

A Little Bit Better: Inside the New 18-Bit CD Players

HIGH FIDELITY

AUDIO - VIDEO - TEST REPORTS - MUSIC

MAY 1988 \$2.50 USA \$3.50 CANADA

ON THE ROAD AGAIN!

**1988 Car Stereo
Product Roundup**

**Test Drive: Pioneer's
State-of-the-Art
Car CD Changer**

**Lab/Road Tests:
Kenwood Receiver/
Cassette Deck,
Soundstream
Power Amp**

#131C*****5-DIGIT 48240
#40044 9DAL24# 15 SEP88
2VK02 10449 DAL92 HIF AJ
JOHN R VEKOFF
20449 DALBY
REDFORD HTS MI 48240



TAKE OUT T



THE ELITE M-90 AND C-90 REFERENCE COMPONENTS

Hum, hiss, crosstalk, vibration: distortion in your audio signal.

Graininess, specks, flecks, jitter: extraneous noise in your video image.

Garbage.

The Elite C-90 pre-amp and M-90 power amp are no-compromise components designed to get rid of it. By keeping critical signal paths as short as possible. By offering you direct CD connection. By introducing motorized volume control, separate audio and video power

transformers, and unique video processing controls like noise reduction, sharpness and detail. By giving you the purest possible audio and video that digital technology has to offer.

In the words of audio critic Julian Hirsch in *Stereo Review*, "The C-90's signal to noise ratio is considerably better than that of any CD player...that makes the C-90 the *true peer* of any digital sound source—the only pre-amplifier we have tested that can make that claim."

The C-90 also cleans up your video. Because it



*Measured by EIA method. **Based on FTC rules regarding measurement of amplifier power ratings.

THE GARBAGE.



not only controls up to six video components, its video-enhancing circuits actually improve your video image. Now, even rented videotapes take on a whole new look.

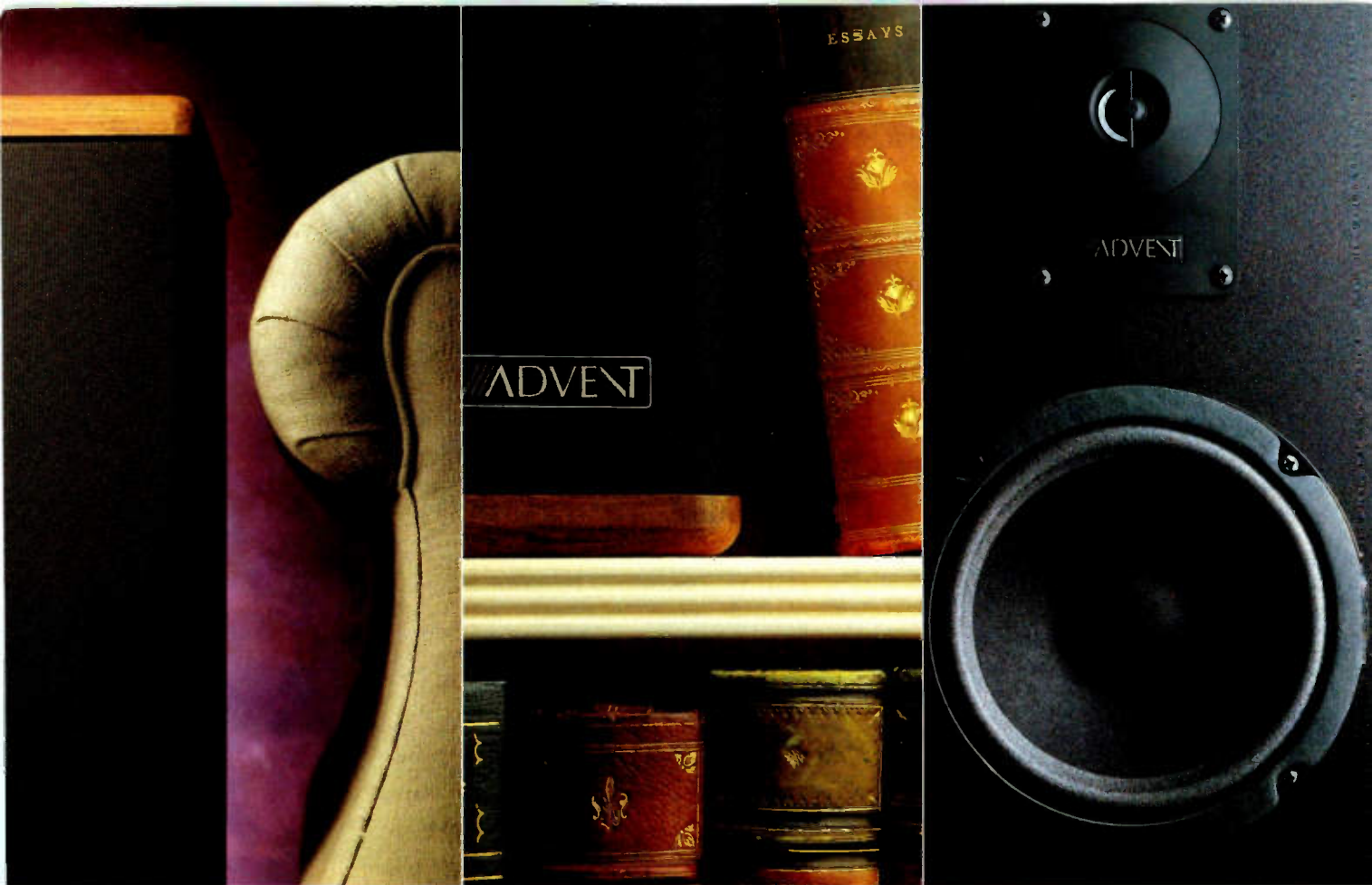
But what good is a complete A/V system without remote capabilities? The C-90's "SR"TM System Remote gives you complete control, plus a unique Motor-Drive Volume Control that eliminates the noise created by typical electronic volume controls.

Where the C-90 leaves off, the M-90 takes over. With 800 watts/channel into 2 ohm loads; 200 watts into 8 ohms;* and remarkably high current capability (47 amps) for low impedance

driving, the M-90 delivers the kind of performance digital signals demand. And for unprecedented purity, the M-90 even includes its own volume control for direct connection to your CD player.

The Elite M-90 and C-90 working together. There's just no better way to take out the garbage. For more information, call 1-800-421-1404.





FROM THE PEOPLE WHO GIVE YOU ACCURATE SOUND, NOW COMES MORE ROOM TO ENJOY IT.

INTRODUCING THREE SPACE-SAVING LOUDSPEAKERS FROM ADVENT. Now you can enjoy the accurate sound of Advent® in more places than ever. Our three new speakers give you the clean, clear sound you expect from Advent, yet take up less space to do it.

THE MINI-ADVENT AND MINI-ADVENT SUBWOOFER SYSTEM. Mini-Advents are the perfect size for bookshelves. Desks. Even walls and ceilings, using our optional mounting brackets. They're small, but get big sound with 5¼" high excursion woofers, polycarbonate tweeters, 120 watts peak power and a tuned bass port. Or, add our subwoofer. It gives Mini-Advents the bass of a much larger system and creates exceptional stereo imaging for audio/video or surround sound systems.

THE PRODIGY TOWER. Taller and thinner than our still-famous Advent Prodigy, the Prodigy Tower gets maximum sound using minimum floorspace. How? With 300 watts

peak power, a more efficient 8" woofer and a polycarbonate dome tweeter for improved dispersion.

THE BABY II. Last, but not littlest, is the improved Baby Advent. Just as compact as the original Baby, but with a couple of changes that show it's maturing quite nicely. Like a ferrofluid-filled polycarbonate dome tweeter and re-adjustable logo for horizontal and vertical speaker placement.

All three new Advents have natural wood tops and bases. Even if you never hooked them up, they'd make great looking furniture.

Come in to your nearest Advent dealer and listen to the new Mini-Advent, Prodigy Tower and Baby Advent. And don't worry about the crowds. With these speakers, there's always plenty of room.



ADVENT®
Sound as it was meant to be heard.



HIGH FIDELITY

AUDIO • VIDEO • TEST REPORTS • MUSIC

MAY 1988

VOL. 38 NO. 5



Tested: Yamaha CD-V player, four more 23

Alfred Brendel: Going his own way 46

The shock of the short! 62

TEST REPORTS

Yamaha CDV-1000 Compact Disc/vidéodisc player	23
Kenwood KRC-858 car-stereo receiver/cassette deck	27
NEC A-910 integrated amplifier	31
Ohm Sound Cylinder loudspeaker	34
Soundstream D-100 car-stereo power amplifier	35

AUDIO & VIDEO

Car Audio Tunes Up. As summer approaches, be prepared for hot days, warm nights, and cool new autosound products./JAY C. TAYLOR	37
Golden Rulers. The basic vocabulary of digital-to-analog converter specifications./DAVID RANADA	42

MUSIC

CLASSICAL Fame's Catching Up With Alfred Brendel. A conversation with a principled—and ever more popular—pianist./SCOTT CANTRELL	46
Open Sesame. Angel EMI mines the vaults for its midprice CD series. DAVID HURWITZ	50
POPULAR/BACKBEAT Invasion of the Mini-Reviews. First came Don Siegel's 1956 original. Then came Philip Kaufman's 1978 remake. Now BACKBEAT presents the most amazing version of them all!	62

COLUMNS

Front Lines The future of car stereo (if it has one). MICHAEL RIGGS	5
Crosstalk Solid-state warm-up: Techtron receivers./LARRY KLEIN	14
Bits & Pieces Using a portable DAT machine./DAVID RANADA	16
The Autophile Test drive: Pioneer CD changer system. CHRISTOPHER J. ESSE	17
Tape Tracks Inquiring minds want to know: What tape do you use? ROBERT LONG	19
Medley Robert Shaw: a legend in his own time./THEODORE W. LIBBEY, JR. For jazz, Kansas City and St. Louis are dead. Not so little Columbia. JONATHAN W. POSES	45

DEPARTMENTS

Letters	6
Currents NEC adds NR to S-VHS: Sony's 18-bit CD player.	13
The CD Spread Mozart serenades from the Netherlands Winds; Bernstein's new Sibelius Second.	52
Classical Reviews Olaf Baer joins the ranks of the great lieder singers; Isaac Stern performs Davies and Dutilleux; Horowitz plays Mozart.	54
Advertising Index	71

On the cover (clockwise from top): Pioneer's CDX-M100 car CD changer with matching KEX-M700 head unit, Kenwood's KRC-858 car receiver/cassette deck, and Soundstream's D-100 car power amplifier.



