	636	RCA PRO-850 TOP RATED	896
SONY CCDT55	696	JVC GR-AX7U	696

FULL MANUFACTURERS USA WARRANTY

HI-END MINI SYSTEMS



AIWA NSX-800*
 • CD PLAYER • AM/FM • EQ
 • DUAL CASSETTE • REMOTE SYSTEM
\$496

BOSE LIFESTYLE	CALL	PROTON AI3000II	726
DENON DT-400*	296	SANSUI MC-1000	796
DENON G05*	686	SONY FH-5CD*	696
NAKAMICHI RS-1*	196	SONY MHC-5500*	CALL
NAKAMICHI CP-1*	276	YAMAHA YST-C11*	726

CAR STEREO



ALPINE 7516*
 • FULL LOGIC CASSETTE
 • CD SHUTTLE CONTROLLER
\$346

SONY CDXA40RF*
 • 10 CD CHANGER • TRUNK MOUNT
 • PROGRAMMABLE
 • COMPACT SIZE
\$516

HEAD UNITS		CD PLAYERS	
ALPINE 7618*	CALL	ALPINE 5903*	366
ALPINE 7192*	266	ALPINE 5959*	CALL
ALPINE 7292*	306	ALPINE 7801*	426
ALPINE 72945*	436	ALPINE 5957*	436
ALPINE 7380*	286	ALPINE 7915*	446
ALPINE 7390*	466	ALPINE 7909*	766
ALPINE 7516*	366	ALPINE 7909*	766
ALPINE 5700	CALL	CLARION 5670CD	346
BLAUPUNKT VANCOUVER 346		DENON DCC-8970*	536
CLARION 9771	236	KENWOOD KRC-400	CALL
CLARION 3770	296	NAKAMICHI CDC-101*	656
DENON DCR7870*	436	NAKAMICHI CD760*	896
JVC KS-RG3	246	PIONEER CDX-FM45	IN
JVC KS-RG5	296	PIONEER CDX-M50	STOCK
KENWOOD KRC-430*	CALL	SONY CDX-A15*	346
NAKAMICHI RD360*	336	SONY CDX5080*	CALL
NAKAMICHI RD460*	426	SONY CDX7540*	346
NAKAMICHI T0560*	686	SONY CDX5040*	CALL
PIONEER KEH-8100GR	CALL	EQ'S / XOVERS	
SONY XR7130*	CALL	ADS 642CS1*	186
SONY XR7070*	306	AUDID CONTROL 2XS	96
SONY XR7180*	296	CLARION ED711	206
SONY XR7280*	386	PIONEER EQ-6000	CALL
S.STREAM TC303*	296	SONY XEC500*	116
		SONY XE90 MKII*	166
		SOUND STREAM SX2	96

SPEAKERS		AMPLIFIERS	
ADS 300S*	276	ADS PQ-10*	366
ADS 320S*	396	ADS PQ-20*	546
ALPINE 6056AD*	176	ADS PH-15*	496
B. ACOUSTICS 763**	216	ALPINE 3544*	446
B. ACOUSTICS 797**	176	AUTOTEK 7204	476
B. ACOUSTICS 851**	166	ALPHASONIK PMA-2050	CALL
B. ACOUSTICS 861**	176	CARVER M20901*	CALL
B. ACOUSTICS PRO 6.2**	316	CARVER M4080*	366
BAZOOKA T102*	156	HIFONICS Authorized Dealer	
BAZOOKA T82*	CALL	HIFONICS PA202*	246
INFINITY RS693K*	176	NAKAMICHI PA304*	396
JBL T502	106	ORION Authorized Dealer	
MB QUART QM325CS*	386	PIONEER GM3000	CALL
MB QUART QM328CS*	CALL	PPI Authorized Dealer	
NAKAMICHI SP65*	156	R. FOSGATE PUNCH 75HD*	316
ORION XTR WOOFERS	CALL	SONY XM 5540*	376
PIONEER TSA-6995	166	S. STREAM D100II*	266
R.FOSGATE SPP124	276	S. STREAM MC 500*	796
S.STREAM SS10*	176		

TELEVISION

SONY KV32XBR50
 • 32" STEREO MTS
 • XBR TUBE • REMOTE
 • TOP RATED TV!!
\$1596



JVC AV-2780S	626	SONY KV-1380R	326
JVC AV-3150S	996	SONY KV-19T50	356
MITSUBISHI CS2970R	366	SONY KV-20T530	366
MITSUBISHI CS2611R	486	SONY KV-20EXR10	426
MITSUBISHI CS3506R	CALL	SONY KV-27T330	626
MITSUBISHI CS3521R	CALL	SONY KV-27EXR10	676
PHILIPS 13K110	286	SONY KV-27XBR10	756
PHILIPS 27K251	796	SONY KV-27XBR50	736
PHILIPS 31K391	1076	SONY KV-27XBR15	996
PROTON VT331	CALL	SONY KV-32XBR10	1526
RCA F20705DG	TOP RATED	SONY KV-32XBR15	CALL
RCA F27188DG	696	TOSHIBA CF3060K	CALL
SONY KV-13TR24	246	TOSHIBA CF3264K PIP	CALL

FULL MANUFACTURERS USA WARRANTY

PROJECTION TV'S

SHARP VISION XV-100
 • 20-100" LCD PROJECTION
 • VIEW FROM ANY ANGLE
 • LARGEST AUTHORIZED DEALER!!!
LOWEST PRICE EVER!!



MISTUBISHI VS-4504R	2296	RCA 52150CP	CALL
PHILIPS 52LP5253 WALLVISION	CALL	SHARP VISION XV-120	NEW!
PIONEER .NEW LINE IN STOCK		SHARP VISION XV-101	CALL

FULL MANUFACTURERS USA WARRANTY

VCR'S



PANASONIC PV-4160
 • 4 HEAD HI-FI STEREO MTS
 • ON SCREEN PROGRAM
 • TOTAL REMOTE CONTROL
\$306

GEMSTAR VCR PLUS	56	PANASONIC PV-2110	236
JVC HRD-670U	286	PANASONIC PV-4110	266
JVC HRD-875U	396	PANASONIC PV-4060	316
JVC HRD-970U	486	PANASONIC PV5-4990	1196
JVC HRS-5800U	656	PHILIPS VR-660S	546
JVC HRS-C1000U	CALL	RCA VR-520	326
MITSUBISHI HS-U32	336	SONY GV300	CALL
MITSUBISHI HS-U52	426	SONY SLV 58SHF	CALL
MITSUBISHI HS-U63	516	SONY SLV 676UC	496
MITSUBISHI HS-U62	746	SONY SLV RSUC 8-VHS	866
MITSUBISHI HS-U82	CALL	TOSHIBA SV-970 "PIP"	CALL

FULL MANUFACTURERS USA WARRANTY

LASER PLAYERS



PIONEER CLD2080
 • 18 BIT 8X OVERSAMPLING
 • 5 IN 1 COMBO PLAYER
 • MANUFACTURER'S WARRANTY
\$526

DENON LA-3000*	696	PIONEER CLD3080	836
PHILIPS CDV-400	596	RCA LDR-300 1BIT	596
PHILIPS CDV600	NEW 1 BIT	SONY MDP-333*	436
PIONEER CLD1080	376	YAMAHA CDV1700*	596

FULL MANUFACTURERS USA WARRANTY

* PRODUCTS COME WITH 1-YEAR 6TH AVENUE ELECTRONICS WARRANTY ONLY ** 6TH AVE ELECTRONICS IS NOT AN AUTHORIZED DEALER OF BOSTON ACOUSTICS MERCHANDISE AND THE MANUFACTURER'S WARRANTY DOES NOT APPLY

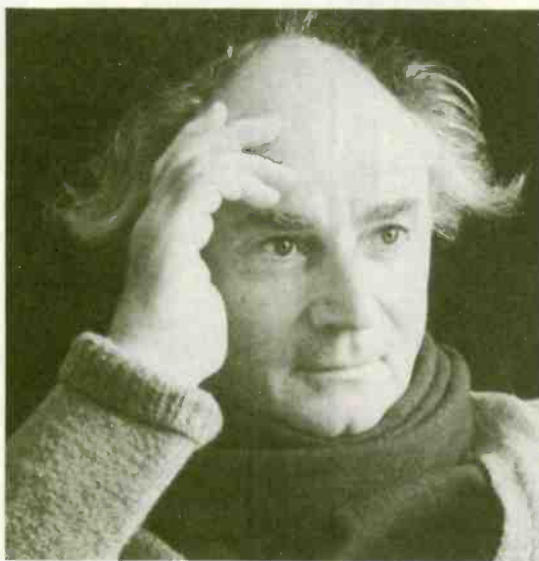
WE ARE PLEASED TO ACCEPT THE MAJOR CREDIT CARDS

MULTI SYSTEM
110/220 PAL/SECAM/NTSC
LARGEST SELECTION AVAILABLE

CUSTOMER SERVICE
201 489-1792
 HOURS: MONDAY - FRIDAY 10 AM - 6 PM
 PLEASE DO NOT CALL THIS NUMBER FOR PRICES

NEW YORK
 RETAIL ONLY
1024 & 1030
6th AVENUE, NY
 HOURS: 7 DAYS A WEEK MON-SAT 10-6:30 SUN 11-5
212-391-2777

Kubelik Goes Home



EARLY in his conducting career, Rafael Kubelik recorded the two middle pieces of Smetana's *Má Vlast* cycle—*The Moldau* and *From Bohemia's Woods and Fields*—with the Czech Philharmonic, but any hope of a complete version at that time was dashed by the 1948 Communist takeover of Czechoslovakia. In exile, Kubelik recorded the cycle several times, but it wasn't until after the Communist regime was overthrown that he had another chance to do it with the Czech Philharmonic.

Kubelik was called out of retirement to lead the orchestra in the two ceremonial concerts opening the 1990 Prague Spring Festival, which featured complete performances of *Má Vlast*, as has been a tradition since the festival began in 1946. It had been forty-two years since Kubelik set foot in his native land, and, as might be expected, emotions ran extraordinarily high both in the audience that packed Prague's cavernous Smetana Hall and among the musicians on stage. The critic Paul Moor described the event in the November 1990 *Musical America*: "If arthritic distress afflicted Kubelik that night, he did not show it. . . . He conducted with exuberantly youthful vigor. . . . The impassioned players gave him their all, in a definitive performance, and one left Smetana Hall aware of having experienced an event both musically and politically significant."

To our good fortune, the Czech Supraphon label has documented the Kubelik performance in superb fashion. What I heard through my playback system fully bears out Moor's reaction. There is no picture-postcard stuff in this reading. The first section, *Vyšehrad (The High Castle)*, is imbued with stunning lyrical-

dramatic grandeur, attaining a special intensity in the poignant epilogue. The ever popular *The Moldau* emerges with pristine freshness—the polyphony of the opening sounds magically pellucid, the polka episode is taken at a true dance tempo, and the rapids section is handled in wonderfully rumbustious fashion. In the third piece, the Amazon warrior Šárka wreaks vengeance on her suitor and his followers. Kubelik's interpretations of this piece have always ranked among his best, but the real prize here is the first-chair clarinet, who imparts an almost human quality to his solo episodes. I have never heard Smetana's special brand of polyphony in *From Bohemia's Woods and Fields* set forth with more poetry and transparency of texture.

The live recording imparts a real "you are there" feeling, with satisfyingly wide lateral imaging. The spaces of Smetana Hall when empty would yield a decidedly discomfiting reverberation, but with a full audience we get a fine acoustic decay that compensates perfectly for fairly close miking of the orchestra. Another advantage of both the microphone placement and the presence of an audience is that one is no longer uncomfortably aware of Smetana's top-heavy, Lisztian-style scoring in the climaxes.

I can imagine a hypothetical sonic ideal for Smetana's masterpiece that may not have been quite achieved here, but I doubt that a more gripping musical realization will be captured on disc anytime soon.

David Hall

SMETANA: *Má Vlast (My Country)*. Czech Philharmonic Orchestra, Rafael Kubelik cond. SUPRAPHON © CDC 11 1208-2 (76 min).

Stephen Isserlis (cello); Takács Quartet. LONDON © 425 860-2 (63 min), © 425 860-4.

Performance: *Richly enjoyable*
Recording: *Very good*

In this appealing performance of the Chausson *Concert*, Joshua Bell's violin tone is voluptuously sweet, Jean-Yves Thibaudet matches its silkiness at the piano, and they mesh beautifully with the Takács Quartet. The performances I've most admired in the past have taken the two outer movements a bit more broadly; I find this team's more flowing pace bracing, especially in the expansive opening movement, which hangs together splendidly. Nothing is rushed, and momentum never sags. The second-movement *Sicilienne* is sheer enchantment, and the slow movement is thrown into especially dramatic relief through the greater contrast with the surrounding ones; its poignant conclusion has never been more touching. I might only wish that Bell had not been positioned so far forward—or, to put it the other way around, that the quartet had been brought more into the picture.

Stephen Isserlis makes a fine partner for Bell and Thibaudet in the Ravel trio; one senses the sort of rapport that suggests another permanent ensemble in the making. In the meantime, this is an absolutely first-rate performance of the work, and the recording itself could hardly be better in terms of vividness, balance, or atmosphere.

R.F.

IVES: *Symphony No. 1, in D Minor; Symphony No. 4.* Chicago Symphony Chorus and Orchestra, Michael Tilson Thomas cond. **AMERICAN SONGS AND HYMNS: *Sweet By and By; Beulah Land; Ye Christian Heralds (Missionary Chant); Jesus, Lover of My Soul (Martyn); Nearer, My God, to Thee (Bethany).*** Richard Webster (organ); Mary Sauer (piano); members of the Chicago Symphony Chorus, Michael Tilson Thomas cond. SONY CLASSICAL © SK 44939 (77 min).

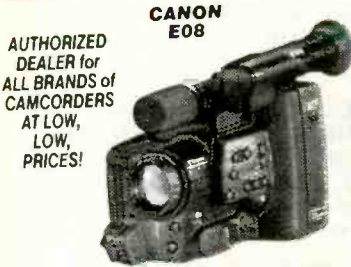
Performance: *Impressive*
Recording: *Mostly very good*

Ives wrote the First Symphony as his Yale graduation thesis, and by the standards of the time it is a remarkable piece of craftsmanship, with some really fine lyrical writing in the slow movement. The spirit of Dvořák hovers over much of the score, and there's a touch of Tchaikovskian bombast toward the end. Michael Tilson Thomas very rightly opts here for brisk tempos in the outer movements, and the whole reading is convincing and well recorded, if not ideally so—the locale, Medinah Temple, tends to diffuse rather than focus the nineteenth-century orchestral sonority.

The visionary Fourth Symphony reflects the ethos of the New England Transcendentalists (Emerson, Hawthorne, and Thoreau), and the music conjoins the hymnody of New England churches in the mid-nineteenth century

PHOTO: VALÉRIE CLEMENT/CBS RECORDS

Miniature CAMCORDERS



AUTHORIZED DEALER for ALL BRANDS of CAMCORDERS AT LOW, LOW, PRICES!

CANON E08

HI-FI STEREO



CHINON C8SC98

— MOST POPULAR FEATURES —

- 8mm 10:1 ZOOM PCM STEREO **\$1099**
- 8mm 3LUX 8:1 ZOOM **\$579**
- 8mm or VHS-C MINI PALM SIZE **\$689**
- 8mm HI-BAND 8:1 ZOOM EDIT SEARCH **\$899**

The LATEST MODELS at the BEST VALUE:

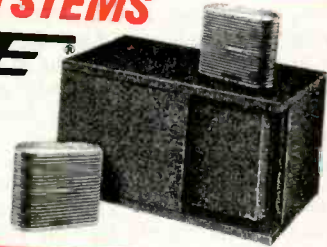
- CANON A1 DIGITAL
- CANON H850
- MINOLTA V20
- PANASONIC PV40
- CANON E08
- CHINON C8SC98
- MINOLTA 8808
- PANASONIC PV610

RCA, HITACHI, RICOH & MUCH MORE!

SPEAKER SYSTEMS



- LIFELIKE SOUND
 - VIRTUAL INVISIBILITY
 - ALL MODELS AVAILABLE
 - CALL FOR BEST PRICE
- THE LOWEST PRICE EVER FOR PATENTED BOSE ACOUSTIC MASS SPEAKER TECHNOLOGY!



FAX MACHINES:



- CANON
 - TOSHIBA
 - PANASONIC
 - OTHER BRANDS CALL
- \$399 CALL \$435**

MINI STEREO SYSTEMS



- AVAILABLE:
- JVC MX-1
 - PIONEER
 - OTHER BRANDS CALL

SUPER VHS 8mm & BETA



- PANASONIC 4 HD VHS w/FLY ERASE HD **\$369**
- TOSHIBA 2 HD Hi-Fi ST MTS **\$269**
- 4+2 SUPER VHS HI-FI MTS SUPER FLY ERASE 410 LINES SYNCHRO EDIT **\$499**
- 4+2 SUPER VHS HI-FI MTS DIGITAL w/FLY ERASE VIDEO BRAIN - Tilt & Date recording - Synchro-Edit Feature - Shuttle Jog Control **\$659**
- SUPER VHS TIGHT PRO-EDITS FOR VIDEO ARTISTS & JOURNALISTS Automatic assemble/insert editing - Character generator - Eight scene edit program - Field Accurate editing - Synchro-edit Tape-time remaining indicator **\$799**
- COMBO SVHS & SVHS-C **\$299**
- BETAMAX **\$269**
- 8mm PLAYER **\$4.99**
- SONY P6120 CV (2 Hour, 8mm) **\$6.99**
- FUJI ST120 (SUPER VHS) **\$15.99**
- EVAPORATED E6 120 8mm **\$15.99**

BEST NAME BRANDS for EDITING VCR's AVAILABLE! CALL!

DOLBY PRO-LOGIC HOME THEATER

DIRECT VIEW TV's

- 30" MTS. **\$739**
- 32" PIP/MTS. STEREO **\$1250**
- 35" DIRECT VIEW **\$1599**
- 40" - 70" REAR PROJECTION

OVER 700 LINES



35" JVC Super Input Mts.

Rear Projections

by Toshiba Hitachi Sony JVC & more!

Toshiba 32" w/Carver Sonic Holography Sound

CALL FOR BEST PRICES!

VIDEO LASER DISC PLAYERS
AUDIO RECEIVERS

- PANASONIC LASER DISC PLAYER MODEL LX200, LX 1000 **LOW PRICE**
- VIDEO LASER DISC DIGITAL STEREO **\$299**
- VIDEO DISC DIGITAL STEREO w/AUTO REVERSE **\$549**
- LASER DISC w/SPECIAL EFFECTS & OPTICAL OUTPUT **\$780**



PORTABLE & COMPACT STEREO

- JVC PCX100 **\$199**
- JVC PCX200 **\$279**
- JVC MX1 **\$599**

DISC PLAYERS

- PORTABLE CD STARTING AT: **\$129**
- WALKMAN

CAR STEREO

- AM/FM CB In DASH **\$249**
- CAR CD CHANGER, REMOTE **\$299**
- RADAR DETECTORS **CALL**



WE WILL MATCH OR BEAT ANY LEGITIMATE PRICE INFORMATION & ORDERS: **1(800) 950-4080**
ORDERS ONLY: **1(800) 444-6300**

FOR CUSTOMER SERVICE CALL: (201) 696-6531

All of the above include all accessories. We ship within 24 hours. All prices quoted include manufacturer's standard accessories & U.S. Warranty. All units are factory sealed. Shipping & handling extra.



with popular song, dance, and march tunes in a tonal discourse that calls to mind both the lyrical and phantasmagoric elements of Joyce's *Ulysses* and *Finnegans Wake*. "A prelude, a majestic fugue, a third movement in comedy vein, and a finale of transcendental spiritual content" was an early summation of the work by Ives himself. By way of preface, Thomas conducts singers from the Chicago Symphony Chorus in four of the hymns used in the symphony, and organist Richard Webster plays the *Beulah Land* tune.

For a work of such dimension, to speak of a "definitive" interpretation is an exercise in futility. As a musical experience, this new recording left me with a sense of fulfillment, which may stem as much from the audio production as from the devoted work of orchestra and chorus. In the "Comedy" movement and in the finale, the sense of varying perspective is all-important, and if Medinah Temple does not provide the sharp aural focus needed for the Ives First Symphony, it is just about ideal for the

bewegt (storm-tossed) section has fire and brimstone to spare, along with an impassioned lyricism. There is a nice lilt to the *Ländler* portions of the scherzo and a scarily phantasmagoric climax just before the final reprise. The famous *adagio* is darkly colored without ever slipping into the merely sentimental. The strings glow with quiet intensity, and there are lovely touches of Mahlerian portamento in the right spots. The wonderfully extroverted rondo-finale is a tour de force in terms of the exuberance and brilliance of the orchestral playing. The Scottish National Orchestra probably does not perform this work very often, and that may have something to do with the freshness of the performance. The recorded sound from Dundee's Caird Hall is stunning in its impact and three-dimensional imaging. I would rate this as one of the half-dozen best recordings of the Mahler Fifth. *D.H.*

MOZART: Piano Sonatas in B-flat Major (K. 281); E-flat Major (K. 282); C Major (K. 545); D Major (K. 284). Alicia de

dramatic first movement, strange *Rondeau en Polonoise* slow movement, and, above all, great variation finale evoke the pianist's best Mozartean instincts. The recording, made at BMG Studio A (the old RCA Studio A) in New York, provides a rather luscious piano sound surrounded by a curiously noisy room that seems to amplify, among other things, the pianist's breathing and some time singalonging. *E.S.*

MOZART: Symphonies No. 32, in G Major (K. 318); No. 33, in B-flat Major (K. 319); No. 41, in C Major (K. 551, "Jupiter"). Philharmonia Orchestra, Emmanuel Krivine cond. DENON © 81757 6579-2 (60 min).

Performance: *Refreshing*
Recording: *Close-up*

Emmanuel Krivine continues to impress me as a persuasive Mozartean with some refreshing ideas of his own. He brings a bracing vigor and clarity of texture to all three works here while quite successfully indicating the essential differences in their respective characters.

The "Jupiter" (positioned at the end of the disc) comes off splendidly, neither understated nor self-consciously lofty but simply the strong, assertive work it is, as rich in effective contrasts as any music Mozart wrote for orchestra. The tempos in this case—as, indeed, throughout all three works—could hardly be better chosen. The phrasing of every theme has an utter naturalness that is at once endearing and stimulating (the bassoon tune in the slow movement is enough to make one catch one's breath). The little Italian overture that has come to be labeled "Symphony No. 32" and the adorable Symphony No. 33 are similarly well done (the waltz tune in No. 33's first movement is especially delicious). The sonic focus is close-up, and perhaps a little too powerful for some tastes, but the sound quality is otherwise first-rate. *R.F.*

RAVEL: Trio in A Minor (see CHAUS-SON)

SCHUBERT: Octet in F Major, Op. 166 (D. 803). Atlantis Ensemble. VIRGIN © 91120-2 (65 min).

Performance: *A joy*
Recording: *Superb*

The Atlantis Ensemble, yet another period-instrument group organized by the violinist Jaap Schröder, is made up of European and American players. The most familiar name in the line-up, other than Schröder's own, is that of Lowell Greer, who plays a natural horn he made himself after an 1818 model. The performance, recorded in a church in Cologne in 1989, captures the work's Schubertian essence in both its vigor and its animation, and the interplay among the performers suggests the happiest sort of true chamber-music commitment. In short, it is a joy, and for me the most



Thomas: convincing Ives symphonies

separated groupings of the Fourth and for its massive climaxes. Not the last word, certainly, but a very impressive realization of an American masterwork. *D.H.*

MAHLER: Symphony No. 5, in C-sharp Minor. Scottish National Orchestra, Neeme Järvi cond. CHANDOS © CHAN 8829 (70 min). © ABTD 1454.

Performance: *Fiercely*
Recording: *Resplendent*

In Neeme Järvi's first shot at Mahler, this Chandos recording of the Fifth Symphony, he goes for high drama. The opening fanfare for the funeral march is implacably stern, and the *stürmisch*

Larrocha (piano). RCA © 60709-2-RC (65 min), © 60709-4-RC.

Performance: *Mostly light*
Recording: *Luscious piano*

This second volume of Alicia de Larrocha's Mozart piano sonatas includes three early sonatas from the mid-1770's and the famous—I almost said infamous—C Major Sonata from near the end of his life. De Larrocha offers mostly light and charming readings of music of a rather overwhelming slightness—with one exception. The D Major Sonata, K. 284, is a rather substantial work, and it clearly engages De Larrocha's musical interest a good bit more than the rest. Its



JVC

- RX-705VTN Receiver
- ★ 100 watts per channel
 - ★ Dolby Pro Logic
 - ★ Built-in 7-band graphic EQ

\$345

RCA

F27194M TV Monitor

- ★ 27" Screen
- ★ Stereo with MTS/SAP decoder
- ★ Picture-in-Picture
- ★ S-VHS inputs



\$695



Quasar

LD-9090 Laserdisc Player

- ★ Multi-format LD/CD player
- ★ Plays both sides of the disc without change
- ★ S-VHS and optical digital outputs

\$495

Toshiba

M-651 VCR

- ★ 4 Heads
- ★ Hi-Fi stereo
- ★ Dual-azimuth heads

\$365



Pentax

PV-EM100A Camcorder

- ★ Fuzzy-logic processing
- ★ 6X power zoom lens
- ★ Wireless remote control

\$645



JVC

KSR-G8 Car Deck

- ★ AM/FM Radio
- ★ Cassette Deck
- ★ CD Changer controls

\$285

Clarion

5670 Car CD Player

- ★ Removable design
- ★ 50 watts total power

\$325



Pioneer

PDM-650 CD Changer

- ★ 6-disc magazine
- ★ Full-function remote control
- ★ New for 1991

\$295

Ohm

PRO-150 Speakers

- ★ Original retail price \$850.00
- ★ Sound Cylinder technology
- ★ 250 watts power handling capability

\$425



BBE

1002 Audio Processor

- ★ Sonic maximizer
- ★ Restores lost harmonics

Call

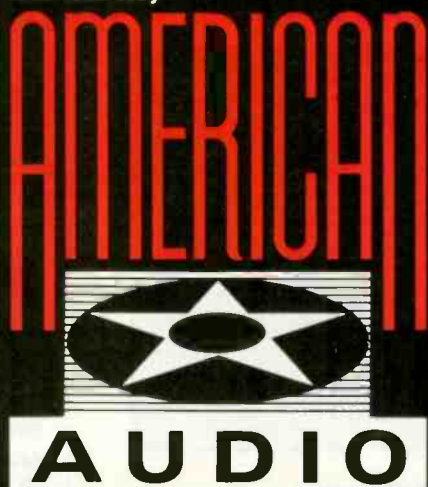
Audio Source

SS-Three Sound Decoder

- ★ Dolby Pro Logic
- ★ Hall and Matrix modes
- ★ Remote control

\$275

There is a better way to sell stereo. First, offer the **best product** at the **best price** possible. Second, **always** speak the **truth**. And third, provide the **best service** for everything you sell. Then, if someone's unhappy provide justice and simply **refund** their money. It's a very simple formula, truth plus justice equals **The American Way**.



AMERICAN AUDIO's retail showroom is state-of-the-art electronic lifestyle. Listening rooms, home theater centers, car install bays—10,000 sq. ft. of today's premier audio, video, camcorder, auto-sound and home office components.

And you can call toll free for advice or to order

1-800-258-4556

to bring the friendly, expert assistance of our sales staff and the unbeatable value of our product lines into your home. That's the best sound advice you'll never pay for.

When you buy from AMERICAN AUDIO, we'll give you:

- Full Money Back Guarantee
- Full Manufacturer Warranty
- Fair & Reasonable Shipping
- Same Low Price for Cash or Credit Card

At AMERICAN AUDIO, you'll find no grey market, no bait & switch, no nonsense. Every brand we sell has authorized us to sell it.

Call 1-800-258-4556 now. And, if you're traveling in New Jersey, please visit us at 213 South St. (Rte. 24) in Morristown, just 30 miles from midtown Manhattan.