Cover design: Joanne Goodfellow
Cover photo: David Wagner
Jaguar XJ-S courtesy of Rallye Motors, Inc., Paramus, New Jersey

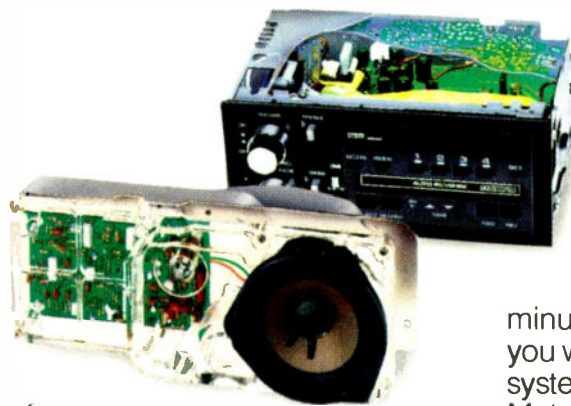
HIGH FIDELITY (ISSN 0018-1455) is published monthly at 825 Seventh Ave., New York, N.Y. 10019 by ABC Consumer Magazines, Inc., a division of ABC Publishing, Inc., a Capital Cities/ABC, Inc. company. © 1988 by ABC Consumer Magazines, Inc. The design and contents are fully protected by copyright and must not be reproduced in any manner. Second class postage paid at New York, New York, and at additional mailing offices. Authorized as second-class mail by the Post Office Department, Ottawa, and for payment of postage in cash. Yearly subscription in the U.S.A. and Possessions \$13.95, elsewhere \$20.95. Single copies \$2.50 (Canada \$3.50). Subscribers: Send subscription inquiries and address changes to HIGH FIDELITY, P.O. Box 10759, Des Moines, Iowa 50340. Change of address: Give old and new addresses, including ZIP codes. Enclose an address label from last issue and allow four weeks for change to become effective. POSTMASTER: Send change of address to HIGH FIDELITY, P.O. Box 10759, Des Moines, IA 50340.



Sometimes you just have to be there.

If you have never experienced it, you cannot believe the beauty of a sunrise in the mountains—or the fresh scent of clean mountain air.

Few have ever experienced the effect of superbly reproduced music of their choice played in the private environment of their automobile. Music, reproduced with lifelike quality, has the power to touch our deepest emotions and to elevate our moods. And this to an extent that is not expected.



Our experience has convinced us that, regardless of your interest in music, you will require less than one minute of listening to know that you want the Delco/Bose music system in your next General Motors* car.

Through this listening experience you will also appreciate why the Delco/Bose system is the most highly reviewed music system available.



Sound so real, it will change how you feel about driving.

* Available in selected models.

BOSE
Better sound through research.

Delco Electronics
Subsidiary of GM Hughes Electronics
It's who we are.



Car Stereo Of the Future

By Michael Riggs

Car stereo has come a long way from its humble origins. Used to be folks talked about getting a *radio*—strictly AM, in the old days, and strictly mono. Today, no doubt, some people have better sound in their cars than in their homes.

I don't know who was responsible for the first car radio—a car manufacturer, an electronics company, or some enterprising individual. If it wasn't the car makers, they certainly knew a good idea when they saw it, and they made it their own. However, the idea of high fidelity audio in the car definitely came from the audio industry. The companies that popularized component audio equipment for the home introduced innovative gear for the car that drew on the same technology, and the people who had learned to love high-quality sound in their living rooms bought it.

Although the auto makers countered to some extent by providing systems with FM radios, cassette decks, and stereo, they did little to compete with the after-market suppliers on the basis of sheer performance. Only a few years ago did that begin to change, when General Motors introduced the Delco/Bose Music System as an option in certain of its luxury models. Because most of the acoustical work was done by a specialist in that field (Bose) and because each system was designed and equalized specifically for the car model in which it would be installed, the result was strikingly good. It was the first factory-installed stereo system an audiophile could take seriously.

Since then, GM has greatly enlarged the universe of models for which Delco/Bose systems are available, and other auto makers have developed similar products. Ford has partnered with JBL, Chrysler with Infinity, and Acura with Bose (offering what might be called an Alpine/Bose system). Manufacturers of car stereo equipment have counterpunched with everything from CD changers to amplifiers that accept custom equalization modules tailored for specific car models (a good idea being a good idea, no matter who has it first).

As you'll see in Jay Taylor's report on the latest car stereo equipment ("Car Stereo Tunes Up," p. 41), there's no shortage of exciting new gear. DAT players, fiber-optic data and signal connections, and ingenious remote controls are just a few of the good ideas you can expect to see more of in the future. We're especially pleased to see manufacturers working hard at simplifying the operation of their ever more complex and feature-laden wares.

On the other hand, we're concerned about the future of the competition that has led to so many of these improvements. Car manufacturers appear to be making more and more deals with the most innovative companies in the aftermarket. In addition, automobiles are becoming more electronic in almost every respect. As electronic systems become more complex and more closely tied to basic car functions, tight integration of their various ele-

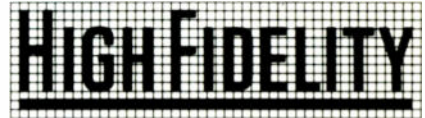
ments becomes increasingly desirable as a means to simpler production, reduced costs, and improved reliability. The temptation must therefore be growing for auto companies to build the radio and control functions of their stereo systems into their cars' core electronics packages, with audio and other signals multiplexed together onto a single fiber-optic network reaching throughout the car. Such a system would be virtually impossible to replace and perhaps very difficult to customize with after-market products as well. Let's hope the auto makers continue to opt for an open, rather than closed, dashboard.

COPY CODE KAPUT

It's all over but the shouting, as the saying goes. After five months of testing, the National Bureau of Standards (NBS) has concluded that CBS's proposed Copy Code system for preventing duplication of prerecorded material is inadequate in all three of the categories in which it was judged. (See "Bits & Pieces," p. 16, for details.) Although bills that would require Copy Code detectors in all DAT decks sold here remain on the docket in Congress, it now seems certain that they will be either shelved or rewritten to eliminate those provisions.

The Bureau's conclusions come as no surprise to us, since they echo what we have been saying all along. We are a little taken aback, however, by the response of the Recording Industry Association of America (RIAA), which gives every appearance of having believed its own claims regarding Copy Code. While the RIAA seems to have abandoned the system in the wake of the NBS report, it has not given up the battle against DAT. Among other things, it has vowed to sue any company that imports DAT decks. This may be nothing more than a delaying tactic, since the RIAA's chances of winning such a case are exceedingly small and the costs of litigation quite large. Nonetheless, it may be effective in keeping DAT at bay a while longer, as manufacturers and the Home Recording Rights Coalition (HRRC) ponder how to respond to this new threat. Few companies will be eager to take on the burden of slugging this issue out with the record industry in court. Still, the chances of DAT making it in this year seem brighter than ever before.

The defeat of Copy Code is significant beyond its influence on the fate of DAT, however. It is the only dubbing-prevention technique yet proposed that could be applied to virtually any medium that carries an audio signal (records, radio, and TV, among others) and to almost any device that records audio (VCRs, for example). We thank the HRRC for its diligence in presenting the case against this noxious scheme. Our hats also come off to those in the industry and the press who did so much to build it—in particular, Len Feldman and our own technical editor, David Ranada. Good work, guys. □



8mm REJOINDER

Reading Robert Long's column on VHS vs. 8mm camcorders ["Tape Tracks," February], I was shocked that neither he, his camera dealer, nor any editor at your magazine knew enough about the subject to prevent such ignorance from seeing print.

Regarding manufacturing: It's not a case of camera companies pushing 8mm while electronics companies push VHS. In fact, only one camera company (Canon) actually builds its own 8mm camcorders. All other 8mm camera brands are made by electronics companies: Pentax and Minolta by Hitachi; Chinon, Kodak, Nikon, and Olympus by Matsushita; Vivitar by Sanyo; Ricoh and Fuji by Sony; and Kyocera by both Hitachi and Sony. JVC is the only electronics company that does not make 8mm equipment, while Sony, Sanyo, and NEC at this time make no VHS camcorders. The 8mm video system was developed specifically as a camcorder format, with cooperation from all the Japanese electronics giants (including JVC) to avoid a replay of the Beta vs. VHS situation. As a result, an 8mm camcorder offers more in a smaller package than VHS, VHS-C, or Beta: two hours of recording time, a better tape-threading and recording mechanism, better sound, and the end of tracking problems.

Regarding Super VHS image quality: Sony's best imaging chip (the one used in its CCD-V9 8mm units) has a resolution of 380,000 pixels. JVC's best chip, used in its full-size S-VHS camcorder, carries the same spec, but the imager used in its S-VHS-C camcorder is rated at only 360,000 pixels. So for the person buying a camcorder today, Super VHS does not offer any clear advantage over 8mm—and it's a lot more expensive.

As far as future breakthroughs are concerned, high-definition television (HDTV) with more than 1,000 lines of resolution already has been developed and is expected to be on the market in some form by 1991. I'm sure HDTV camcorders won't be far behind, making all current formats obsolete. Thus, we'll all end up dubbing our home videos—be they VHS, S-VHS, or 8mm—to HD. For now, my advice is to buy the format that was specifically designed for camcorders: 8mm.

M. R. Gale
Pacific Palisades, Calif.

It is important to distinguish here between marketing and manufacturing. Almost all camcorders in all formats are made by electronics companies, because these companies are the ones with the appropriate

manufacturing capability. At the same time, JVC is not by any means the only electronics company that does not make 8mm equipment. In fact, quite a few electronics companies (Kyocera, for example) buy all their VCRs and camcorders from other manufacturers. That a company was involved in developing the 8mm standard or makes equipment of that type for others does not imply it is an active backer of the 8mm format. The best example is Matsushita. Even though it is the majority stockholder in JVC and does not sell 8mm equipment under any of its own brands, Matsushita builds a large proportion of the 8mm camcorders sold by other companies. We are reminded of an acquaintance's first rule of business: Never turn down money.

The only electronics company that is an active backer of 8mm video, in the sense of putting some marketing muscle behind it, is Sony. The others are camera companies, and even some of those have started to waver. Kodak showed no 8mm equipment at the most recent Consumer Electronics Show, while a couple of previous 8mm stalwarts straddled the fence by introducing VHS gear.

We recognize, as does Mr. Long in his column, the 8mm format's technical advances over previous video recording systems. However, the image quality available from current camcorders of all types is limited mainly by the recording system, not by the optics or the imagers. (See "Scan Lines," March, for more on camcorder imaging chips and pixel specifications.) Consequently, a well-designed S-VHS camcorder should produce a better picture than an 8mm camcorder. This could change, as there is talk of a "Hi-Band" 8mm system with improved performance, but it presumably would require a change in the standard. High-definition camcorders (when such come to be) should be better still, but HDTV is a long ways off, at least for the U.S.—well beyond 1991, we'd say. And as of now, we don't even have camcorders that can do full justice to good old NTSC.—Ed.

THE BEATLES

Thank you, HIGH FIDELITY, for the excellent BACKBEAT reviews of the final five Beatle albums on Compact Disc ["Coming Down Fast," February]. Ken Richardson's statement that "somebody at EMI is certainly confused" is an understatement at best. I only hope somebody at EMI will read and learn from the article. I've found it frustrating that such an important body of work has not been packaged with care from the start. The exception, of course, is the package for Sgt. Pepper's Lonely Hearts Club Band, which shows that

Editor in Chief Michael Riggs
Associate Publisher/Managing Editor Kathleen Green
Art Director Joanne Goodfellow

Copy Editor David Browne
Assistant Managing Editor Jonathan Tesser
Assistant to the Publisher Darleen D. Edwards

TECHNICAL DEPARTMENT

Technical Editor David Ranada
Associate Technical Editor Christopher J. Esse
Editorial Assistant Judith Nichols
Consulting Technical Editors Edward J. Foster, Robert Long
Contributing Editor Larry Klein

MUSIC DEPARTMENT

Classical Music Editor Theodore W. Libbey, Jr.
Popular Music Editor Ken Richardson
Associate Classical Music Editor Patricia Reilly
Assistant Music Editor Arinda J. Segarra
Contributing Editors Robert E. Benson, Leslie Berman, Jim Bessman, Pamela Bloom, Francis Davis, Rev. Thomas L. Dixon, Thor Eckert, Jr., Edward Greenfield, Thomas Hathaway, Paul Hume, David Hurwitz, Paul Moor, John Morthland, Mark Moses, Andrew Nash, Jeff Nesin, Robert R. Reilly, K. Robert Schwarz, Terry Teachout, Noah André Trudeau, Michael Ullman, Richard C. Walls, James Wierzbicki

ART DEPARTMENT

Assistant Art Director Laura Sutcliffe
Technical Art Roy Lindstrom

PRODUCTION DEPARTMENT

Production Manager Marina Paruolo
Atex System Manager Mildred Richardson

CIRCULATION DEPARTMENT

Vice-President, Circulation Robert I. Gursha
Circulation Subscription Staff Ora Blackmon-DeBrown, Joseph DeFalco, Mitch Frank, Tom Link, James J. Smith
Customer Service Kay Harris
Single-Copy Sales A. Heather Wood

Vice-President

Group Publisher/Editorial Director William Tynan

ABC CONSUMER MAGAZINES, INC.

Senior Vice-President Marc Reisch
Senior Vice-President, Advertising Richard J. Marino
Vice-President, Operations Lucian A. Parziale
Vice-President, Production Ilene Berson Weiner

ONE OF THE ABC PUBLISHING COMPANIES

President Robert G. Burton
1330 Avenue of the Americas, New York, N.Y. 10019

HIGH FIDELITY is published monthly by ABC Consumer Magazines Inc., a division of ABC Publishing Inc., a Capital Cities/ABC Inc. company © 1988 ABC Consumer Magazines Inc. Member, Audit Bureau of Circulations. Indexed in Reader's Guide to Periodical Literature. Current and back copies of HIGH FIDELITY are available on microfilm from University Microfilms, Ann Arbor, Mich. 48106. Microfilm copies (1973 forward) are available from Bell & Howell Micro Photo Div., Old Mansfield Rd., Wooster, Ohio 44691.

ADVERTISING OFFICES

New York: ABC Consumer Magazines Inc., 825 Seventh Ave., 8th Fl., New York, N.Y. 10019. Tel. (212) 265-8360. Peter I. Johnsmeyer, Group Advertising Director; Andrew Eisenberg, Associate Advertising Director; James R. McCallum, Advertising Director; Music/Books, Maria Manasi; Classified Advertising Director, Gina Fudger; Advertising Production Manager.
Midwest: HIGH FIDELITY, 580 Waters Edge, Lombard, Ill. 60148. Tel. (312) 691-1165/7. Starr Lane, Midwest Advertising Director.
Los Angeles: ABC Consumer Magazines Inc., 2049 Century Park East, Suite 3050, Los Angeles, Calif. 90067. Tel. (213) 284-8118. Howard Berman, National Sales Manager.

Editorial correspondence should be addressed to The Editor, HIGH FIDELITY, 825 Seventh Ave., New York, N.Y. 10019. Editorial contributions will be welcomed, and payment for articles accepted will be arranged prior to publication. Submissions must be accompanied by return postage and will be handled with reasonable care; however, the publisher assumes no responsibility for return of unsolicited photographs or manuscripts.



Magazine Publishers Association

354449.U2—The Joshua Tree. (Island)
 219477. Simon & Garfunkel's Greatest Hits. (Columbia)
 287003. Eagles Greatest Hits 1971-1975 (A&M)
 291278. The Doobie Brothers—Best of the Doobies. (Warner Bros.)
 308049. Creedence Clearwater Revival featuring John Fogerty — Chronicle. 20 great est hits. (Fantasy)
 319996-399998. Motown's 25 = 1 Hits From 25 Years. (Motown)

321570. Beethoven: Symphony No. 5, Schubert Symphony No. 8 (Unfinished)—Maazel, Vienna Phil. (Digital CBS Masterworks)
 324822. Ravel: Bolero, La Valse; Rhapsodie Espagnole — Maazel, cond. (Digital CBS Masterworks)
 339044. Mozart: Symphonies 40 & 41 (Jupiter)—Kubelik, Bavarian Radio Or. (Digital CBS Masterworks)

339226. Gershwin: Rhapsody In Blue; more Thomas, Los Angeles Phil. (Digital CBS Masterworks)
 341073. A Decade Of Steely Dan. (MCA)
 342097. Barbra Streisand—The Broadway Album. (Columbia)
 343251. Bach: Goldberg Variations; Glenn Gould. (Digital —CBS Masterworks)
 343657. Chuck Berry — The Great Twenty-Eight. (Chess)

344184. Billy The Kid/Rodeo Bollets — Skatkin, St. Louis Sym. (Digital—Angel)
 345777. Peter Gabriel—So. (Geffen)



362228. George Michael—Faith

364018. Foreigner—Inside Information

ANY 6 CDs FOR \$1

plus shipping and handling, with membership.

356667. Heart—Bad Animals. (Capitol)
 346445. Beach Boys—Made In U.S.A. (Capitol)
 346544. Kenny G—Duetones. (Arista)
 348110. Buddy Holly — Fram Orig. Master Tapes. (Digitally Remastered—MCA)
 348318. The Police—Every Breath You Take—The Singles. (A&M)
 348649. Andrew Davis, Cond. — The Pachelbel Canon & Other Digital Delights—The Toronto Chamber Orchestra. (Anthem)
 355115-395111. Prince—Sign 'O' The Times. (Paisley Park)

361402. Tiffany. (MCA)
 349985. Johnny Mathis/Henry Mancini—The Hollywood Musicals. (Columbia)
 352948. Wynton Marsalis—Carnaval. Hunsberger, Eastman Wind Ensemble. (Digital CBS Masterworks)
 353771. Balling/Rampal: Suite #2 for Flute & Jazz Piano Trio. (Digital CBS)
 354902. Fleetwood Mac—Tango In The Night. (Warner Bros.)
 354951. Mozart: Flute Quartets—Rampal/Stern Accardo Rostropovich. (Digital CBS Masterworks)
 344622. Anita Baker—Rapture. (Elektra)

361170. Yes—Big Generator. (Atco)
 347955. Huey Lewis & The News—Fore! (Chrysalis)
 355164. Vladimir Horowitz Plays Favorite Encores. (CBS Masterworks)
 355578. Hanson: Symphony No. 2 ("Romantic"), Barber; Violin Concerto. Oliveira, Skatkin, St. Louis Sym. (Digital—Angel)
 356154. Whitney Houston—Whitney. (Arista)
 356287. Suzanne Vega—Salitude Standing. (A&M)
 356501. Benson/Klugh—Collaboration. (Warner Bros.)
 357087. Grateful Dead—In The Dark. (Arista)

357640. Wynton Marsalis—Standard Time. (Columbia)
 357350. Duke Ellington Orchestra—Digital Duke. (Digital GRP)
 357616-397612. The Best Of The Doors. (Digitally Remastered—Elektra)
 358127. Krans Quartet—White Man Sleeps. Volens, Ivos Bontak, etc. (Digital—Noname)
 359018. Pat Metheny Group—Still Life (Talking). (Geffen)
 364885. Neville Marriner, cond.—The Sound of the Academy. (Angel)
 359612. Elton John's Greatest Hits, Vol. III 1979-1987. (Geffen)

365189. James Taylor—Never Die Young. (Columbia)
 360016. Spyro Gyra—Stories Without Words. (Digital—MCA)
 360107. Billy Idol—Vital Idol. (Chrysalis)
 361048. Diane Schuur and the Count Basie Orchestra. (Digital—GRP)
 361139. R.E.M.—Document. (R.S.)
 361147. Rodgers And Hammerstein's Carousel. Barbara Cook, Samuel Ramey. (Digital—MCA Classics)
 361972. Billy Joel—Kahnept (In Concert). (Columbia)
 362152. Robbie Robertson. (Geffen)
 362236. Tamy Bennett—Bennett/Berlin. (Columbia)
 362277. Neil Diamond—Hot August Night II. (Columbia)
 362293. Andres Segovia—The Segovia Collection (Vol. 1) Bach. (Digitally Remastered/MCA Classics)
 362343. Stevie Wonder—Characters. (Motown)
 362525. Steve Winwood—Chronicles. (Island)
 362640. Linda Ronstadt—Canciones De Mi Padre. (A&M)
 362657. Madonna—You Can Dance. (Sire)
 363465. Dolly Parton—Rainbow. (Columbia)
 363648. The Manhattan Transfer—Brasil. (Atlantic)
 363655. Barry Manilow—Swing Street. (Arista)
 364257. Arthur Fiedler & The Boston Pops—Capriccio Italiano—Capriccio Espagnol. (Digital—UltraGroove)



365494. George Harrison—Cloud Nine



361519. Inxs—Kick



360115. Bruce Springsteen—Tunnel of Love



362079. Michael Jackson—Bad



357657. Beethoven: Piano Concerto No. 5 Murray Perahia, Piano



361675. Sting... Nothing Like The Sun

We deliver the CDs you want—right to your door. In fact, if you join the CBS Compact Disc Club now, we'll send you 6 CDs of your choice from this ad for just \$1.00 plus shipping and handling. Simply fill in and mail the application—we'll send your CDs and bill you for the dollar, plus shipping and handling. You merely agree to buy 4 more CDs (at regular Club prices) in the next two years, and you may then cancel your membership anytime after doing so.