Contractors/Installer inquiries invited. College rep program available. And, this is the only small type you'll see in this ad.

Minolta

Your choice B-80 or V-16R Camcorders

- ★ Your choice 8mm or VHS
- ★ 6X power zoom lens
- ★ 2-year warranty

\$665



each



JVC

PCX-500J Portable Stereo

- ★ Dual cassette system
- ★ AM/FM Radio
- ★ 4X-oversampling CD player
- ★ Detachable speakers

\$285

AKG

K-240M Headphones

- ★ Professional design
- ★ Recording studio quality

\$95

100's OF BRANDS AVAILABLE

1000's OF MODELS TO CHOOSE FROM!

- ▶ Best pricing AND Best Service
- ▶ Fast Delivery
- ▶ 30-Day No Lemon
- ▶ Service Protection Plans Available
- ▶ 1000's of Products
- ▶ 10-Day Return*



or C.O.D.

HOURS:

Monday-Friday
8-8
Saturday
8-5:30
Sunday
Closed

Some items
closeouts.

Some
Limited
Quantities.



Call TOLL
FREE for Product
Price Information

DISC PLAYERS

JVC XLV 95BK ... SPECIAL
Dual DAC's, 2x, 2 way edit,
32 track, random program, 3 way repeat

Magnavox CDC 552 ... \$199
5-disc carousel changer, 16 bit, 4x, can
change 4 during play

JVC XLM 505 ... SPECIAL
6 disk magazine, 1-bit, 32 track random
program, remote control

**WE ARE
NOW
FEATURING**



CASSETTE DECKS

TEAC V-970X ... \$449
3-head, B/C/Hx, DBX, closed loop,
headphone jack

JVC TDW 505 ... SPECIAL
Full logic, U-Turn A/R system,
Hi-speed edit, Dolby B/C/Hx Pro

Sherwood DD 1230 ... \$169
Auto-reverse, dubbing deck, Dolby B/C

RECEIVERS

Sherwood RV 1340 ... \$244
100 wts +20 wts/Channel, 5 band EQ,
Dolby surround

JVC RX 703 ... SPECIAL
100 watts, Dolby SS, learning
A/V remote, 7 band EQ

Marantz RS2253 ... \$159
50 wt/ch, matrix SS, LCD display
12 key remote, Quartz tuner

PORTABLES

Sony Discmen ... SPECIAL
Call for best prices on D35, D66, DT66,
D180K, D555 and more!

AIWA CADW8 ... SPECIAL
Dual cassette, CD player, 3D sub,
synthesized tuner, CD output.

HOME OFFICE

Southwest Bell FW-2000 ... \$39
Special Buy! Wireless base phone, place
anywhere!

Smith Corona SD-850 ... \$199
Word Processor Typewriter, Accu-spell,
2 line, 40 char.

PERSONAL ELECTRONICS

Sony MDR V6 ... \$74
Closed ear headphone, monitor, folding
type, 40 mm driver.

BEL 942 ... \$149
3 band detector, high sensitivity

Uniden RD-3XL ... \$135
3 band detector, city/hwy mute, EDIT circuit

VCR

Sharp VCH 870 ... \$239
4-head Hi-Fi, 155 channel, 8/365, auto
head cleaning, OSP, index.

RCA VR 675 ... SPECIAL
181 ch, auto head cleaning, auto tracking,
8/365, MTS Hi-Fi.

JVC HRD860 ... \$419
181 ch, real time counter, duet edit, 8/31,
4 head Hi-Fi.

WDS

WISCONSIN DISCOUNT STEREO
2417 W. Badger Rd., Madison, WI 53713

1-800-356-9514

CAR STEREO SPECIALS

Sherwood XR1504 ... \$149
Special Buy! Digital, removable, 18 presets, A/R
Dolby B, 20 wt.



Sherwood XR2704 ... \$179
SPECIAL BUY! Din, removable, 30 presets,
20 wt, Dolby B/C.

Clarion 9772 ... \$219
Din, removable, 18 presets, A/R, Dolby,
6 wt, RCA out.

JBL T602 ... \$72
Closeout! 6.5" speakers, 2 way
80 wt, 55 Hz to 23kHz.

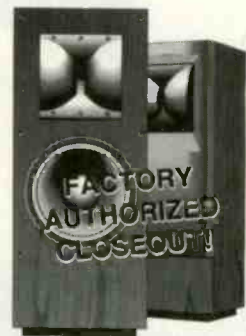
Sherwood SX1092 ... \$59
Special Buy! 6x9" speakers, 3 way,
120 watts.

Clarion 600 A ... \$98
Amplifier, 50 watts per channel, 0.1 total
harmonic distortion

JVC XLG 2000 ... SPECIAL
New 1991 model car CD player.

**JBL
3800**

**\$298
Per Pair**



3-way tower
speaker, 12mm titanium dome
tweeter. 8" polymer laminate woofer,
5" midrange, 8 ohm, 10 to 150 watts

TV

Sony ALL MODELS ... SPECIAL
Call for prices on our complete line of
Sony Television.

JVC AV2080S ... \$359
MTS, surround sound, S-VHS, home sitter
channel guard

JVC C1320 ... \$239
13" remote, 180 channel, clock timer,
channel guard

8MM 8MM 8MM 8MM
YOUR HEADQUARTERS FOR 8MM 8MM 8MM 8MM
SONY ♦ CANON ♦ RCA ♦ FISHER ♦ AND MORE!

CAMCORDER SPECIALS

GE VHS-C ... \$429
Compact, 7 lux, 6:1 zoom

Sony All Models ... SPECIAL
Call for prices on our complete selection!

Panasonic Starlite 2 ... \$699
Slim line, VHS, hi-speed shutter, 6x,
back light, self timer, date & time.

JVC Super VHS ... \$1,329
S-VHS-C, 8x lux, 360 K pixels, includes
fitted carrying case.

persuasive account of this wonderful work available now. It is not just that the sounds of the wind instruments tend to underscore the element of rustic charm here and there, but that everything works so well interpretively. Neither vigor nor expansiveness is slighted, and the interplay among the players achieves a level of alert give-and-take that is exceptional in live chamber music events, let alone recordings. It may not matter to many listeners that the first-movement repeat is taken, but Virgin's superb recording—rich, beautifully defined, close-up enough to make the most of each instrument's character without turning the ensemble into a little orchestra—is a plus no one will be able to ignore.

R.F.

SCHUMANN: Piano Trio No. 1 (see BRAHMS)

SCHUMANN: Symphonies Nos. 1 and 4 (see Best of the Month, page 76)

SHOSTAKOVICH: Twenty-four Preludes, Op. 34; Piano Sonata No. 2, Op. 61. Vladimir Viardo (piano). NONESUCH © 79234-2 (54 min).

Performance: *Revealing*
Recording: *Excellent*

Maxim Shostakovich's description of his father's tormented life, in the annotation for this disc, does not quite prepare the listener for the elegant and witty set of piano preludes that make up Op. 34. But then these preludes were written in 1933, when the composer was riding high—before Stalin and his cultural hatchmen cut him down. The tragic mode is dominant in the post-purge wartime sonata of 1942, a bleak, introverted, and anguished masterpiece. Vladimir Viardo's forthright playing is crystalline and revealing, and the recording, made at the American Academy and Institute of Arts and Letters in New York, is powerful.

E.S.

R. STRAUSS: Songs with Orchestra. Ruhe, Meine Seele, Op. 27, No. 1; Waldseligkeit, Op. 49, No. 1; Freundliche Vision, Op. 48, No. 1; Morgen, Op. 27, No. 4; Befreit, Op. 39, No. 4; Meinem Kinde, Op. 37, No. 3; Winterweihe, Op. 48, No. 4; Wiegenlied, Op. 41, No. 1; Die Heiligen Drei Könige aus Morgenland, Op. 56, No. 6. Gundula Janowitz (soprano); Academy of London, Richard Stamp cond. *Metamorphosen for Twenty-Three Solo Strings.* Academy of London, Richard Stamp cond. VIRGIN © 90794-2 (60 min), © 90794-4.

Performance: *Superb songs*
Recording: *Songs better*

The soprano Gundula Janowitz brings a warmth and humanity to the nine songs in this recording that make them a deeply moving listening experience. The songs were composed originally with piano accompaniments; the orchestral settings came anywhere from a few years to fifty-

four years after the initial composition. Janowitz's voice emerges from the orchestral surround as a kind of exquisitely dusky rumination much of the time, but the text is always intelligible. I find this preferable, at least with this material, to having the singer recorded front and center. The collaboration of the Academy of London under Richard Stamp's direction is faultless, and the sound from EMI's Abbey Road Studio 1 is richly textured, with inner lines beautifully delineated.

In *Metamorphosen*, the combination of a bright acoustic and what seems like a rather close pickup makes for a some-



Inbal: irresistible Stravinsky

what raw sound. The details of Strauss's intricate contrapuntal weavings are laid out almost surgically in Stamp's carefully wrought reading.

D.H.

STRAVINSKY: Petrushka. Royal Philharmonic Orchestra, Oscar Danon cond. *The Rite of Spring.* London Festival Orchestra, René Leibowitz cond. CHESKY © CD 42 (71 min).

Performance: *Excellent*
Recording: *Very good*

STRAVINSKY: The Rite of Spring; Four Etudes for Orchestra; Scherzo à la Russe. Philharmonia Orchestra, Eliahu Inbal cond. TELDEC © 44938-2 (49 min), © 44938-4.

Performance: *A knockout*
Recording: *Likewise*

Oscar Danon, born in Yugoslavia but identified in recordings with orchestras in Prague and London, has always shown an exceptional flair for big, colorful scores. He chose the original 1911 version of *Petrushka* and got the Royal Philharmonic (in 1962, a year after Sir Thomas Beecham's death, possibly the finest of the big London orchestras) to play its collective guts out for him. This is a vital, vibrant, straightforward exploitation of Stravinsky's brilliant coloring, with momentum superbly maintained and all the wonderful tunes

allowed to make their maximal effect, unencumbered by gratuitous psychological probing. It is, in short, just the all-out carnival it ought to be.

René Leibowitz, a scholar associated with the twelve-tone school, left a smallish but varied discography ranging from Schoenberg's works to Beethoven symphonies and Liszt concertos. His way with *The Rite of Spring* is much like Danon's with *Petrushka*—unflagging momentum, a fine feeling for color, splendid delineation of the respective episodes without disruption of continuity—and he secures almost as stunning a level of playing from his pseudonymous orchestra. The sound quality throughout the disc is competitive with most versions of more recent vintage; the *Petrushka* might well turn up as a demonstration item in audio salons.

There is no denying, though, that Teldec's 1989 digital recording of *The Rite of Spring* (made at the Maltings, Snape) has even more vivid and impressive sound. That alone, of course, would count for little, but it also happens that Eliahu Inbal turns in an absolute knockout of a performance (using the 1947 revision of the score). He, too, knows how to let the music flow, how to hold it together most effectively as symphonic drama, and how to get his players to surpass themselves. All things considered—interpretation, orchestral playing, and sound quality—I really do not know a more thoroughly satisfying *Rite* than Inbal's. Highly recommended.

R.F.

VIVALDI: Double Concertos for Flute, Violin, Strings, and Harpsichord in G Minor (RV 517); D Major (RV 512); B-flat Major (RV 524); C Minor (RV 509); G Major (RV 516); D Minor (RV 514). Jean-Pierre Rampal (flute); Isaac Stern (violin); Franz Liszt Chamber Orchestra, János Rolla cond. SONY CLASSICAL © SK 45867 (60 min), © ST 45867.

Performance: *Enjoyable*
Recording: *Fine*

What does an essentially Romantic violinist such as Isaac Stern know about the proper performance of Italian Baroque music? Well, Stern, Jean-Pierre Rampal, and their colleagues have no pretensions to "authenticity" here, but their taste and musical instincts allow them to deliver an honest, valid, and flattering account of the music. And it may be more authentic than it seems: Contemporary descriptions of Vivaldi's own violin tone suggest that it had a huskiness similar to Stern's. The recording shows plenty of evidence that the two soloists went to considerable trouble to blend their respective tonal qualities to create some beguiling sounds, particularly in the slow movements of these modest concertos, which feature the flute and violin in highly expressive counterpoint. Nothing here will show you anything new about Vivaldi, but this release may turn out to be more durable than a lot of other Vivaldi recordings.

D.P.S.

STEREO REVIEW RETAIL MART

AUDIOPHILES!

We realize there are discriminating ears that know the difference between a blue light special and Threshold's STASIS Power Amps. If you speak the language give us a call for a quote.

Our current top selling products are: **ADS, Boston, B&W, Luxman, Dual, Nakamichi, Onkyo, Altec Lansing, Klipsch, Lexicon, Ortofon, Threshold, Mitsu, Rotel, Forte, Optonica, Ariston, Velodyne, Stax, and Tripplite.**

PRICES TOO LOW TO ADVERTISE!

We honor all manufacturers' warranties. Send \$3.00 today for our latest flyer and receive \$5.00 off your first order over \$100.00.

For information call or write: HiFi House, 366 E. College Ave., State College, PA 16801

PHONE: 814/237-BUYS (2897)

HiFi House

The Audio/Video Professionals

THE DAT STORE

DIGITAL AUDIO TAPE RECORDERS

MONDAY THRU FRIDAY: 9:00-6:00 / WEEKENDS: 1:00-4:00

OVER 25 MAKES & MODELS--IN STOCK NOW!

PANASONIC SONY JVC AKAI CASIO PIONEER NAKAMICHI NEC TASCAM SHARP FOSTEX

& Introducing the smallest DAT to date:

THE AIWA HD-X1

DIRECT DIGITAL RECORDING MASH FILTERS DIGITAL IN & OUT RECHARGEABLE BATTERY 256K OVERSAMPLING SUB-CODE EDITING A/D CONVERTER W/WIRED REMOTE & CASE INC.