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

How the Club works. If you wish to receive the Selection of the Month, you need do nothing—it will be shipped automatically. If you prefer an alternate selection, or none at all, fill in the response card always provided and mail it by the date specified. You will always have at least 10 days in which to make

your decision. If you ever receive any Selection without having 10 days to decide, you may return it at our expense.

The CDs you order during your membership will be billed at regular Club prices, which currently are \$14.98 to \$15.98—plus shipping and handling, and sales tax where applicable. (Multiple-unit sets may be higher.) There will be special sales throughout your membership. After completing your enrollment agreement, you may cancel membership at any time.

Special Bonus Plan: After you buy 4 CDs at regular Club prices, you can build your collection quickly with our money-saving bonus plan. It lets you buy one CD at half price for each CD you buy at regular Club prices.

10-Day Free Trial: We'll send details of the Club's operation with your introductory shipment. If you are not satisfied for any reason whatsoever, just return everything within 10 days and you will have no further obligation. So why not choose 6 CDs for \$1 right now?

ADVANCE BONUS OFFER: As a special offer to new members, take one additional Compact Disc right now and pay only \$6.95. It's a chance to get a seventh selection at a super low price!

CBS COMPACT DISC CLUB, 1400 N. Fruitridge P.O. Box 1129, Terre Haute, Indiana 47811-1129

Please accept my membership application under the terms outlined in this advertisement. Send me the 6 Compact Discs listed here and bill me \$1.00, plus shipping and handling for all six. I agree to buy four more selections at regular Club prices in the coming two years—and may cancel my membership at any time after doing so.

SEND ME THESE 6 CDs FOR \$1.00

<input type="checkbox"/> HARD ROCK				<input type="checkbox"/> SOFT ROCK				<input type="checkbox"/> JAZZ				<input type="checkbox"/> CLASSICAL*			
<input type="checkbox"/> L. POP/EASY LISTENING															
My main musical interest is (check one): (But I may always choose from any category.)															
Mr. _____															
Mrs. _____															
Miss _____															
Address _____				City _____				State _____				Zip _____			
Do you have a VCR? (04) <input type="checkbox"/> Yes <input type="checkbox"/> No															
Do you have a credit card? (03) <input type="checkbox"/> Yes <input type="checkbox"/> No															

ADVANCE BONUS OFFER: Also send me one more CD right now at the super low price of just \$6.95, which will be billed to me.

*Classical members serviced by the CBS Classical Club. We reserve the right to reject any application or cancel any membership. Offers not available in APO, FPO, Alaska, Hawaii, Puerto Rico, please write for details of alternative offer. Canadian residents serviced from Toronto. Applicable sales tax added to all orders. © 1988 Columbia House

Selections with two numbers contain 2 CDs and count as 2—so write in both numbers
CBS COMPACT DISC CLUB; Terre Haute, IN 47811

© 1988 Columbia House

4JV/RX 4JV/RV

HIGH FIDELITY SUBSCRIBER SERVICE

P.O. Box 10051 Des Moines, IA 50340-0051

Change of Address: Please advise as early as possible. Attach label with your old address and write in new address below.

New Subscriber: Fill in your name and address below. Use separate sheet for gift orders.

PLACE LABEL HERE

Renewal: Attach label. Please bill me..... Payment enclosed
..... One year \$13.95 Two years \$26.00 (Foreign subscribers
please add \$7.00 per year for postage)

NAME.....

STREET.....

CITY/STATE/ZIP.....

For other subscription questions or problems, please write a note and send entire form to the above address, OR CALL TOLL-FREE:

1-(800) 666-3977

LETTERS

somebody at EMI has vision and respect for the product.

EMI should put George Martin back on the payroll to personally handle *all* remixing and remastering of the Beatles—and to lead the detective work required for locating the lost stereo masters of supposedly mono-only recordings. And EMI should bring in HIGH FIDELITY's Richard C. Walls, Mark Moses, Hank Bordowitz, Jeff Nesin, and Mr. Richardson as product consultants. These guys would do it right!

Sherman Applegate
Sunnyvale, Calif.

In his review of *Yellow Submarine*, Richard C. Walls says that "Only a Northern Song" has "mono sound." The CD I bought has the song in fake stereo: highs in the left channel, lows in the right. Is Mr. Walls mistaken or very lucky? (If the former, it's Y adapters for everybody, and shame on EMI.)

Jeffrey S. Powell
Hicksville, N.Y.

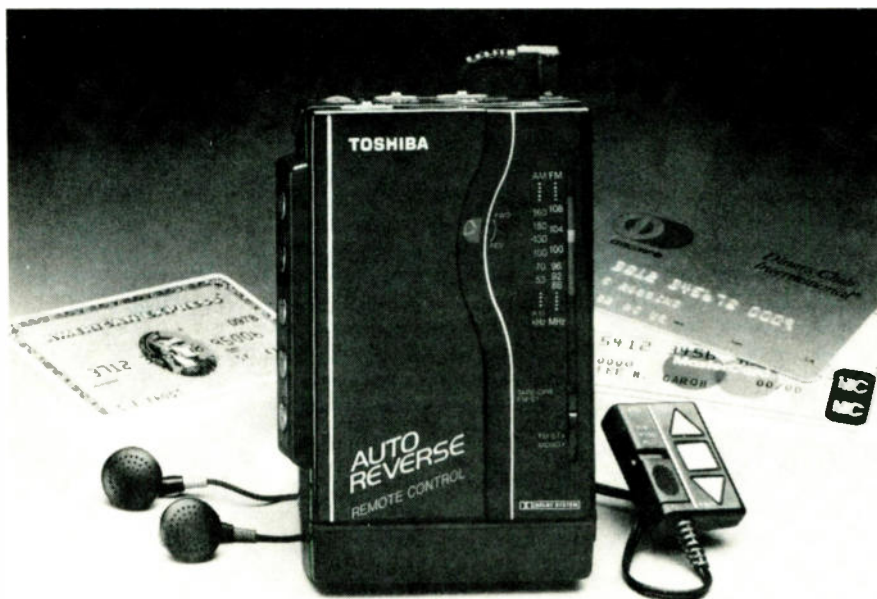
Mr. Walls, at that point in his detailed article, is simply a little taken to abbreviation. He meant, as he earlier described three similar songs on the LP version of Magical Mystery Tour, "a near-mono attempting to approximate stereo," with the kind of treble/bass division you mention. Sorry for the confusion.—Ed.

Thank you for such informative and insightful reviews of the most recent Beatle CDs. You've done your homework well, as the 27 not-yet-available-on-CD tracks listed by Ken Richardson jibe with mine to a tee. EMI should also transfer the single version of "Get Back" and the un-Philtered version of "Across the Universe" in compiling this dream CD of ours.

Tom Shepherd
Sherman Oaks, Calif.

By the time you read this, our dream CD will be in the stores. EMI has assembled two CDs called Past Masters, which together offer the very same 27 tracks. In addition, they include the versions of "Get Back" and "Across the Universe" you mention, along with "Komm, Gib Mir Deine Hand" and "Sie Liebt Dich" (the German remakes of "I Want to Hold Your Hand" and "She Loves You") and the single versions of "Love Me Do" and "Let It Be." Past Masters will be reviewed in our July issue.—Ed.

Many of the Beatle songs Ken Richardson claims have not seen "the laser of digital" have indeed seen the laser of my player:



Why pay cash for batteries when you can charge it?

There's no limit to how much you can charge with Toshiba's new KT-4097 personal stereo. Because it's rechargeable. It comes with long lasting Ni-Cad batteries and a recharger. Add the wired remote control, auto-reverse, AM/FM stereo, Dolby*B NR, lightweight headphones and you'll agree, Toshiba deserves a lot of credit.

*TM Dolby Labs

In Touch with Tomorrow
TOSHIBA

Toshiba America, Inc., 82 Totowa Road, Wayne, NJ 07470

L E T T E R S

I own two CDs from *The Beatles' Perfect Collection*, which contains most of the 27 songs on his list. The set is from Japan, and the sound quality is excellent.

Bruce Darconte
Bayside, N.Y.

Mr. Richardson replies: I was indeed aware of the CDs you mention when I compiled my list but chose not to recognize them because, in effect, they are pirate CDs—though perfectly legal in Japan. You see, the period of copyright protection in that country is only 20 years, as opposed to 50 years in England and 75 years in America. Therefore, much of the Beatles' material is now, in the opinion of some Japanese companies, fair game for repackaging without the payment of royalties. Trouble is, the CDs made by such companies—in your case, CTA—cannot be based on the original master tapes, as they are the property of the original copyright owner, British EMI. The only Japanese CDs that are based on the original masters are those released by the Japanese branch of EMI, namely Toshiba-EMI. Any other Japanese CDs, in the words of British EMI's Gareth Hopkins, "have to be of low quality, made from a vinyl pressing or a mass-produced cassette."

Of course, one man's "low quality" may be another man's "excellent." But I'd rather have our readers wait for CDs that they know are transferred from the original masters. Besides, the domestic, two-volume Past Masters will cost a lot less than the imported, seven-volume Perfect Collection.

Reading your reviews of the second set of Beatle CDs ["Glimpse the Truth," November 1987], I was very pleased with Ken Richardson's comments on *Sgt. Pepper's Lonely Hearts Club Band*, specifically that in certain instances he prefers the mono version to the stereo version. Paul McCartney has been quoted as saying he prefers the mono sound, too, because it was mixed with greater care.

Rich Jesionowski
Chicago Ridge, Ill.

In your November 1987 "Letters," Ken Richardson asks if anyone knows why John Lennon's flubbed vocal on "Please Please Me," which appears on the stereo version of Parlophone's *Please Please Me* but was fixed for the mono version, shows up on his mono copy of Capitol's *The Early Beatles*. I believe I know the answer: For at least some of the material on its early Beatle LPs, Capitol seems to have prepared both its mono and stereo releases from Parlophone's stereo master tapes. Thus, for the mono version of *The Early*

Beatles, the left and right tracks of the stereo *Please Please Me* were combined, bringing along John's mistake.

Steve Graham
Ann Arbor, Mich.

I am not given to writing letters to the editor, but Joseph Addiego's letter in your October 1987 issue demands comment. *A Hard Day's Night*, *Beatles for Sale*, and the Rolling Stones' earliest albums should have been reissued in stereo simply because they're appearing on Compact Disc? Is Mr. Addiego buying an artist's music or a recording technology? I bought *Beatles for Sale* expecting a brief wallow in nostalgia before filing it away. What a surprise! There's an amazing sense of confidence and excitement infusing every track, a feeling that isn't present on the LP version and that has absolutely nothing to do with mono or stereo.

John Ingham
Tokyo, Japan

The Beatles were clearly more than a band that happened to play music in the Sixties. They were a cultural phenomenon and are now forever etched in the annals of time. Hence the many references to preserving the "historical accuracy" of their music on Compact Disc.

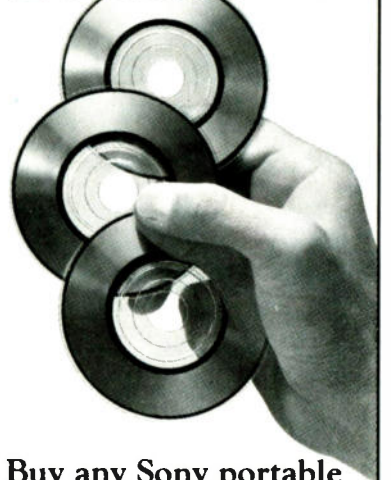
The mono vs. stereo debate over the group's first four CDs raises an issue above and beyond the question of sound itself: It has never ceased to amaze me how much print is devoted to critics who, quite frankly, have no idea what they are talking about. Beatle connoisseurs like myself have had to suffer through years of self-appointed "expert" analysis, and now it's evident that the emergence of the Beatles on CD has once again lent itself to this popular pastime. I do agree that everyone is entitled to an opinion and has a right to express that opinion (and mine, incidentally, is that the release of mono CDs of *A Hard Day's Night* and *Beatles for Sale* was absolutely ludicrous). One would also hope that the publications presenting these views would do their homework and provide the proper screening necessary to supply us with quality material.

That said, **HIGH FIDELITY** appears to be the only publication to print writers who have lived through the period and sincerely regard their assignments as labors of love. It is unfortunate that such quality efforts be limited to a single source.

Robert Abramowitz
Las Vegas, Nev.

All letters should be addressed to The Editor, HIGH FIDELITY, 825 Seventh Ave., New York, N.Y. 10019. Letters are subject to editing for brevity and clarity.

Free CD³ Music



Buy any Sony portable or home compact disc player and get three 3" CD samplers, Free!

Now, between April 1 and June 30, when you purchase any Sony portable or home CD player, you'll be entitled to receive three 3" CD samplers free. CD³ is the exciting new way to experience up to 20 minutes of CD sound. Each sampler contains hit music from the Warner Bros./Elektra/Atlantic and Geffen labels and features top artists like Madonna, INXS, The Cure and Aerosmith.

Simply send in a copy of your dated proof of purchase, owner registration and the coupon below and the first three rounds are on us.

SONY

The Leader in Digital Audio™

Please send me my three CD³ samplers. I have enclosed a copy of my sales receipt dated between April 1 and June 30 and a copy of my owner registration card from the purchase of a Sony portable or home compact disc player.

Name _____

Address _____

CD Model # _____

Send to: Sony CD³ Samplers
Box 9136
Boston, MA 02118

All coupons must be postmarked by July 31st, 1988. Allow 6-8 weeks for delivery. Non-transferable to other Sony products. Offer good only in the United States and U.S. territories.

H

“Polk Has Triumphed.”