2624 WILSHIRE BOULEVARD
SANTA MONICA, CA 90403
(213) 828-6487 / FAX (213) 470-6176

The Sound Seller

For the Musical Difference

Authorized Dealer For:

Acoustat	NAD
Audio Control	Belles
Nitty Gritty	CWD
M&K	dbx
Nakamichi	Fried
Oracle	Harman Kardon
Polk	JBL
PROAC	Onkyo
Proton	Grado
STAX	Lexicon
Thorens	Celestion
Dahlquist	DCM
Haffer	Niles
Monster Cable	Kinergetics
Citation	Duntech
Velodyne	Carver
Pattern	

2808 Cahill Road
P.O. Box 224
Marinette, WI 54143
(715) 735-9002

Where to buy Polk Speakers

AUTHORIZED HOME DEALERS

CANADA Call Evolution Technology, Toronto for nearest dealer: 1-416-947-8888
MEXICO: Call AmpliAudio, Mexico City for nearest dealer: 011 525 395 4839
AK Anchorage: Magnum Electronics • Fairbanks: Hohl's

AL Birmingham: Long's Electronics • Huntsville: Sound Distributors • Mobile: Hi Fi Zone • Montgomery: The Record Shop • Tuscaloosa: Kincaid Stereo & TV • Long's Electronics

AR Ft. Smith: Stereo USA • Little Rock: Leisure Electronics • Searcy: Softram

AZ Phoenix/Mesa: Hi Fi Sales • Tucson: Audio Emporium • Yuma: Warehouse Stereo

CA Bakerfield: Casa Moore • Campbell: Sound Goods • Canoga Park: Shelleys • Chico: Sounds By Dave • Corona Del Mar: Pacific Coast Audio Video • El Toro: Genesis Audio • Escondido: Sound Company • Eureka: Eureka Audio Video • Huntington Beach: Good Guys • Lancaster: California Soundworks • Long Beach: Audio Concepts • Los Angeles: Good Guys • Mountain View: Sound Goods • Napa: Filtrvision • Pennington: California Stereo • Redondo: Systems Design • Riverside: Speakercraft • Sacramento: Good Guys • San Diego: Sound Company • San Francisco & Suburbs: Good Guys • San Gabriel: Audio Concepts • San Jose: Good Guys • San Luis Obispo: Audio Eclasy • Santa Barbara: Creative Stereo • Santa Cruz: Burdick's, Sound Wave • Santa Maria: Creative Stereo • Santa Monica: Shelleys Stereo • Thousand Oaks: Creative Stereo • Tustin: Good Guys • Ventura: Creative Stereo • Visalia: Metro Stereo • Westminster: Vistatek Stereo

CO Boulder: Soundtrack • Colorado Springs: Sunshine Audio • Denver & Suburbs: Soundtrack • Glenwood Springs: Stereo Unlimited • Grand Junction: Sound Company • Minturn: Custom Audio Video • Pueblo: Sunshine Audio

CT Danbury: Carlson's, Tweeter Etc. • Fairfield: Audio Design • Greenwich: Al Franklin's • Hartford: Al Franklin's • New Haven: Audio Etc. • New London: Tweeter Etc. • Waterbury: Zimmo Music • Waterford: Tweeter Etc.

DE Wilmington: Bryn Mawr Stereo

FL Daytona Beach: Stereotypes • Ft. Lauderdale: Sound Advice • Ft. Pierce: Sound Shack • Gainesville: Electronics World • Jacksonville: Audio Tech. Spectrum Home Theater • Key West: Audio International • Lakeland: Sound Factory • Mary Esther: Palm Audio Video • Merritt Island: Sound Audio • Miami: Sound Advice • Naples: Stereo Garage • Panama City: Wattsound Stereo • Pensacola: Al Pro Sound • Sunrise: Sound Advice • St. Petersburg: Sound Advice • Tallahassee: Stereo Store • Tampa: Sound Advice • W. Palm Beach: Sound Advice

GA Athens: Hi Fi Buys • Atlanta & Suburbs: Hi Fi Buys • Augusta: Stereo City • Columbus: Merit TV • Gainesville: Audio Dimensions • Macon: Genesis Music • St. Marys: Premier Sight & Sound • Valdosta: Premier Sight & Sound, Stereo Connection

HI Honolulu: Honolulu Audio Video

IA Centerville: Wright's Stereo • Davenport: Greg's Music • Des Moines: Audio Labs • Dubuque: Renies • Ft. Dodge: Sound World of Ft. Dodge • Iowa City: Hawkeye Audio • Mason City: Sound World • Sioux City: Audio Visions

ID Boise: Stereo Shoppe • Idaho Falls: Video & Electronics Shoppe • Kelchum: Infinite Audio • Moscow: Stereo Shoppe • Twin Falls: Audio Warehouse

IL Alton: Reliable Stereo • Aurora: Stereo Systems • Carbondale: Southern Stereo • Champaign: Good Vibes • Chicago & Suburbs: Unified Audio • Decatur: Team Electronics • DeKalb: Classic Hi Fi • Fox Valley/Aurora: United Audio • Grant City: Reliable Stereo • Highland Park: Columbia • Joliet: Stereo Systems • Lansing: UniTek Electronics • Naperville: Stereo Systems • Niles: United Audio • Normal: Sundown One • Northbrook/Oakbrook United Audio • Peoria: Team Electronics • Quincy: Carturnes of Quincy • Rockford: Columbia • Schaumburg: Unified Audio • Springfield: Sundown One • Spring Valley: Audio Labs • Sterling: Sterling Electronics • Vernon Hills: United Audio • Bloomington: Campus Audio • Bluffton: Eley TV & Appliance • Evansville: Risley's • Ft.

Wayne: Lehman's • Indianapolis: Ovalton • Jasper: Risley's • Lafayette: Good Vibes • Michigan City: Audio Connection • Muncie: Great Sounds • South Bend: Audio & Computer Specialists • Terre Haute: Stereo Crafters • Vincennes: Risley's

KS Junction City: Audio Junction • Kansas City: Brands Mart • Overland Park: Audio Electronics • Brands Mart • Wichita: Audio Visions • Topeka: Nelson's

KY Bowling Green: Position's • Lexington: Ovalton Audio • Louisville: Audio Video Buy Design • Ovalton • Madisonville: Risley Electronics • Owensboro, Paducah: Risley's • Pikeville: Mayo Inc.

LA Alexandria: Simpson Electronics • Lafayette: Sound Electronics • Metairie & New Orleans: Alternam Audio • Shreveport: Wrights Sound Gallery • MA Boston & Suburbs: Goodwin's, Tweeter Etc. • Fitchburg: Fitchburg Music • Lawrence: Royal Jewelers Plus • Pittsfield: H.B.S. Stereo • Seekonk: Tweeter Etc. • Worcester: O'Coins

MD Baltimore: Soundscape, Stansbury • Galthersburg: Audio Buys • Hagerstown: Sunrise Electronics

MI Ann Arbor: Hi Fi Buys • Dearborn: Almas Hi Fi • Farmington Hills: Almas Hi Fi • Flint: Stereo Center • Grand Rapids: Classic Stereo • Iron Mountain: Sound North • Kalamazoo: Classic Stereo • Lansing/Midland: Hi Fi Buys • Petoskey: Kurtz Music • Rochester/Royal Oak: Almas Hi Fi • Saginaw: Court St. Listening Room • Traverse City: Kurtz Music • Ypsilanti: Future Sound

MN Alexandria: Sound Shop • Duluth: Mel's TV • Audio • East Grand Forks: Mavays • Grand Rapids: Audio Files of Grand Rapids • Mankato: Audio King • Minneapolis & Suburbs: Audio King • Rochester: Audio King • St. Paul: Audio King • Winona: Audio Designs

MO Cape Girardeau: Stereo One • Columbia: Johnston Audio • Jefferson City: The Entertainer • Kansas City: Brands Mart • Kirksville: Wright's Stereo • Springfield: Harvey's Stereo • St. Louis: Best Sound, Sound Central

MS Columbus: Hooper's • Gulfport: Hooper's • Jackson: Hooper's • Pascagoula: Empress, Hooper's

MT Billings: Video Sat & Sound Bozeman: Thrifty Ear • Great Falls: Rocky Mountain Hi Fi • Kallispell: Audio Visions • Missoula: Aspen Sound

NC Boone: Highland Audio • Carrboro: Stereo Sound • Chapel Hill: Stereo Sound • Charlotte: Southern Audio Systems • Conover • Tri-City • Greensboro: Stereo Sound • Hendersonville: Audio Connections • Kinston: Stereo Concepts • Mooreshead City: Anderson Audio • New Bern: Anderson Audio • Raleigh: Audio Buys, Stereo Sound • Rocky Mount: Microwave Audio • Wilmington: Atlantic Audio • Wilson: Modern Stereo • Winston-Salem: Stereo Sound

ND Bismarck: Pacific Sound • Fargo: Today Electronics

NE Kearney: Midwest Audio • Lincoln: Stereo West • Norfolk: Mid City Stereo • Omaha: Stereo West • York: Midwest Audio

NH Concord: Audio of New England • Laconia: Greenleaf Music • Salem: Domino's

NJ Bernardsville: CSA Audio • East Brunswick: Atlantic Stereo • Maple Shade: Bryn Mawr Stereo • Paramus: Harvey Electronics • Raritan: AC Audio • Ridgewood: Soundings Board • Shrewsbury: Monmouth Stereo • Toms River: Bands Camera • Trenton: Hais Stereo Sound Center • Upper Merion: CSA Audio • Wall Twp.: Monmouth Stereo • Westfield: Stuarts Audio Video

NM Alamogordo: D&K Electronics • Albuquerque: West Coast Sound • Carlsbad: Beason's • Clovis: Towne Crier • Santa Fe: West Coast Sound

NV Elko: Elko Audio • Las Vegas: Upper Ear • Reno: Good Guys

NY Albany: Clark Music • Amherst: Speaker Shop • Batavia: Unicorn Audio • Bedford Hills: The Sound Concept • Buffalo: Speaker Shop • Corning: Chemung • Elmira: Chemung • Forest Hills: Continental Sound • Fredonia: Costello's Music • Glens Falls: Audio Genesis • Goshen: Longplayer's Stereo • Harriman: The Sound Concept • Ithaca: Chemung, Sound Image • James-

polkaudio

The Speaker Specialists

town: Studio One • Massena: Hi Fi Shop • Nanuet: The Sound Concept • Newburgh: Audio Expressions • New Hartford: Adirondack Music • New York City: Electronic Workshop, Harvey Electronics • Plattsburgh: Alpha Stereo • Queensbury: Audio Genesis • Rochester: JB Sound • Syracuse: Clark Music • Vestal: Hart Electronics • Westbury: Harvey Electronics • White Plains: Harvey Electronics

OH Akron: Audio Craft • Canton: Belden Audio • Cleveland & Suburbs: Audio Craft • Cincinnati: Stereo Lab • Columbus: Stereo Lab • Dayton: Stereo Showcase • Findlay: Audio Craft • Lima: Classic Stereo • Niles: Reunited Electronics • Toledo: Audio Craft • Wooster: Far East Audio

OK Lawton: Hi Fi Shop • Oklahoma City: Audio Dimensions • Shawnee: Rave Sounds • Stillwater: Carturnes • Tulsa: Audio Advice

OR Eugene: University Hi Fi • Grants Pass: Sheekells • Medford: Sheekells • Portland: Magnolia • Salem: Kellys Home Center

PA Allentown: Bryn Mawr Stereo • Blakely: Hart Electronics • Bryn Mawr: Bryn Mawr Stereo • Camp Hill: Bryn Mawr Stereo • Chambersburg: Sunrise Electronics • Erie: Studio One • Harrisburg: Bryn Mawr Stereo • Jeannette: Audio Communications • Johnstown: Gary's Entertainment • Kingston: Hart Electronics • Lancaster: G/T Stereo • Longhorne: Bryn Mawr • Montgomeryville: Bryn Mawr Stereo • Natrona Heights: Stereo Land • Philadelphia & Suburbs: Bryn Mawr Stereo • Pittsburgh: Audio Communications, Audio Junction • Quakertown: Bryn Mawr Stereo • Reading: G/T Stereo • Selinsgrove: Stereo Shoppe • State College: Paul & Tony's Stereo • Stroudsburg: Main St. Audio Video • Williamsport: Robert M. Sides

PR PUERTO RICO Rio Piedras: Precision Audio

RI Middleton: Film Audio • N. Providence: East-ern Audio • Warwick: Tweeter Etc.

SC Charleston: Audio Warehouse • Columbia: Sound Advice • Greenville: American Audio • Greenwood: Stereo Shop • Spartanburg: Stereo Shop • Sumter: Audio Vision

SD Aberdeen: Engel Music • Rapid City: Team Electronics • Sioux Falls: Audio King

TN Chattanooga: R&R TV • Cookeville: Lindsey Ward • Jackson: New Wave Electronics • Kingsport: Audition • Knoxville: Lindsey Ward • Memphis: Modern Music • Nashville: Hi Fi Buys • TX Amarillo: Sound Systems Ltd. • Arlington: Sound Idea • Austin: Marcum Electronics • Beaumont: John Goodey Audio • College Station: Audio Video • Corpus Christi: Tape Town • Dallas: American • Denton: Bell Audio Video • El Paso: Soundquest • Ft. Worth: Sound Idea • Garland: MJM Audio • Houston: Shellfield Audio • Hurst: Sound Idea • Laredo: Meter International • Longview: Audio Techniques • Lubbock: Electronics Supercenter • McAllen: Metro • San Angelo: Sound Box • San Antonio: Mobile HiFi • San Marcos: Discovery Audio Video • Sherman: Worldwide Stereo • Temple: Audio Tech • Texarkana: Sound Town • Victoria: Dyer Electronics • Waco: Audio Tech • UT Logan: Consumer Technologies • Salt Lake City: Broadway Music • St. George: Boulevard Home Furnishings

VA Charlottesville: Holdrens • Collinsville: Holdrens • Falls Church/Manassas: Audio Buys • Harrisonburg: Ace Music • N. Electronics • Radford: Holdrens • Richmond: Gary's Stereo • Roanoke: Holdrens • Virginia Beach: Digital Sound

VT Essex Junction: Creative Sound

WA Bellingham: OC Stereo • Chelan: Music Store • Oak Harbor: OC Stereo • Seattle/Bellvue/Lynnwood: Magnolia • Spokane: Electracraft (Hals) • Tacoma: Magnolia

WI Appleton: Sound World • Eau Claire: F.S. Appleban & TV • Fond Du Lac: Audio Plus • Green Bay: Sound World • Lacrosse: Sound World • Madison: Happy Medium • Milwaukee: Audio Emporium • Oshkosh: Audio Plus • Ripon: Audio Plus • Sheboygan: Genes Sound & Camera • Wausau: Sound World

WV Barboursville, Beckley, Charleston: Pied Piper • Clarksburg: Audio Visual Concepts • Huntington: Pied Piper • Parkersburg: Video Warehouse • Piedmont: Sound Gallery • Wheeling: Look 'N' Listen

WY Cheyenne: Electronics Unlimited • Gillette: Sheridan: Star Video Library

AUDIO DEN Ltd.