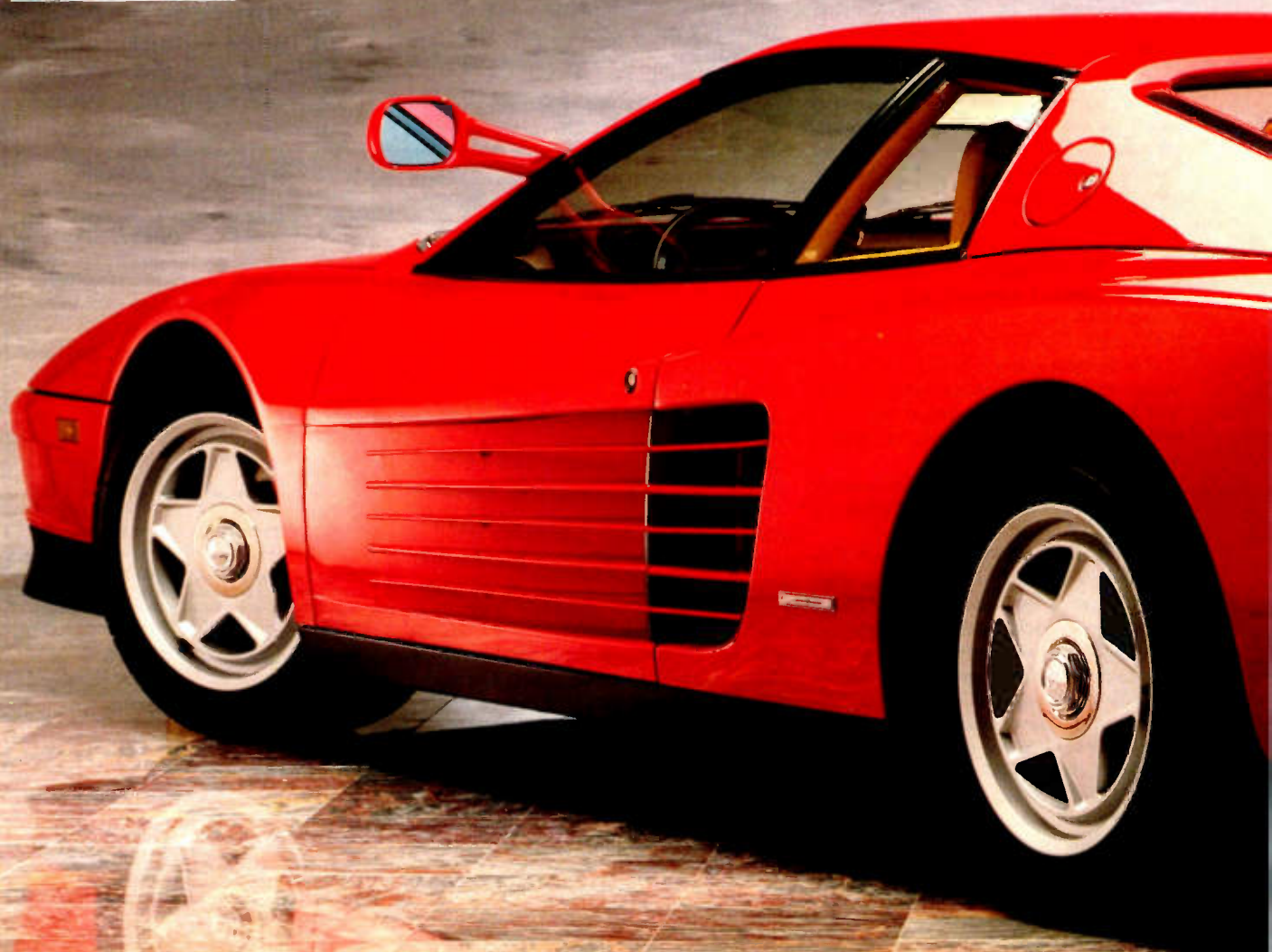
CAR STEREO REVIEW

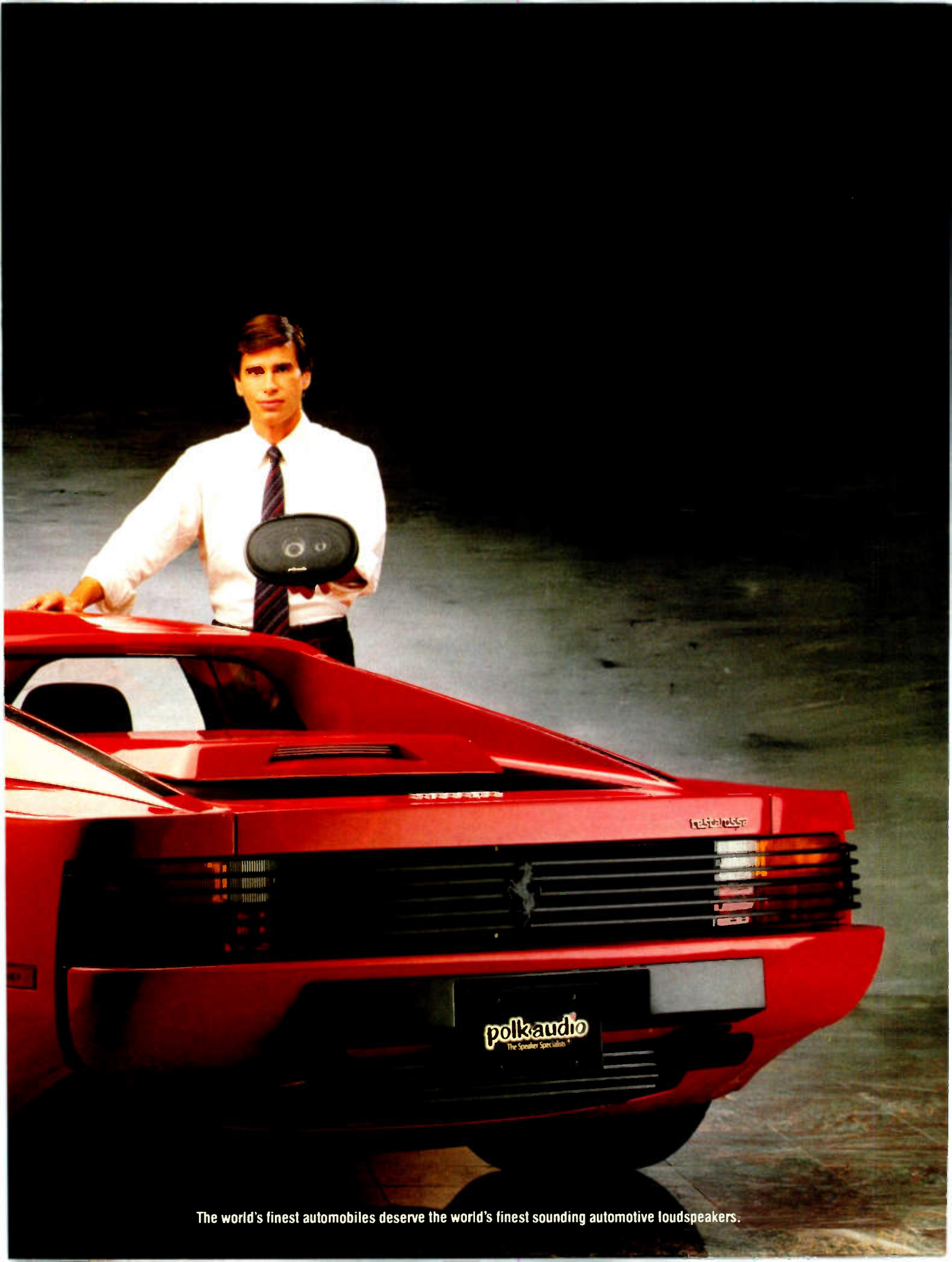
Introducing Matthew Polk's New SDA Mobile Monitor Systems

Matthew Polk has a passion for perfection in the cars he drives, and the speakers he creates. His astonishing new SDA Mobile Monitor Speaker Systems combine the awesome sonic benefits of his revolutionary SDA True Stereo technology with the superior sound of his Grand Prix award winning Mobile Monitor loudspeakers. Car Stereo Review, the definitive authority on the state-of-the-art in autosound, raved, “It’s like jumping into hyperspace.”



Complete systems (front and rear speakers plus an SDA Automotive Crossover Matrix) begin under \$500.





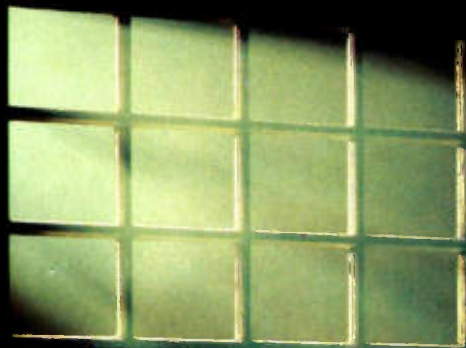
kester

polk audio
The Speaker Specialists

The world's finest automobiles deserve the world's finest sounding automotive loudspeakers.

WE'LL CHANGE YOUR IDEAS

DM
1 6 0 0 / 1 8 0 0



B&W sensitively shape a new generation of audio excellence. DM1600/DM1800 – veritable giant killers. Two systems incorporating all the benefits of simplified Matrix technology. Providing super-stereo imagery in modest enclosure dimensions. DM1600. An instrument so supersensitive, so acoustically sophisticated. But blessed with the alternative facility for either stand or shelf mounting – the home-loving miracle. DM1800 has even more. Additional volume – a new powerhouse of a motor system. Delivering superb attack with transient performance. Elegant in real wood veneers and perfectly attuned to the design-conscious room. DM1600/DM1800 speak of, and with, scientific elegance.



The **MATRIX** *Revolution*

Super Digital

The DS-8000 (\$1,499), NEC's first Super VHS deck, incorporates advanced digital effects, Hi-Fi recording, an MTS tuner, searching by index number or time, and—most significantly—the company's proprietary digital video noise reduction (NR). The NR reduces the picture snow and graininess that are still evident—perhaps even more so—in higher-resolution S-VHS recordings (regular VHS recordings benefit as well).

In December 1987, we tested the DX-5000, NEC's most advanced regular-VHS VCR equipped with the NR feature. The new model uses improved circuitry to handle the wider bandwidth of S-VHS video signals. Successive averaging of video fields achieves as much as a 6-dB reduction in luminance and chrominance noise at the highest of the three NR settings. Still pictures from tape or tuner, as well as signals fed to the DS-8000's auxiliary input, are passed through the NR process.

As with the DX-5000, the Super model has all variety of digital special effects, such as strobe and noiseless slow-motion and scanning. Timer information can be programmed directly into the remote control (instructions appear on the LCD panel and on the TV screen) and transferred via infrared beam to the deck. *NEC Home Electronics, 1255 Michael Dr., Wood Dale, Ill. 60191.*

Top Sonys

The CDP-707ESD CD player (\$1,800) features Sony's new eight-times oversampling digital filter and linear 18-bit digital-to-analog converters (DACs). It also employs new disc-error detection circuitry said to improve tracking. Other amenities include coaxial and optical digital outputs, nonresonant construction, and twin power transformers. Programming features are highlighted by Custom File, which includes provisions for storing the playback sequence for as many as 226 CDs, assigning a name to any CD, and marking passages independent of index marks.

As we've mentioned before in this magazine, the new 18-bit decoders do not actually retrieve more information from a 16-bit-encoded CD, but they do create less distortion (measurable, at least) on extremely low-level signals. And additional oversampling (technically called "resampling") permits the use of a gentler analog filter in the output stage, yielding improvements in phase accuracy at very high frequencies.



The DS-8000 is NEC's first Super VHS offering.

Sony's first ES-series CD changer, the CDP-C7ESD (\$500), features the company's unique five-disc carousel system, wherein the CDs are loaded into a rotating tray. The player uses four-times oversampling and 16-bit DACs and includes the Custom File programming system. It also has a direct digital output. All new Sony ES-series models can play three-inch CD singles without an adapter. *Sony Corp., Sony Dr., Park Ridge, N.J. 07656.*

Small ARs

The AR Party Partner (\$450 per pair) is a wedge-shaped, two-way acoustic suspension loudspeaker with a 10-inch woofer and 1 1/4-inch cone tweeter. It joins the Rock Partner and the weatherproof Environmental Partner (both \$300 per pair), which are smaller but similarly shaped models for either shelf or floor placement. In addition, the company offers the

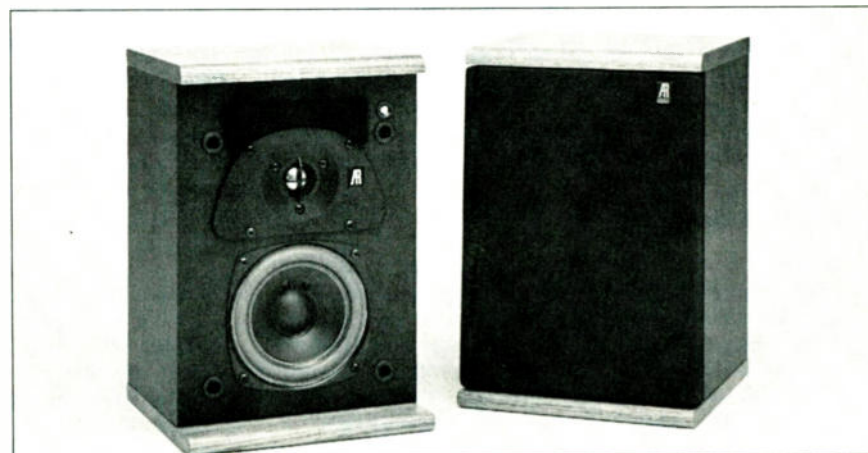
Powered Partner (\$400), an amplified model.

Additions to the TSW series are the TSW-105 (\$275) and TSW-115P (\$400), both of which have a 4-inch woofer, a titanium dome tweeter, and top and bottom panels made of solid wood. The 115P contains a built-in 16-watt (12-dBW) amplifier with bass extension circuitry and a stereo miniplug input for portable tape and CD players. *Acoustic Research, 330 Turnpike St., Canton, Mass. 02021.*

Prerecorded DATs

GRP Records plans to release six of its best-selling recordings on DAT, including *Diane Schuur* and *the Count Basie Orchestra*, the Duke Ellington Orchestra's *Digital Duke*, and a sampler title. As a renowned "all-digital" recording company, GRP has been a consistent supporter of

(Continued on page 72)



The amplifier is built into AR's TSW-115P loudspeakers.



Answers to Readers' Questions

By Larry Klein

Power-Amp Erasure

I have three large power amplifiers in my setup. I would like to know if my cassette tapes are in danger of being damaged if I occasionally place them on the amplifiers.

Tim Florin
Wahiawa, Hawaii

No, you won't damage the tapes, but the magnetic fields surrounding the power transformers in the amplifiers will almost certainly erase any signal on the tapes—at least partially. Do this often enough with any tape, and you may begin to notice it.

Efficiency vs. Dynamic Range

I've been arguing with a friend about whether a low-efficiency speaker will have a narrower dynamic range than one with a higher efficiency. What is the definitive answer?

Allen Baker
Fort Collins, Colo.

The issues can be clarified by discussing maximum volume rather than dynamic range. The question then separates into: (1) How much sound level can the speaker produce before it self-destructs, and (2) Can the amplifier drive the speaker to the desired levels? You'll find that most large speakers have no difficulty producing all the SPL you would want in a home listening room, but amplifiers rated at less than 100 watts or so can run out of power before they can produce *lifelike* levels from low-efficiency speakers. In other words, low-efficiency units may suffer from dynamic-range limitations, but only because insufficient power is available to drive them fully.

Speaker Size and Power Rating

It seems to be a common belief that the size of a speaker directly affects its performance. However, I own a pair of small speakers that sound far superior to my friend's larger systems. Also, my speakers are rated at 150 watts, but my receiver is only rated at 35 watts per channel. Does the difference hurt the efficiency or any other aspect of my system?

Stuart Smith
College Station, Tex.

If you have two speaker systems designed by equally competent engineers, a larger system can have greater efficiency, greater power-handling capacity, and a more extended bass response than a significantly smaller one. However, since all designers are neither equally proficient nor operating with the same budget constraints, it's relatively easy to find small speakers that outperform larger models.

A speaker's rating of 150 watts indicates the maximum

power it can handle under some vaguely defined condition. Power handling does not directly relate to efficiency or to any other speaker specification; hence, there's no reason to be cautious about using a low-powered amplifier with a heavy-duty speaker. However, using a high-powered amplifier to drive a speaker with a very low power-handling capacity is somewhat risky. A bad ground or a loose signal connector in your system may feed a high—and potentially damaging—level of 60-Hz hum to your speakers.

Techtron Receiver

I lost the owner's manual for my Techtron receiver. How do I contact the manufacturer?

Byron Gleiberman
Pawtucket, R.I.

You probably can't. In Japan, Taiwan, and Korea, hundreds of small factories are turning out low-cost—and low-quality—audio products. In fact, if you order a specific model in sufficient quantities, they will be happy to attach your private brand name—such as Techtron—to their standard faceplate and even modify the faceplate to your specs if the order is large enough. An importer might order a thousand pieces, have them labeled "Techtron," and sell them to a chain of audio stores or in smaller lots to individual dealers. The product's bargain price reflects that it was cheaply made, has no advertising or other overhead costs except warehousing, and is probably backed up by no more than a 90-day warranty.

A year later, when the product is no longer stocked by the stores that originally sold it, you either won't be able to get it serviced or the cost of service will approach the original bargain price you paid. The obvious moral of the story is: Avoid "special sales" on products with unknown brand names or reputations.

Solid-State Warm-up

When I had vacuum-tube equipment many years ago, it always took at least ten seconds to warm up. With the advent of transistors, I thought all that would be eliminated, but now I find that some solid-state equipment still requires warm-up time before the music comes on. Why is that?

Edward Geraldo
Hicksville, N.Y.

"Warm-up" was exactly the right term for tube equipment: You were waiting for the filaments to heat the cathode of the tubes sufficiently to start an electron flow. The slow startup of some transistor components is actually designed-in to prevent turn-on thumps and other noises from being audible. To eliminate such disturbances from the output circuits, some manufacturers install muting circuits

that remain activated until the rest of the just-powered circuitry settles down.

In my system, incidentally, the main power amplifier has a slightly longer turn-on delay than the amplifier in my powered subwoofer, both of which are fed by a preamp that powers up instantaneously. If I turn on my system with a tuner signal already going through it, I am treated to four or five seconds of soft solo subwoofing before my main speakers get into the act.

Vox Populi

I've seen several charts showing the average sound levels produced by various sources such as a whisper (20 dB), a dripping faucet (40 dB), or a diesel truck (80 dB). I'm curious about the volume capability of the human voice. Do you have any information on the subject?

John Barchetti
Salem, N.C.

If you are asking about the sheer volume rather than the carefully controlled tones exhibited by professionally trained singers, I think I can come within shouting distance of an answer. For reasons buried deep within the British psyche, shouting contests were held regularly at Scarborough, England. According to my information (which may not be up-to-date), a very loudmouthed gentleman by the name of Kenny Leader was able to produce an 111-dB shout that won him the male shouting championship in February 1973. There may have been more powerful vocalisms—for example, when Joshua made Jericho's walls come a-tumblin' down—but no one has documented the events with a calibrated sound meter.

Dome Damage

While checking my speaker with its grille removed, I accidentally dented the paper dome in the center of my woofer. I don't hear any increase in distortion, but I'm concerned about future problems. Can the dent be fixed?

Louis Mario
Fairfield, Conn.

Unless you've damaged the dome (or dust cap) badly enough so that it physically stresses or distorts the voice coil behind it, you have nothing to worry about. However, if you would like to remove the dent, you can try several techniques. A vacuum-cleaner hose (without attachments) applied directly to the dented area has been known to work well. If the vac has a suction-force adjustment, start low and use increasingly higher suction until the dent pops out.

If you find that the dent requires mechanical correction, you'll need an appropriate "pulling" tool. Heat the pointed end of a large sewing needle in a gas flame until it is red-hot, then bend $\frac{1}{4}$ -inch of the tip to a right angle using pliers. Push the needle's point through the dented area enough to pull the dome back into reasonable shape. The holes should then be sealed with colorless fingernail polish, which also works well on tears in paper cones.

When you have a damaged metal tweeter dome, the best I can suggest is to wrap a strip of duct tape around your finger—sticky side out—and try to pull out the dent through adhesion. In any case, since dents are likely to be

more offensive to the eye than to the ear, feel free to do nothing at all about them. And you can always keep the grille cloths on.

Speaker Location

At one time, acoustics textbooks and some manufacturers stated that, for the most accurate sound reproduction, speakers should be installed on the floor in a corner of the room. Today, the best location is said to be as many as two feet from the nearest wall and at ear level. Why the change?

John Carlyle
Monroeville, Pa.

The original advice you mention dates from the time when getting adequate bass from a speaker system was the big problem. Since corner and floor placement provides more bass reinforcement than any other location, it was frequently recommended. Also, the old horn-loaded speakers required that sort of placement as part of their design.

Over the years, as designers were able to extract higher levels of clean low bass from their systems, it became possible to achieve a balanced frequency response without having to rely on the bass reinforcement of corner placement. In fact, installing any of today's better speaker systems in a corner or on the floor when they have not been designed for such placement will usually result in an unnaturally heavy, boomy bass response. Responsible manufacturers always suggest mounting locations for their speaker systems that, with any luck, will achieve a good frequency balance for typical listener positions.

Phono-Cartridge Design

Since the output of a phono cartridge is generated by the work done by the record groove pushing around the stylus, wouldn't a low-output cartridge cause the least record wear?

Herman Mandel
Creedmore, N.Y.

No, because your basic premise is incorrect. Moving-magnet and moving-coil cartridges produce a signal by having the stylus wave a magnet at a coil or a coil at a magnet. But there are several other designs (such as variable-reluctance and moving-iron) that produce signals by other methods of modulating the magnetic field impinging on the coil. In any case, there is not a causal connection between output level and groove damage with today's better cartridges. For example, low-output moving-coil cartridges generally put out about one-tenth the signal voltage of equivalent-quality moving-magnet types but provide no significant advantage in reduced tracking-force requirements or LP wear. Many highly regarded moving-coil cartridges track at above 2 grams, a level that can cause groove damage.

In the last several years, improved coil assemblies and magnets have resulted in increased signal outputs without requiring any increase in the "work" done by the groove. Aside from the groove-wall destruction caused by a worn stylus tip, most groove damage results when the stylus assembly has a high tip mass or poor tracking ability. Neither factor has anything to do with output level.

We regret that the volume of mail is too great for us to answer all questions.



Using a Portable DAT Recorder

By David Ranada

NEWS FLASH: On March 1, as we were going to press, the National Bureau of Standards released its report on the CBS Copy Code system. The NBS findings completely vindicate the positions taken by this magazine and me. To wit: The NBS found that "the system does not achieve its stated purpose [it does not protect encoded music from copying]"; that Copy Code not only alters the original electrical signal but that "for some listeners for some selections, this results in a discernible difference" between encoded and original material; and that "the copy prevention system can be bypassed easily [with several types of circuits, each of which cost less than \$100]." These results have effectively killed the Copy Code bills that were before Congress. The full report (available as NBSIR-88/3725 for \$24.95 from the National Technical Information Service, Springfield, Va. 22161) contains a detailed description of the tests employed by the NBS. It also has lessons relevant beyond the present DAT controversy, which will be covered in a future feature article. Furthermore, the report throws new light on this month's topic.

In the uproar embroiling digital audio tape (DAT), the record companies opposing the format seem to have forgotten that one of the most important uses of a DAT machine will *not* be to make perfect digital "clones" of Compact Discs (a process not even possible with any present-day combination of home DAT deck and CD player). Instead, the first DAT machines are best-suited for the making of new, master recordings of music and other sounds. Nothing has made this point more vividly for me than my recent experience with Sony's first portable consumer DAT deck, the TCD-D10.

Although it is not yet officially available here, the D10 sells in Japan for precisely 250,000 yen, about one-third more than a typical home DAT machine. At 125 yen to the dollar, that's \$2,000, indicating that this deck is hardly one that dubbing-crazed teenyboppers will line up to buy. Since a two-hour blank DAT cassette costs about \$12.00 (about four times the street price of a premium-grade C-90 analog cassette), the most cost-effective application of the extraordinary recording abilities of the D10 is to make tapes of once-in-a-lifetime events.

From this viewpoint, the deck is a dream machine for anyone who has ever done any live recording. It scores over other live-recording media in two important ways. First, despite its high cost, it is *less* expensive to own and operate than the analog-tape medium of closest quality (open-reel). Second, it is far more convenient to use than the only other home digital-recording medium—a PCM adapter used with a videocassette recorder.

To make a good analog open-reel recording nowadays, you have to be willing to spend at least \$2,000 for a top-quality deck taking 10½-inch reels. In order to compete with digital's dynamic range, you then must invest

in an outboard noise reduction system costing a few hundred dollars more. Two hours of ¼-inch, 1-mil analog tape running at 15 ips will run you at least \$70. In tape alone, the cost per hour of DAT recording beats analog open-reel. And DAT's cost advantages will increase as the DAT medium progresses and as open-reel decks and tape become more rare and expensive. For now, analog's only advantage is ease of editing.

You can get sound quality comparable to that of a DAT deck by using a 16-bit PCM-adapter/VCR combination. But no such combo is likely to match the D10 in convenience. Measuring only 10 by 2½ by 7½ inches and weighing only four pounds, the D10 invites over-the-shoulder operation—it even comes with a carrying case and strap. The unit's rechargeable nicad battery will power the deck for two hours of nonstop recording.

The capability of recording for that long is important not only when making live recordings of Mahler symphonies (a rare privilege for any amateur recordist) but when taking the machine out into the field for high-resolution tapings of various spectacular natural sounds. In New York, those sounds include the subway system (where the sonic difference between old and new subway cars is comparable to the difference in their graffiti coatings), street musicians, planes landing at LaGuardia Airport, and the blasting for the new building going up outside my office. All these sounds have proven to be effective sonic tests for the deck and for any system playing the tapes it makes. Soft sounds come out wonderfully noise-free, too, like the birds singing outside my bedroom.