Authorized Sales & Service
Auditions by Appointments

2021 Smith Haven Plaza (Route 347)
Lake Grove, NY 11755 ☐ 516-360-1990

Aacom	Optonica
Aragon	Paradigm
Arcam	Phillips
B&K	Proton
CAL	Rogers
Celestion	Shure Ultra
Conrad-Johnson	Sonance
CWD	Sonographe
Grado	SOTA
Haffer	Soundstream
Klipsch	Soundwave
Magnepan	Stax
Mirage	Theta Digital
MIT Cable	Velodyne
Monster Cable	VTL
NAD	Well-Tempered
Nakamichi	Yamaha

FOCUS ELECTRONICS

4523-13th AVE. B'KLN NY 11219

1-718-436-4646 ASK ABOUT OUR FREE VACATION WITH PURCHASE

SONY CAMCORDER HEADQUARTERS

- VCR PLUS+ 1-STEP TAPING WITH QEMSTAR REMOTE BAR-CODE PROGRAMMING. IN STOCK - CALL.**
- CD PLAYERS**
 —TECHNICS—
 SL-PG100 NEW.....LOW
 SL-PG300 NEW.....LOW
 SL-PS50 NEW with MASH...LOW
 SL-PC33 front-load 5-CD rotary...LOW
 SL-PC45 NEW.....LOW
 SL-PC25 NEW.....LOW
 SL-PC15 NEW.....LOW
NEW! SL-XP300 PORTABLE
 —YAMAHA—
 CDC-605 5-disc changer.....259.99
 CDC-705 5-disc changer.....299.99
 —PIONEER—
 PD-M730.....LOW
 PD-M630.....LOW
 PD-M530.....LOW
 PD-T503.....LOW
 PD-7300.....LOW
 PD-6300.....LOW
 PD-4350.....LOW
 PD-4300.....LOW
 —JVC—
 XL-V241.....129.99
 XL-M405.....209.99
 XL-M505.....229.99
 XL-M705.....313.99
 XL-R205 5-CD rotary.....169.00
 XL-R304 5-CD rotary.....189.99
 XL-Z441.....196.99
 XL-Z1050.....CALL
- CASSETTE DECKS**
 —TECHNICS—
 RS-TR555 twin-well.....LOW
 RS-TR335 double auto-rev.....LOW
 RS-TR313 NEW.....229.99
 RS-TR212 NEW.....LOW
 RS-B955 2-motor.....LOW
 RS-B465 auto-rev.....LOW
 —PIONEER—
 CT-M6R multi-tape changer...NEW
 CT-W830R w/Dolby.....NEW
 CT-W630R w/Dolby, HX PRO...NEW
 CT-W530R w/Dolby.....NEW
 CT-W430 w/Dolby.....NEW
 CT-W330.....NEW
 —JVC—
 TD-W205.....129.99
 TD-W305.....169.99
 TD-W505.....189.99
 TD-W805.....229.99
 TD-X341.....149.99
 TD-R441.....169.99
 TD-V541.....249.99
 TD-V1050.....CALL
- AIWA—
 AD-WX999.....369.99
 AD-WX888.....298.99
 AD-WX777.....279.99
 AD-WX717.....179.99
 AD-WX616.....129.99
 AD-WX515.....149.99
 AD-WX333.....119.99
 AD-F1000.....509.99
 AD-F800.....278.99
 AD-R505.....139.99
 AD-F400.....129.99
 AD-F300.....85.95
- INTEGRATED AMPS**
 —TECHNICS—
 SU-V660 90W.....LOW
 SU-V460 50W.....LOW
- SOUND PROCESSORS**
 —TECHNICS—
 SH-AV40 Dolby Surround...LOW
- RECEIVERS**
 —PIONEER—
 VSX-D15 130W.....NEW
 VSX-9700 125W.....NEW
 VSX-5700S.....NEW
 VSX-5600 105W.....NEW
 VSX-4700S.....NEW
 VSX-4600 105W.....NEW
 VSX-3700S 100W.....NEW
 VSX-3600.....NEW
 SX-1900 40W.....NEW
 SX-2800 55W.....NEW
 SX-2900 65W.....NEW
- JVC—
 RX-205 40W.....155.99
 RX-305 60W.....167.99
 RX-505 80W.....249.99
 RX-705 100W.....324.99
 RX-805 100W.....399.99
 RX-905 100W.....CALL
 RX-1050.....CALL
- TECHNICS—
 SA-GX700 100W.....NEW
 SA-GX500 80W.....NEW
 SA-QX300 60W.....NEW
 SA-QX100 40W.....NEW
- TURNABLES**
 —TECHNICS—
 SL-DB33 Quartz D.D.....LOW
 SL-DB22 Belt drive.....LOW
- SANSUI SPECIALS**
 R-950AV 105W receiver.....259.99
 R-750AV 55W receiver.....199.99
 CD-3100M CD changer.....219.99
 CD-2700 CD player.....149.99
- HI-END SPEAKERS**
 —PINNACLE—
 PN-8 +.....IN STOCK
 PN-5 +.....IN STOCK
 PN-6.....IN STOCK
 PN-2.....LOW
 PN-7 +.....LOW
 PN MONITOR 200.....LOW
 PN-SUB + Subwoofer.....NEW

FOCUS ELECTRONICS — 4523 13th AVENUE, BROOKLYN, NEW YORK 11219, 1-718-436-4646. VISA, MC, AMEX & C.O.D. ACCEPTED. 14 DAY RETURN POLICY. IF RETURNED AFTER 14 DAYS, A 15% RESTOCKING FEE WILL APPLY. OPEN SUNDAY 10 AM — 6 PM, MONDAY THROUGH THURSDAY 10 AM — 7 PM, FRIDAY 10 AM — 2 PM.

While Others Promise...Sound City Delivers

NHT The Video Speaker **TOP RATED**

ALL MODELS NOW IN STOCK

- Model 1.3 • Model 2 • Zero
- Model 1 • SW1 • M100
- Model 2.3 • SW2 • Model VT1

CALL FOR CURRENT PRICES

LASER DISC PLAYERS

ALL BRANDS • IN STOCK • S-VHS OUTPUT W/REMOTE AS LOW AS

\$399

ADC SS525 Equalizer/Analyzer

Auto room/speaker equalization • dbx technology • remote control • 12 bands/ch • 4 memories for storing curves • Precision electronic 2 db/step EQ controls • Oversized four-core real-time display • Calibrated electret-condenser mic supplied • Sleep intrasonic filter for clean bass

Best Price \$289

BBE 1002 • SONIC MAXIMIZER

BBE Sound Inc.

The most hearable advance in audio technology since Hi-Fi itself

\$199

Also Available BBE 3012 for your car

LUXMAN DESIGN SERIES

P007 FULLY AUTOMATIC TURNTABLE SYSTEM

Phono turntable allows auto or manual size selection w/33 or 45 rpm speeds. May be remotely started/stoppped from RA-007 remote control.

ORIGINALLY \$350 NOW \$199

EPIURE LOUDSPEAKERS

SUPER SPEAKER SALE

MODEL 4 One" tweeter and 1-8" woofer Original \$490 NOW **\$245 pr**

MODEL 5 One" tweeter and 1-6" woofer Original \$350 NOW **\$175 pr**

PRO LOGIC RECEIVER

• Front: 130 w/ch • Rear: 200 watts/ch • Learning remote control • 7-band spectrum analyzer • Dolby Pro Logic surround sound

Brand Name Now Only \$469

FACTORY AUTHORIZED

Variable sensitivity adjustable tube length • Suitable for amps w/10w to 200w output • Roll off above 100Hz so that it can't be coted by ear. Giving that all around sound

\$229

Also DM 550 Bookshelf Speaker \$259

TECHNICS SUPER SALE

SA-GX700 • 3-band parametric EQ w/15 band spectrum analyzer • Dolby • 100w/ch RC

SA-GX500 • Parametric EQ w/15 band spectrum analyzer • Dolby • 100 w/ch. REMOTE

SL-1200 THE DJ TURNTABLE

CALL FOR CURRENT PRICES

JVC HRD850U • Sonic Brilliance

Oval cut DA 4-hd Hi-Fi VCR system • Digital quad picture-in-picture • Digital audio/video tracking • Dual-screen programming w/remote

ALSO AVAILABLE HRD970U, HRD8500U, **CALL**

dbx • LAST CALL

1BX-DS Dynamic Range Expander • Expand/Compress the dynamic range by up to 50% • Impact recovery **\$199**

SX-10 Video Sound Dynamic Enhancer **\$44**

SX-20 Video Sound Impact Restorer **\$44**

LUXMAN DESIGN SERIES

G007 DIGITAL SURROUND MASTER

Surround Sound adaptor w/dual 7-band graphic EQ contains amps for 4 speakers • 4 presettable equalization curves w/step, call for L&R

ORIGINALLY \$850 NOW \$425

PROTON SURROUND SOUND

SD1000 SURROUND SOUND PROCESSOR

Remote control surround sound processor. 50db separation. Cinema/Music/Bypass settings. Achieves separation enhancement between adjacent ch. 7 ch w/sub output. **\$399**

CORDLESS STEREO HEADPHONES

Utilizes crystal controlled radio transmitter

NADU \$78

SONY MDR-CD6 Digital stereo headphones **CALL**

SENNHEISER HD-490 Digital stereo headphones **\$87**

ALL MODELS AVAILABLE

CAR STEREOS

We Carry A Full Line Of AM/FM Cassette Receivers CD Changers Car Amplifiers Car Speakers Radar Detectors

Car CD Player As Low As \$269

SOUNDCRAFTSMAN SAVINGS

Pro EQ44 Rated Jan '91 Stereo Review **CALL**

Pro-Power 4-17 205 w/ch amplifier **Orig \$799 \$499**

Pro-Control 3-17 Pre-amplifier **Orig \$500 \$368**

ads Super Sale

M12 Tower Speaker **\$1049**

CM7 3-way Bookshelf **\$699**

L9E, L8E, L7E Best Sounding Spkr **CALL**

C4 3-Hd Cass Deck **\$469**

CALL FOR PRICE

C3 3Hd Cass Deck **\$399**

C2/3 Dolby B&C Cass **CALL**

L200e 2-Way Speaker **FOR PRICE**

C300IS In-Wall Speakers **PRICE**

R4 70w/ch Receiver **LOW**

SAT5 Bookshelf Speaker **LOW**

SW5 Powered Sub **PRICE**

DISCMAN/WALKMAN

Choose From Philips, Denon, Sony, Kenwood

DCP61, DCP81, D66, D11, D180K, D303, D35, D25, AZ6804... And Many More

SUPER SALE

Philips FA360 130W int amp. Orig \$399 **\$199**

Haller DH100 Preamp. Orig \$250 **\$139**

Haller DH10 Preamp. Orig \$150 **\$97**

Haller DH330 Digital Tuner. Orig \$365 **\$189**

Proton D940 Receiver w/DPD Orig \$600 **\$288**

Proton AA1150 105W Amp. Orig \$500 **\$239**

Philips CD80 Best CD Player Orig \$180 **CALL**

Haller DH330 Cassette Deck. Orig \$250 **\$129**

FACTORY AUTHORIZED

ONLY authorized dealers offer you the protection of a manufacturers warranty with your purchase; of other dealers, you may have no warranty at all. Authorized dealers stock only components designed for the U.S., and have the training to help you select the right one for you.

WE ACCEPT VISA • MASTERCARD • DINERS CLUB • AMERICAN EXPRESS • C.O.D. • CHECK • MONEY ORDER • CERTIFIED CHECK • CASHERS CHECK

THE COMPANY WITH THE RIGHT PRICE!!

SOUND CITY

201 • 838 • 3444

MEADTOWN SHOPPING CENTER
 ROUTE 23 SOUTH
 KINNELON, NJ 07405
 HOURS: MON-FRI 10-9 SAT 9-6
 Not Responsible For Typographical Errors
 Shipping & Handling Charges are NOT Included Above Prices
 Returned Items Subject to Restocking Fee. We reserve the right to limit quantities. Prices subject to change without notice.

WE ARE #1 IN AUDIO VIDEO CAR STEREO

Sound CITY

Meadtown Shopping Center • Rt. 23 S. Kinnelon NJ 07504

AUDIO VIDEO

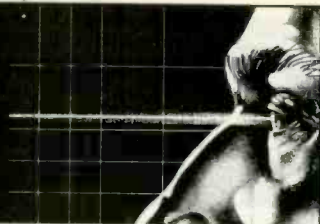
• Acoustat • Acoustic Research • ADC • ADS • Aiwa
 • AKG • Alpine • Altec Lansing • Ambico • Atlantic
 Technology • Audio Quest • Audio Source • B & O • B &
 W • Bazooka • BBE • Beltronics • Bellogatti • Camber
 • Canon • Canton • Carver • Celestion • Cerwin
 Vega • Cooustic • CWD • DBX • Denon • Eclipse
 • Epicure • Fisher • Fox • GE • Grundig • Hafler
 • HiFonics • Hitachi • Infinity • JVC • K40 • Kenwood
 • Lexicon • Luxman • MB Quart • Low Low Prices ••

201-838-3444

• Minolta • Mission • Mitsubishi • Monster Cable • NAD
 • Nady • NHT Labs • Niles • Olympus • Onkyo
 • Optonica • Orion • Panasonic • Phase Linear • Philips
 • Pinnacle • Pioneer • Precision Power • Proton • Parsec
 • RCA • Rockford Fosgate • Sharp • Sanyo • Sonance
 • Sony • Soundcraftsman • Soundstream • Stax
 • Stillwater • Sunpack • Surround Sound • Tamrac
 • Teac • Technics • Thorens • Toshiba • Triad • Yamaha
 ••• And Many More •••

CAR STEREO

SERIOUS AUDIOPHILES DESERVE SERIOUS SERVICE.



And that's exactly what you'll get from Reference Audio/Video. We offer the finest in high-end audio and the best in friendly service by our knowledgeable staff. From the latest CD players to state-of-the-art surround-sound systems, you'll

like our surprisingly affordable prices, dedicated service and fast shipping.

LIMITED OFFER:
 FREE evaluation of your stereo system by one of our expert consultants! Call for details.

Reference AUDIO/VIDEO

(213) 517-1700 Fax (213) 517-1732

18214 Dalton Avenue • Dept. S • Gardena, CA 90248

Hours: (Pacific Time) M-F 9 a.m. - 6 p.m. • Sat. 9 a.m. - 1 p.m.
 Gift Certificates Available for the Hard-to-Please Audiophile.

ACOUSTAT • ADVENT • AKG • AUDIBLE ILLUSIONS • BEYER • BLAUPUNKT • CAL AUDIO
 LABS • CANON • CELESTION • COUNTERPOINT • CWD • DAHLQUIST • DCM • FOSGATE
 • HAFLER • HARMAN KARDON • JAMO • JBL • JSE • LEXICON • MAGNUM/DYNALAB •
 MELOS • MFA • MOD SQUAD • NILES • OHM • ONKYO • PARASOUND • PHILIPS •
 PIONEER • PRECISE • PROTON • PS AUDIO • REVOX • SNELL • SONANCE • SONY • STAX
 THORENS • TICE • VELODYNE • VPI • AND MANY MORE!

Rands

Quality Audio Equipment
 Personal Service Since 1959

Adcom
 Alpine
 Boston Acoustic
 Bose
 Cooustic
 Denon
 Eclipse
 Grado
 Infinity
 NAD
 Mirage
 MB Quart
 Nakamichi
 Philips
 Pioneer Elite
 Polk
 Rockford
 Fosgate
 Soundstream
 Yamaha

Authorized Sales and Service
908-255-1935
 1841 Hooper Ave., Toms River NJ 08753

ACOUSTIC
 RESEARCH
 ADVENT
 AKG
 ALLISON
 ALPHASONIK
 ALTEC LANSING
 AUDIO LAB
 AUDIO SOURCE
 BAZOOKA
 BBE
 BEYER DYNAMIC
 BOSE
 BOULDER
 CAMBER
 CANON
 CARVER (CARI)
 CELESTION
 CODE ALARM
 ECLIPSE
 ESCORTIC
 FINELINE

FINYL
 HAFLER (CARI)
 HARMAN KARDON
 JBL
 JANO
 JVC
 KEF (CARI)
 M & K
 MAGNAVOX
 MAPLE KNOLL
 MINOLTA
 MKO
 MOD SQUAD
 MUSE
 NIKON
 NILES
 NSM
 OHM
 PARASOUND
 PARSEC
 PENTAX
 PHOENIX GLO

PINNACLE
 PIONEER
 PIVOTELLI
 PRECISION POWER
 PREMIER
 RCA
 RICOH
 SANSUI/VINTAGE
 SONRISE
 SSI
 STEWART
 SUMIKO
 TDL
 THORENS
 TIFFANY
 TOSHIBA
 TRIAD
 VAN DEN HUL
 WHARFPALE
 plus many more!



201-984-8080

213 South St. (Rte. 24) Morristown NJ 07960

SOUND CITY'S BEST BUY



LUXMAN DESIGN SERIES

A-007 40 W/CH Integrated Amp w/Remote
Digital direct (optical or coaxial)

T-007 Digital Synthesized AM/FM Tuner
Built-in timer; 20 random-select presets

D-007 Digital Exclusive CD Player
16 program selections

K-007 Auto Reverse Double Cassette Deck
Dolby B & C; Double-speed dubbing

OPTIONAL



P-007 Linear Tracking Turntable
 Remote start/stop control



G-007 Surround Sound Equalizer
 25 w/ch output for rear spks

LUXMAN
**5 YEAR
 WARRANTY**

Originally \$2400
NOW ONLY \$1199

THE COMPANY WITH THE RIGHT PRICE!

Meadtown Shopping Center
 Route 23 South
 Kinnelon N.J. 07405

201-838-3444

VISA • MASTERCARD • DISCOVER • AMERICAN EXPRESS • DINERS CLUB
 CHECKS & MONEY ORDERS MUST BE SENT TO ABOVE ADDRESS



Sound Advice...

THORENS TD-166 Mk .V turntable

SIGNET AT-OC9 Cartridge highly reviewed Combo Reg. \$80000 SALE \$59900 LIMITED QUANTITY!

OPTONICA CDU-10 Call DENON G-05 'Cellena' Call

HI-FI CITY is the first step in 'Hi-Fidelity Retail'

Sound Equipment...

System Suggestion 'Stereophile' recommended components

CREEK 4140 Integrated Amplifier HK HD-7500 II CD-player EPOS ES-14 Speakers Reg. \$242500 SALE \$189900

Sound Deals!

Separates' Best

COUNTERPOINT SA-100 Amplifier SA-1000 Preamplifier P.S.AUDIO DELTA 100 Amplifier 4.6 Preamplifier HAFLER X1-280 Amplifier IRIS Preamplifier Call Call Call

JVC XLZ-1050TN New improved and critically acclaimed 'best CD player' P.S.Audio SuperDigiLink Straightwire 'Macstro' Interconnect Cables THAT'S IT! Experience the ultimate sound quality at very affordable price!

MAIL ORDER CALLS: 212-691-5823

THE SYSTEM SPECIALISTS

AUTHORIZED DEALER *DCM* COUNTERPOINT*PS AUDIO*YBA*CREEK*MARANTZ*HARMAN KARDON*CWD *JBL*HAFLER*CITATION*NHT*CYRUS*a/d/s*TANNOY*GOODMANS*ACOUSTAT*MISSION*SIGNET*Q.E.D.* *TRIAD*TARDIS*STRAIGHT WIRE*CASTLE*JVC SUPERDIGIFINE*AUDIOSOURCE*ADVENT*FSGATE*EPOS *GOLDRING*OPTONICA*SHARP*REVOLVER*THORENS*ADC*SONANCE*LAZARUS*ELITE/PIONEER*&more*

145 W. 26th. St. NYC NY 10001 STORE HOURS: MON-SAT 10-6 SUN 11-5 EST MAJOR CREDIT CARDS ACCEPTED!

STEREO REVIEW CLASSIFIED

For More Advertising Information Call 1-800-445-6066 9am - 5pm EST

RECORDS



We buy and sell LP vinyl records Over 100,000 titles in stock 139 West 72nd Street New York, NY 10023 Rare Records Ltd. 212 877-5020

RECORD COLLECTORS' SUPPLIES. REPLACEMENT JACKETS: Inner sleeves, 78 RPM sleeves, CLD boxes, etc. COMPLETE CATALOG: Cabco, Box 8212, Room 640, Columbus, Ohio 43201.

SERIOUS MUSIC DOESN'T HAVE TO COST SERIOUS MONEY. The latest ROSE RECORDS catalog features a wide selection of classical, operatic, jazz, and popular music overstocks and cut-outs—LPs, cassettes and CDs at bargain prices. ROSE RECORDS, Dept. SR, 214 S. Wabash, Chicago, IL 60604, 800-955-R-O-S-E.

200,000 OUT-OF-PRINT RECORDS. LPs/45s. Fifties thru Seventies. All categories. Catalogs available. State your interests. Want lists welcome. Craig Moerer, Box 19231-SR, Portland, OR 97219, PROFESSIONAL SOUND, LIGHTING, EFFECTS. NEW & USED—D.J.S. BANDS, RINKS & NIGHTCLUBS. CALL FOR 50-PAGE BOOKLET. (502) 782-1172.

AUTHORIZED

SAVE 40% ON HIGH-END home speakers, subwoofers, amplifiers. FREE CATALOG! RTRD, 3021 Sangamon Ave., Springfield, IL 62702. 1 (800) 283-4644.

CALL US LAST

WE WILL BEAT ANY PRICE PRINTED IN THIS MAGAZINE ON AUDIO & CAR STEREO

The SOUND Approach 6067 Jericho Tpke., Commack, NY 11725 FULL WARRANTY (800) 368-2344

EXPERIENCED, FRIENDLY ADVICE! AUDIRE, PS, CWD, STAX, KINE-RGETICS, THORENS, MIRAGE, AUDIOQUEST, FRIED, MONSTER, QUAD, SPICA, STRAIGHTWIRE, MORE!! FREE SHIPPING! READ BROTHERS STEREO, 593-B KING STREET, CHARLESTON, SC 29403. (803)723-7276.

HIGH-END LOUDSPEAKER systems, speaker kits and the widest selection of raw drivers from the world's finest manufacturers. For beginners and audiophiles. Free catalog. A&S SPEAKERS, 3170 23rd St, San Francisco, CA 94110. (415) 641-4573.

SPEAKER COMPONENTS - KITS, Audax-Vifa, Crossovers, Books more. Catalog \$2. MENISCUS, 2442 28th St. SW, Dept. O, Wyoming, MI 49509. (616)534-9121.

PHILIPS, AUDAX, PEERLESS, FOCAL, AND DYNAUDIO LOUDSPEAKERS in stock with good prices and competent service. Crossover components also, MADISOUND SPEAKER COMPONENTS, 8608 University Green, Box 4283, Madison, WI 53711. (608) 831-3433.

CALL TOLL FREE! 1(800) 826-0520. ONKYO * NAD * HARMAN KARDON * PROTON * AUDIO CONTROL * CITATION * JBL * LEXICON * HAFLER * M&K * STAX * CELESTION * KINE-RGETICS * NITTY GRITTY * PROAC * DAHLQUIST * BELLES * dbx * FRIED * CWD * MONSTER CABLE * DCM * GRADO * NILES * VELODYNE * SOUND SELLER, 2808 CAHILL ROAD, P.O. BOX 224, MARINETTE, WI 54143-0224. FAX # (715) 735-5838, PHONE (715) 735-9002.

WE SELL MORE HIGH PERFORMANCE SPEAKER KITS than anyone in the U.S. FREE CATALOG: 1-800-346-9183. AUDIO CONCEPTS 901 S. 4th St. LaCrosse, WI 54601.

DIAMOND NEEDLES, PHONO CARTRIDGES & ACCESSORIES. AUDIO-TECHNICA, AUDIO-QUEST, BANG & OLUFSEN, DYNAVECTOR, LAST, ORTOFON, PICKERING, SHURE, SIGNET, STANTON & SUMIKO. TOLL FREE INCLUDING CANADA (800) 221-0906. N.Y. (516) 599-1112. CREDIT CARDS ACCEPTABLE. FOR CATALOG SEND SELF ADDRESSED STAMPED ENVELOPE. LYLE CARTRIDGES, DEPT SR, P.O. BOX 158, VALLEY STREAM, N.Y. 11582.

ROTTEN WOOFER FOAM? OUR SPECIALTY! ORIGINAL QUALITY RESURROUNDING, RECONING, ALL BRANDS. TRI-STATE LOUDSPEAKER - (412) 375-9203.

High-end and hard-to-find audio components bought and sold. All types. New and used. Daily specials. Closeouts. Best prices! AUDIO AMERICA (Virginia). Call 1-900-776-5777.



SING WITH THE WORLD'S BEST BANDS! An Unlimited supply of Backgrounds from standard stereo records! Record with your voice or perform live with the backgrounds. Used in Professional Performance yet connects easily to a home component stereo. This unique product is manufactured and sold Exclusively by LT Sound - Not sold through dealers. Call or write for a Free Brochure and Demo Record. LT Sound, Dept. SR-6, 7980 LT Parkway Litheria, GA 30058 (404)482-4724 Manufactured and Sold Exclusively by LT Sound 24 HOUR PHONE DEMO LINE: 404-482-2485

CAR/HOME/VIDEO for: DENON, SONY, INFINITY, AUDIO CONTROL, VELODYNE, CWD, COUSTIC, BAZOOKA, ADCOM, KICKER & ADVENT. Full line authorized dealer. Call (800) 321-0685 for prices and orders. (301) 786-4103 for info and consultations. C&C Audio/Video 11am-9pm Mon-Sat EST.

"STEREO WORLD" IS YOUR DISCOUNT SOUND SOURCE WITH SUPER DEALS ON HOME AND CAR STEREO LINES INCLUDING: KENWOOD, TECHNICS, PANASONIC, JVC, SONY, PYLE, MTX, EARTHQUAKE, PIONEER, SHERWOOD, JBL, HIFONICS, BLAUPUNKT, AUTOTEK, ADVENT, ALPHASONIK, SCOSCHE EPX AND MANY OTHERS. CALL OR WRITE FOR FREE CATALOG. FREE UPS IN 48 STATES. 10AM-6PM MON-FRI; VISA/MC; COD ACCEPTED. P.O. BOX 596, MONROE, NY 10950 (914) 782-6044.

FOR SALE

LOW PRICES!!! NAD, DENON, HK, NAKAMICHI, CARVER, BOSTON ACOUSTICS, LUXMAN, HAFLER, ADS, B&K, ONKYO, PROTON, BOSE, SNELL, JBL, M&K, PS AUDIO & OTHERS!! SOUND ADVICE: (414)727-0071. OPEN SUNDAYS!!!

FOR SALE

IN-WALL STEREO SPEAKERS. All major brands IN STOCK. Quantity discounts. Contractors welcome. Fast delivery. **THE SOUND APPROACH**, 6067 Jericho Tpke., Commack, NY 11725 800-368-2344.

INSTRUCTION

FREE CATALOG. Institute of Audio/Video Engineering. 1831 Hyperion (SR), Hollywood, CA 90027. **RECORDING SCHOOL.** (800) 551-8877, (213) 666-2380. Approved for International Students. Member of NATTS.

COMPACT DISCS

OVER 12000 USED CDs \$3.99 TO \$9.99. Buy/Sell, 6th Year, Visa/MC. Send \$2 for 24 page catalog. **AUDIO HOUSE**, 4304B Bryan, Swartz Creek, Michigan 48473 (313) 655-8639

LIKE-NEW CD'S \$4.99. UP. We pay you up to \$7.00! FREE STOCKLIST: CCM-SR, 1105 Webster, Sandy, Utah 84094-3151. (801) 571-9767.

COMPACT DISC PRICES STARTING AT \$5.99. SEND \$2 FOR CATALOG. REFUNDABLE WITH ORDER. **HARRIS HOUSE OF MUSIC**, BOX 388759, DEPT SR, CHICAGO, IL 60638

THE BINAURAL SOURCE—Exclusive one-stop source of true binaural recordings for startling headphone listening (also speaker-compatible). Classical/jazz/drama/sound environments albums: 43 recordings in all three formats, from U.S. & Germany. Visa/MC Accepted. Free catalog: Box 1727SR, Ross, CA 94957 (415) 457-9052.

DISCOUNT COMPACT DISCS!! Telarc \$11.99/cd; Chesky \$10.99/cd; DMP, Reference & Sheffield \$11.99/cd! Hundreds of other labels at low prices. Send SASE for catalog or your order with Visa / MC / Disc / Check + \$4 shipping to: **THE ACME COMPACT DISC COMPANY**, P.O. BOX 7004, EVANSTON, IL 60204.

LOW PRICES ON NEW CDs. Major/Independent Labels. **MASTERCARD/VISA**. SEND SASE for pricing information. **WAVEBREAKER MUSIC**, PO Box 564, Totowa, NJ 07511-0564 (201) 595-0831.

23,000 IMPORT CDs! Catalogue with 23,000 European/Japanese imports \$10. Or send \$2 for CD Magazine with 2,500 new releases. **COMPACT DISC EUROPE-SR**, 1009 S.E. 10 Court, Deerfield Beach, Florida 33441.

GOT MORE MUSIC THAN YOU CAN KEEP UP WITH? **MUSICFINDER** will index your music library. \$39.95. Write Box 855, Groveton, Texas 75845 for brochure.

CD FIXX

Restores Skipping CD's
Repairs Scratched CD's
Reduces Tracking Errors
Increases Laser Life
\$19.95
Plus S & H
CLEANS • POLISHES • PROTECTS
1-800-878-FIXX

Money Back If Not Satisfied

WE BUY AND SELL USED/NEW COMPACT DISCS. WRITE CDCS, 551 VALLEY ROAD, SUITE 124, UPPER MONTCLAIR, NJ 07043. PHONE/FAX (201) 857-7872.

ANY DOMESTIC CD AT \$1 ABOVE COST PER DISC/For price information (201) 423-6164 or order by check or m.c. (shipping at cost) to B.A.C.D., Dept. R, P.O. Box 339, Hawthorne, NJ 07507.



ORGANIZE AND PROTECT 162 CDs in the 'AudioFile' CD Storage Chest with flip file drawers. Write to: Old Crossing Classics, Box 552, Crookston, MN 56716 or call: 1-800-745-6247.

CLASSIC ROCK CD'S! BUILD YOUR CD COLLECTION OF ROCK/OLDIES! OVER 5000 TITLES! FREE CATALOG! 1-407-840-0590.

INVENTIONS WANTED

INVENTIONS / NEW PRODUCTS / IDEAS WANTED: Call TLCI for free information 1-800-468-7200, 24 hours/day—USA/CANADA.

MOVIES/FILMS/VIDEOS

ARE YOU TIRED OF PAYING A HIGH MONTHLY CABLE FEE? WE STOCK ALL MAKES & MODELS OF CABLE EQUIPMENT. FOR FREE CATALOG SEND SASE TO: CABLE-TRONICS, INC., 1304 EAST ALGONQUIN RD., SUITE 501, ALGONQUIN, IL 60102 OR CALL (800) 232-5017. VISA/MC/COD. NO ILLINOIS ORDERS.

Cable TV Descramblers, Converters, Accessories. Name Brands. Lowest prices. Best service. Call **CABLE READY COMPANY**, (800) 234-1006 for FREE 16-page color catalog.

CABLE TV CONVERTERS AND DESCRAMBLERS DISCOUNT CENTER! ALL MAKES AND MODELS. FREE CATALOG! VIDEO-TECH, 3702 S. VIRGINIA, #160-304, RENO, NEVADA 89502. ORDER TODAY! (800) 562-6884 VISA/MC/COD.

BLANK TAPES

4.95 SHIPPING ANY SIZE ORDER. DETAILS BELOW 1-800-245-6000

TDK	DENON	OCTAVE	FUJISONY	MAXELL
SA-110 244	DA-110 244	SE-110 244	FLUX DAT 120	3.15
SA-90 319	DA-90 319	SE-90 319	FLUX FR-METAL 90	2.99
SA-90 229	DA-90 229	SE-90 229	FLUX 90-90	2.99
SA-90 229	DA-90 229	SE-90 229	SONY METAL 90 3.99	2.79
AR-100 229	DA-100 229	SE-100 229	SONY METAL 90-100 2.29	1.99
SA-100 229	DA-100 229	SE-100 229	SONY DAT 750	10.99
SA-90 1.99	DA-90 1.99	SE-90 1.99	SONY U-90 90	2.49
SA-110 1.99	DA-110 1.99	SE-110 1.99	SONY U-110 110	2.49
AD-90 1.50	DA-90 1.50	SE-90 1.50	FLUX 720P	2.79
AR-90 1.50	DA-90 1.50	SE-90 1.50	FLUX 720P	2.79
O-90 1.50	DA-90 1.50	SE-90 1.50	MAE 720P	2.99
SA-120 1.99	DA-120 1.99	SE-120 1.99	FLUX 720P PRO	3.99
SA-120 1.99	DA-120 1.99	SE-120 1.99	FLUX 720P VHS	3.99
SA-120 1.99	DA-120 1.99	SE-120 1.99	FLUX 720P VHS	3.99
SA-120 1.99	DA-120 1.99	SE-120 1.99	FLUX 720P VHS	3.99

WE WILL SHIP ANY TYPE OF THE TOTAL ORDER INCLUDING ALL SHIPPING & HANDLING CHARGES BY 1% & 9% SHIPPING TO A BUSINESS ADDRESS. Shipping to a Residence is \$4.95 for 1-20 Tapes, \$9.95 for 21 or more. C.O.D. For \$2.75 per Package All Taxes Here. U.S. Warehouses. Parcel Post S&H Call. FAX 419-253-0298 847-805-5400 419-955-0211 800-245-6000

TAPE WORLD 228 SPRING ST. BOX 381 BUTLER, PA 15003-2361
DEALER PRICING ON DEMAND. TRUCK, DISC WASH & OILY

CAR STEREO



World Wide Electronics
43 Racial Court, S.I., NY 10314

Hours Monday—Friday 10 AM-7 PM
Sunday 12 PM-5 PM
"THE CALL THAT SAVES YOU MONEY"

- 718-370-1303
HIGH-END AT LOWEST PRICES
- WE MAINTAIN THE MOST REASONABLE PRICES ON 75 DIFFERENT BRANDS.
 - CALL & LET US WORKOUT THE BEST DEAL FOR YOU.
 - ALL PRODUCTS ARE AMERICAN MODELS.
 - 7 DAY MONEY BACK GUARANTEE.

CAR & HOME STEREO

- | | | |
|-----------------|---------------|------------------|
| ABC | COUNTERPOINT | OHM |
| ADCOM | CLOUSTIC | ONKYO |
| ADS | DBX | ORION |
| ADVENT | DENON | PARADIGM |
| ALPINE | HAFER | PHASE LINEAR |
| ALTEC LANSING | HARMON KARDON | PHILIPS |
| AR | HIFONICS | PINNACLE |
| AUDIO CONTROL | INFINITY | PIONEER |
| AUTOTECH | JBL | POLK |
| BAZOOKA | JVC | PRECISION POWER |
| B&K | KENWOOD | PROTON |
| B&O | KEF | PS AUDIO |
| B&W | KICKER | PYLE |
| BLAUPUNKT | KLIPSCH | ROCKFORD FOSGATE |
| BOSTON ACOUSTIC | LEXICON | SHERWOOD |
| BOSE | LUXMON | SONY |
| CARVER | MARANTZ | SONYES |
| CELESTION | MB QUART | SOUNDSTREAM |
| CERWIN VEGA | MIRAGE | SUMO |
| CITATION | MTX | TECHNICS |
| CLARION | NAD | THORENS |
| CONCORD | NAKAMICHI | YAMAHA |

Call for our FREE shipping deal.
All products covered by manufacturer or W.E.D. exclusive warranty.
Extended warranty available.

ATTENTION: If you are buying car audio & you're not buying from us you're paying too much. Call for pricing on Orion, Soundstream, Concord, Blaupunkt, Lanzar, Earhquake, Gold-sound, KLV Audio & much more. **LOWEST PRICES GUARANTEED!** Call 1-800-933-5198.

CAR

- Alpine
- Carver
- Sony
- Yamaha
- Rockford Fosgate
- Nakamichi
- Boston Acoustics
- Audio Control
- Polk Audio
- Precision Power
- Kenwood
- MB Quart
- ADS
- Soundstream
- Autotek
- Coustic
- Bazooka
- Infinity

ADCOM	CARVER	PARADIGM
GTP 400.....\$305	HR 752.....\$549	3se mini.....\$200 pr.
GTP 500 II.....479	HR 722.....465	3se.....239
GFP 565.....625	HR 772.....635	9se II.....520 pr.
GFA 535.....259	CT-6.....439	5se II.....349 pr.
GFA 545 II.....399	CT-17.....659	7se II.....389 pr.
GFA 555 II.....599	C-16.....579	11 se II.....639 pr.
GCD 575.....479	TFM 22.....499	
ACE 515.....150	TFM 25.....549	
GFT 555 II.....259	TFM 42.....699	

POLK

YAMAHA	CM-1090	RTA-11TL
RX 85C.....Call	Silver Seven T.....799	RM 3000.....\$569
RX 750.....Call	TLM 3600.....559	M 12.....769 pr.
RXV 1050.....Call	TL 3220.....425	M 10.....579 pr.
AVX 700.....519		M 7.....449 pr.
AVX 500.....430		M 5.....349 pr.
AX 430.....239		M 4.....159 pr.
CDX 530.....199		
CDX 730.....249		
CDX 805.....Call		
CDX 745.....319		
KXR 730.....399		
KXR 430.....279		
KX 230.....219		

NAKAMICHI

AUD SOURCE

- SS 2.....\$200
- SS 3.....299
- Eq 10.....340
- Amp 1.....240

CELESTION

DL Series. Authorized Models 3 & 5.....Call

***Call for Super Savings on Car Audio**

All products covered by manufacturer's warranty or B. J. Audio's exclusive limited warranty. Ask for full details at the time of purchase.

"The Quick Connection"
B.J. AUDIO
991 Beachmeadow Lane
Cincinnati, OH 45238
(513) 451-0112



CAR STEREO'S... **LOWEST PRICES GUARANTEED!** Alpine, Clarion, Rockford Fosgate, Kicker, JL Audio, MTX, JVC, JBL, ADS, Impact, Pioneer, Pioneer Premiere, Autotek, Code Alarm, Whistler, M/C, VISA or COD. FOR PRICES & ORDERS ONLY CALL STEREO WAREHOUSE NOW!1-800-284-5596..... NO CATALOGS.

GUARANTEED LOWEST PRICES ON CAR STEREO. IF YOU'RE NOT BUYING FROM US YOU'RE PAYING TOO MUCH! AUTOSOUND (912) 923-2236.

WANTED TO BUY

LP's & CD's BOUGHT & SOLD: Classical, Rock, Jazz, Audiophile, Etc. **PRINCETON RECORD EXCHANGE**, 20 Tulane St., Princeton, N.J. 08542. (609) 921-0881.

LASER VIDEO'S VHS

USED LASER DISC CLEARANCE. WE BUY, SELL & TRADE. FREE CATALOG. VDI/J, 5339 PROSPECT #221, SAN JOSE, CA 95129.

MISCELLANEOUS

TERMPAPER assistance. 19,278 papers available! 306-page catalog—rush \$2.00. Research, 11322 Idaho, #206SX, Los Angeles 90025. TOLL FREE HOTLINE: (800) 351-0222 (California: 213-477-8226).

CLASSICAL MUSIC LOVERS' EXCHANGE®. Nationwide link between unattached music lovers. Write CMLE, Box 31, Pelham, NY 10963. (800) 233-CMLS.

BUSINESS OPPORTUNITIES

MAILORDER OPPORTUNITY! Start profitable home business without experience or capital. Information free. Mail Order Associates, Inc., Dept. 766, Montvale, NJ 07645.

EASY WORK! EXCELLENT PAY! ASSEMBLE PRODUCTS AT HOME. CALL FOR INFORMATION 504-641-8003 EXT. 11331.

AUDIO/VIDEO STORAGE

STORAGE CABINETS for CD's, Cassettes & Videos. SOLID Wood, Glass Doors. FREE Literature. Soricé, Box 747-R, Nutley, NJ 07110 1-800-432-8005.

STEREO REVIEW MAIL ORDER MART



- Prices subject to change
- Prices exclude shipping charges
- Not responsible for typographical errors

FOR FASTEST SERVICE CALL **(212) 684-6363** OR **FAX (212) 684-8046**
CALL FOR NEWEST MODELS & PRICES

CD PLAYERS	NAKAMICHI	CASSETTE DECKS	ADCOM
YAMAHA CDC615 New 259 CDC610 469 CC0705 339 CNC805 429 CDX550 New 239 CDX750 New 299 CDX930 449 CDX1030 569	Receiver 1 New 819 Receiver 2 New 559 Receiver 3 New 339 NAD 7000 479 7225 279 7240 429 7100X 629 7400 849	YAMAHA KXR730 419 KX530 339 KXR430 279 KX330 249 KXW900 549 KXW602 419 KXW232 279 KX930 New 499	GFT555 269 GTP400 309 GTP500 489 GPA535 289 GPA545 429 GPA555 629 GCD575 489 GFP565 679 GPA565 699ea
DENON DCM350 279 DCM450 359 DCM777 649 DCD1560 499 DCD560 New 199 DCD670 New 239 DCD660 249 DCD860 329 DCD2560 549 DCD970 New 329	PIONEER SX1900 New 169 SX2800 New 199 SX2900 New 239 VSX3600 309 VSX4700S 429 VSX5700S 489 VSX9700S 699 VSXD15 899	DENON ORM510 New 169 ORM600 299 ORM700A 329 ORM800A 399 DRW850 399 DRW750 329 ORR680 329 ORR780 New 319 ORR830 New 299	DENON AVP500 Call P0A5000 Call PMA1060 479 PMA860 319 PMA560 269 POA2400 549 POA800 249 AVC1000 559 AVC3020 New 799
SONY CDP590 169 CDP690 209 CDP790 239 CDP990 359 CDP505 249 CDP705 299	LOUDESPEAKERS Call For Prices on Boston. KEF Polk ADVENT HERITAGE 499 LAUREATE New 439 LEGACY 349 PRODIGY 249 BABY 159	NAKAMICHI Cassette Deck 1 729 Cassette Deck 2 339 RX202 729 RX505 1278 CR7A 1499 Dragon 1999	CAR STEREO NAKAMICHI TAPE DECK 1 659 TAPE DECK 2 499 TAPE DECK 3 349 POWER PORT 1 129 POWER PORT 2 119 POWER PORT 3 40 CD TUNER 599
PIONEER PDM435 199 PDM530 229 PDM630 299 PDM730 399 PD4550 149 PD5500 169 PD6500 249 PD8500 419	BOSE 101 159 Roomate II 259 901 Classic 1199 AM5 629	JVC TDW203 149 TDW303 179 TDW503 209 TDW901 349 TDV521 279 TDR431 189	ALPINE 7168 199 7269 259 7288 399 7380 289 7903 449 7909 592 7912 3321 3543 429 3554 369 3541 199 3308 109 7192 269 3543 429 3554 369 3541 199 6205 99 6266 79 6392 Call 7294S New 7516 369
NAD 5325 249 5340 329 5100 419 5060 329 5300 759	JBL LX22 149 LX44 469 LX55 659 2600 199 2800 279	AIWA ADF800 299 ADF300 109 ADWX888 309 ADWX333 259 ADWX777 129 ADF400 138 ADS37 129	Available in June 1991 PA304 389 SP10 149 SP50 119 SP60 199 SP60 139 SP65 259 PA301 389 SP40 109 SP55 199 SP1010 149ea SP65 259
MAGNAVOX CDB490 109 CDB583 199 CDB552 229 CDB624 279	CANTON GL260 / GL300 399 KARAT920 New 629 KARAT930 New 829 KARAT940 New 1048 KARAT960 New 1279 ERG070 New 1279 ERG080 New 1699 PLUS S 279 PLUS C 479	PIONEER CT6R 329 CTW430 129 CTW530R 179 CTW630R 239 CTW830R 339	SONY CDXA15 329 CDXA15RF 399 CDXA100 499 CDX7560 359 XR6087 189 XR6088 139 CDX5040 319 XE8 249 XR7180 299 XR7280 369 XR7070 299
RECEIVERS YAMAHA RX350 209 RX450 New 259 RX550 New 339 RX750 New 449 RXV850 New 679 RXV1050 New 999	CELESTION SL12SI 1249 SL600 SI 1499 SL6S I 749 DL6 II 329 DL4 II 249 Model 3 229 Model 5 New 329	AMPS & TUNERS YAMAHA AX450 New Call AX550 New 549 AVX700 New 549 MX630 429 MX630 679 MXM70 Call AX930 Call AX630 369 AX730 Call CX630 359 CX830 559 TX540 269 TX930 339 DSR70PRD 199 EQ70 149 AVS700 249 DSPE300 669	SONY CDXA15 329 CDXA15RF 399 CDXA100 499 CDX7560 359 XR4257 189 XR6087 139 XR7500 379 CDX5040 319 CDX5080 349 XE8 249 XE90 149 XR7180 299 XR7280 369 XR7070 299 XR5600 239
DENON AVR1010 New 749 DRA335 219 DRA435 279 DRA635 New 379 DRA835 New 559 DRA1035 New 749	INFINITY REF 1 179 REF 2 279 REF 3 349 REF 4 499 REF 5 599 REF 6 659 Call For Prices on Kappa and SM	SONY 1600 319 2200PE 529 3225PE 209 3240PE 329 3400 679	SONY CDXA15RF 399 CDX6020 299 XR4257 189 XR7500 379 CDX5080 349 XE90 149 XR7280 369 XR5600 239 PIONEER KE2828 129 KE1700DR 169 KE2700DR 189 KE4848 189 KEH6668 189 KEH7878 209 KE3700DR 209 KEH9898 249 KEHM3000DR 249 KE3838 139 DEH750 369 KEH1000DR 339 KEXM800 469
SONY STRV220 159 STRV320 179 STRV720 289 STRV920 389 STRD2020 749			ALPINE 7168 199 7269 259 7288 399 7380 289 7903 449 7909 592 7912 3321 3543 429 3554 369 3541 199 3308 109 7192 269 3543 429 3554 369 3541 199 6205 99 6266 79 6392 Call 7294S New 7516 369

We sell authorized U.S. branded merchandise and parallel imports. All products covered by manufacturer's warranty or New York Wholesaler's exclusive limited warranty. Manufacturer's rebates may not apply. Ask for full details at the time of purchase.

Index to Advertisers

Reader Service No.	Advertiser	Page Number
—	Acoustic Research.....	58
2	Adcom.....	7
21	Altec Lansing.....	22-23
—	American Audio.....	95
1	API-Energy.....	78
—	AT&T.....	2
—	B.I.C. America.....	12
3	Blaupunkt.....	Cover 3
—	BMG-CD Club.....	17
—	Bose.....	Cover 2, 1
—	Bose.....	40-41, 72
—	Bose Express Music.....	81
—	Boston Acoustics.....	13
19	Cambridge Sound Works.....	69
—	Carver.....	37
4	Clarion.....	46-47
—	Columbia House-CD Club.....	28a, b
—	Crutchfield.....	8
—	Datawave.....	77
—	Denon.....	33
—	George Dickel.....	26
5	Electronics Wholesalers.....	93
—	Ford Audio.....	75
6	Hughes.....	Cover 4
—	Illinois Audio.....	88
—	Infinity.....	57
7	J&R Music World.....	86-87
8	JBL.....	35
—	Jensen.....	6
9	Kenwood.....	25
10	Klipsch.....	67
11	M&K.....	20
12	McIntosh.....	71
13	Mitsubishi.....	30-31
14	Mobile Fidelity.....	84
15	Panasonic.....	39
16	Pioneer.....	45
17	Polk Audio.....	9-11
18	Pyle.....	83
—	Radio Shack.....	14
—	6th Avenue Electronics.....	90-91
—	Sony.....	4-5
—	TDK.....	18-19
—	Wisconsin Discount Stereo.....	96
—	Yamaha.....	43

ATTENTION STEREO REVIEW ADVERTISERS

The STEREO REVIEW Mail Order Mart is an ideal forum to reach interested audio/video enthusiasts who are active buyers themselves, and who advise others on stereo and video purchases. The Mail Order Mart is an exclusive section designed to showcase your advertising in STEREO REVIEW. To place your ads, or for further information call Toll Free at:

1-(800) 445-6066 9am. to 5pm. est

June

FROM WOODSTOCK TO NASHVILLE, BLAUPUNKT TAKES CENTER STAGE.



When the music of America plays, so does Blaupunkt.

And two star performers are the Woodstock CM 20 with removable chassis and the Nashville CM 40 — Blaupunkt's new, under \$400, AM/FM cassette receivers with CD Changer control.

Install a Woodstock or Nashville and enjoy the brilliant clarity of Blaupunkt sound, whether you're listening to your favorite cassette or radio station. The real performance begins when you integrate either receiver with our CDC 01 compact disc changer. The Woodstock or Nashville will program and play up to 12 compact discs in any desired order or track combination.

Blaupunkt's technology is renowned for delivering outstanding tuner performance. Each tuner yields an exceptional frequency response of 35 Hz to 16 kHz, with FM Preset Scan, and Travel Store, which automatically finds the strongest FM

stations and loads them into memory presets.

Each cassette deck offers headliner features like auto reverse, Cassette Program Search and Dolby B noise reduction. The amplifiers are power plus — the Woodstock — a powerful 20 watts; the Nashville — an even more powerful 40 watts. And both may be easily upgraded with the built-in, true 4-channel, RCA pre-amp output.

Your response on hearing them will be tumultuous applause.

For a dealer near you, call 1-800-237-7999. Whatever part of the country you live in, the best sound in the country is Blaupunkt.

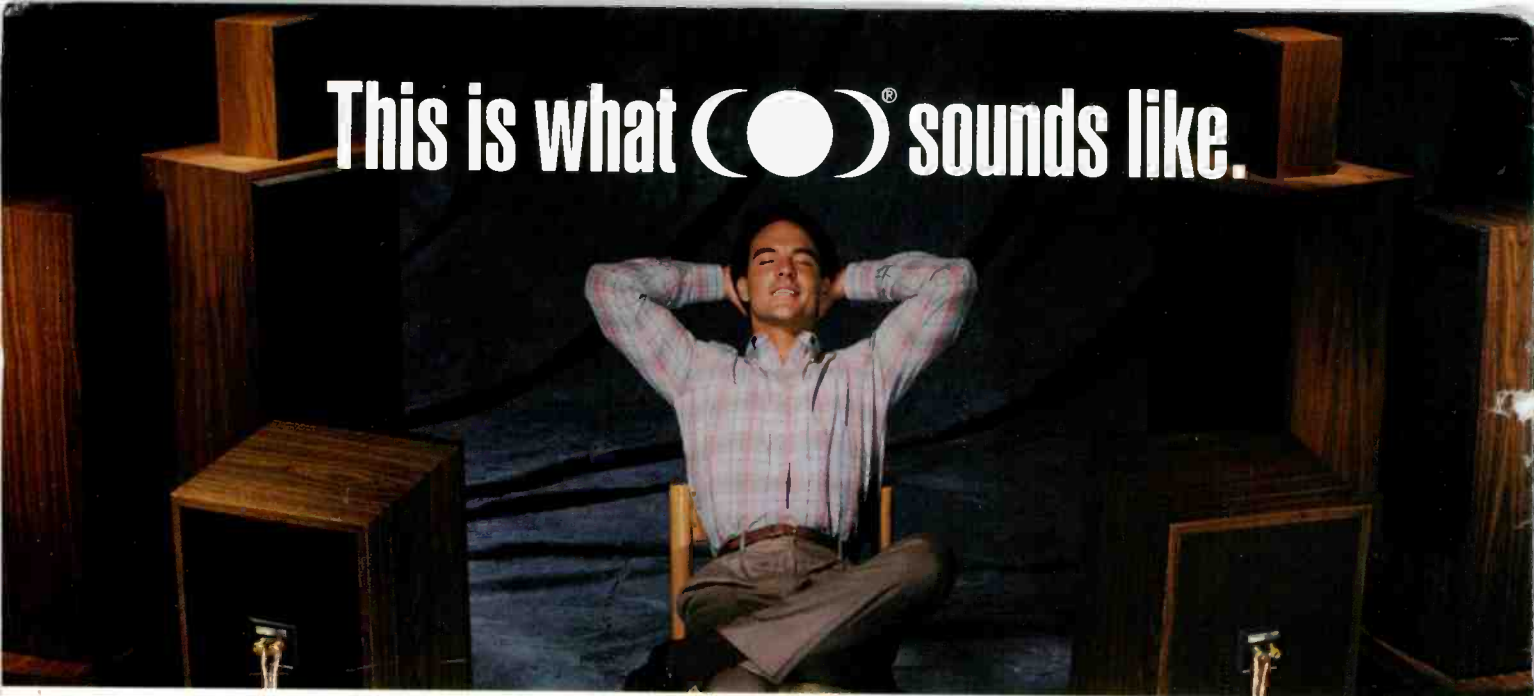
BLAUPUNKT
Bosch Telecom
The difference is pronounced.™

The Blaupunkt name and BLUE DOT symbol are registered trademarks of Blaupunkt—Werke GmbH Bosch Telecom.

© 1990 Robert Bosch Corporation

CIRCLE NO. 3 ON READER SERVICE CARD

This is what (●)® sounds like.



This is what (●) looks like.

(●) is the symbol for the Sound Retrieval System that lets you experience true 3-D audio realism from two ordinary loudspeakers. And now, this amazing technology is available for hi-fi, as well as home theater applications.

The new AK-100 will immediately upgrade your investment in your entertainment system. It's easy to install and is compatible with mono, stereo and even surround-type coded material.

As Len Feldman said in *Video Review/March '91*, "Perhaps the most effective stereo enhancement system, one that even simulates full surround sound."

To experience the uncanny realism of this new kind of sound is...well, uncanny. You can get up and walk around the room and the sound image doesn't change. You don't have to stay in the "sweet spot", nor surround yourself with numerous speakers.

As Len Feldman wrote in *Radio Electronics*, "The demonstration was so dramatic and effective that people couldn't help but look for additional hidden speakers." Ken Pohlmann in *Stereo Review*, said "...the effect blew me away." Daniel Gravereaux, former president of the Audio Engineering Society said, "...knocked my socks off."

So forget expensive decoders and multi-speaker matrices. To restore 3-D audio realism, you don't need to discard your present hi-fi system or sacrifice a lot of living space for a room full of speakers. All you need is (●).

Hear (●) for yourself, today. Call HUGHES AUDIO PRODUCTS at 1-800-2-HEAR-3D.

HUGHES

Subsidiary of
GM Hughes Electronics

For more information, contact Hughes Microelectronic Systems Division, Audio Product Line, P.O. Box 7000, Rancho Santa Margarita, CA 92688.
(●) and HUGHES AUDIO PRODUCTS are trademarks of Hughes Aircraft Company, a subsidiary of GM Hughes Electronics, © 1991.

CIRCLE NO. 6 ON READER SERVICE CARD