Making nonstudio recordings with the D10 is aided by the supplied stereo microphone. It's an electret-condenser model with two diaphragms mounted nearly back-to-back; the apparent angle between the two diaphragms is switchable between 90 and 120 degrees. For an accessory microphone, it is of extremely high quality. Its rated background noise is given as 25 dB SPL and its overload level as more than 117 dB SPL, resulting in a dynamic range of greater than 92 dB. In using the microphone, the only problem I encountered was with the blasting, which clipped the microphone on certain occasions. The tapes sounded fine on playback, although the clipping can be seen on an oscilloscope. Then again, unless you frequently tape the *1812 Overture*, you're unlikely to run across this limitation.

The mike itself has an accessory, a "pistol grip" handle containing transport- and record-control buttons. As convenient as the handle-mounted controls are, the grip might prove a drawback in New York and other high-tension cities. I, for one, will not martyr myself to a well-intentioned but stereophonically ill-informed police officer as I stand at the end of a runway and aim the TCD-D10's pistol-grip-mounted mike at a landing jet. So far, I've left the handle in my desk drawer. □



Pioneer CD Changer System

By Christopher J. Esse

Perhaps a new term should be introduced to help describe the subject of this month's test drive. Mundane descriptions such as "fully featured," "comprehensive array of features," or "packed with features" simply fall short of the mark. Witness, then, the birth of the term "megafeatured," used in a most complimentary fashion to categorize Pioneer's first car CD changer.

The Pioneer system is centered around the KEX-M700, a very sophisticated \$650 cassette/tuner that also operates the six-disc, trunk-mounted CDX-M100 CD changer (also \$650). It's difficult enough to accommodate advanced features for tape and radio in the space of a DIN-size faceplate, but adding a full complement of CD controls requires a significant departure from traditional designs. Hence, Pioneer has made clever use of a three-tier control scheme and a wireless remote that, in contrast to its unassuming appearance, takes care of business. Before we get down to a thorough evaluation, let's take a megabreath and run through some of the features.

All of the controls on the KEX-M700 head unit are electronic; there's not a knob or slider to be found. In fact, you won't find a power button, either. Instead, a button labeled FUNC (for function) turns on the power and steps the unit through its three distinct operating modes: CD, tuner, and tape, in that order. (If the CDX-M100 changer is *not* connected, the KEX-M700 serves as a conventional head unit). Almost all of the controls do triple duty, depending on which mode you're in. For example, the tape-wind toggle switch also handles tuning and track-skipping or audible cueing when playing a CD. Three other buttons—labeled A, B, and C—are located just beneath a large display panel; the special functions they cover are clearly indicated on the display during each mode of operation. Here's where Pioneer packs in a lot of features in a little space.

The tuner has three banks with six presets each for FM stations (for a total of 18) and one bank for AM stations. In the tuner mode, button A selects the preset scan or, if you hold it down for about two seconds, initiates the Best Station Memory (BSM) routine. BSM automatically selects the six strongest stations (starting from the bottom of the FM or AM band) and assigns them to the preset memories. If, say, only four stations are deemed "best," the remaining two presets in the bank stay as they were. But even after using the BSM, you still have 12 FM presets left over. Button B switches between stereo and mono for FM. Button C selects the "local seek tuning" mode, and, when held down, lets you choose the sensitivity-threshold level (four for FM, two for AM). The higher the level, the stronger the station must be for the tuner to automatically seek it out. However, the tuner's seek function is at its most sensitive when the local mode is off, stopping at any station it can pull in.

The autoreverse tape deck includes Dolby B and C,

automatic tape-type selection, music search, same-selection repeat, and blank skip (to skip long unrecorded segments). The special A, B, and C buttons handle most of these chores. Tape loading, which is motor-assisted, powers up the unit automatically, in case you're still looking for a button labeled POWER.

In the CD mode, you'll find nearly all the features you'd expect in a home CD changer. You can directly select a disc, skip tracks, and cue audibly (though quite slowly) through a track. The A, B, and C buttons perform the other tricks: 32-selection programming, random play of the selections on the current disc, preset scan through about ten seconds of each track on the current disc, and same-selection repeat. The ample display shows the disc and track number, the step number during programming, and any special operating mode in progress. If audible cueing is selected, the time elapsed within a track is displayed (the track-skip toggle switch handles audible cueing if a button marked MANUAL is pressed).

There is actually a fourth mode for setting a "secret code." If a code has been programmed, it must be entered in order for the KEX-M700 to operate after being cut off from its power supply. You may be familiar with this approach to theft protection. Manufacturers hope that thieves will someday recognize the futility of stealing a radio from a car bearing "secret code" window stickers.

When you program a sequence of CD selections, the information is retained in the CDX-M100's memory for that particular group of discs (a program is filed by the identification code of the first disc in the magazine). In all, the last program for as many as 16 groups of discs is remembered and begins playing as soon as the magazine is inserted. Pioneer has gone a couple of extra steps to whet your appetite for one of its home CD changers as well. First, the six-disc magazine for the CDX-M100 also works in Pioneer's home CD changers, and vice versa. Second, a sequence programmed directly into the remote control for the PD-M70 and PD-M90X home models can be transferred by infrared beam to the KEX-M700.

Speaking of remote controls, the one supplied with the KEX-M700 is a smart piece of work. Using only seven buttons, it manages to cover more than just essential functions, an economy owed to the system's multimode design. The function button, at the remote's upper left, turns the unit on and steps through the modes. Directly below it is a button that, depending on the mode, does the following: reverses the tape direction, changes between FM (all three banks) and AM, and advances to the next CD (and, consequently, cancels any special disc functions in progress—programmed play, repeat, or preset scan). This button makes perfect sense when you consider the role of the "+" and "-" buttons located to its right: activating tape wind or music search (with two presses), stepping through the tuner presets in the chosen

band, and skipping tracks on the current CD. For some reason, audible cueing for CD and manual tuner-search are not possible from the remote, the latter an unfortunate omission. Lastly, the three buttons on the remote's bottom row raise and lower the volume and turn the attenuation on and off.

Pioneer was kind enough to provide a 1988 Mazda 929 in which to test drive its new system. The V6-powered 929 is a new four-door sedan in the mold of Acura's Legend sedan—that is, a direct shot at the market typically defined by much pricier European luxury sports sedans. The 929's extraordinary structural integrity and attendant quietness make it a particularly fine test-bed for a car audio system. The 11-pound Pioneer changer mechanism, which measures 8¼ inches wide by 4½ inches high by 13 inches deep, must be installed in a horizontal position. In the Mazda, it was suspended underneath the parcel shelf, which is one of the installation alternatives described in the owner's manual. This location provides unlimited clearance in front of the changer for inserting the magazine.

And, as it turns out, it's a very stable location. In



more than 200 miles of mostly back-road driving, the changer misbehaved only twice, but apparently not as a result of shock or vibration. After a shock-induced mistrack—as I discovered by physically jarring the changer—play resumed from the point it left off. The two closely spaced slipups I encountered (on different discs) caused the player to reset to the beginning of the track, suggesting that perhaps a speck of dirt had confounded the laser. (I'm baffled, but the problem never recurred.) Otherwise, the changer performed flawlessly and speedily, taking just nine or ten seconds to load any disc.

The KEX-M700's cassette section operated smoothly, although it makes a rather inspired zipping sound at the onset of tape-wind and reverse. We performed no measurements, but I was quite satisfied with the sound reproduced from a CD dub made with Dolby C on metal tape. In fact, I was reminded just how good a carefully made cassette can sound in a car, even when stacked up against a CD. It's clear that Pioneer didn't cut any corners here. Nor did the company hold back on the tuner, which is its top-of-the-line Super Tuner III. I hesitate to make subjective judgments on a car tuner's performance, because the affects of multipath vary with the surrounding geography. However, in my suburban location, the Pioneer

picked up one weak stereo FM station as cleanly as any other car tuner I've used. The mono switch proved quite useful for very noisy FM stations. If you listen to AM, you'll probably find the KEX-M700's performance more than adequate.

The need in seek-tuning for so many sensitivity-threshold levels eludes me. If you can preset 18 FM stations, why would you want to exclude marginal stations during seek-tuning? However, the feature most definitely works for FM, and, by inference, reveals the strength of a particular station. The two settings for AM, though, are pretty useless. In seeking out stations, the low-sensitivity setting differs only slightly from the normal mode, and the high setting was so strict that it deemed only one AM station strong enough! Therefore, I stuck with the normal mode for seeking out stations on either band.

The Best Station Memory can be a high point, especially if you're traveling in an unfamiliar area and don't know the major stations. However, in an area dense with stations (such as a suburb of New York City), the strongest six don't very well represent all that's out there. Besides, I noticed that some of the BSM selections didn't actually sound as good as some presumably weaker stations that were passed over. Well, that's nitpicking, but maybe Pioneer will see fit to expand BSM to cover all 18 FM presets.

Your initial reaction to the KEX-M700 may be similar to mine: not another futuristic head unit with more computing power than a HAL 9000! In the passing-of-the-key ceremony, the installer of the system—from Electronics in Motion of Scotch Plains, New Jersey—shared my concern over the staggering number of features. But that sentiment soon faded away as the orderly arrangement of the controls became apparent with use. And, surprisingly, the Pioneer's controls became even easier to use at night when the unit was lit up. Then, some of the seldom-used buttons were left unlit, effectively highlighting the major controls. As installed in the Mazda, the Pioneer's nighttime display was one of the most readable I've yet encountered.

Given how well the front panel is arranged, the remote control is icing on the cake. What it doesn't control can, for the most part, be taken care of before you set off. Most important, you quickly learn to work it by feel, never having to take your eyes off the road. It's just the right size for one-handed operation and comes with a piece of double-sided tape and a swatch of Velcro for mounting. The strong infrared beam is effective over a wide angle, so affixing the remote to the center of the steering wheel or on the center console is feasible.

If you're in the market for a top-shelf cassette/tuner, it's comforting to know that buying the \$650 Pioneer KEX-M700 leaves you only a step away from a full-blown CD changer system. Admittedly, that step is another \$650 for the CDX-M100 changer, but the total of \$1,300 is in line with the price of competing models. Perhaps the most remarkable thing is that Pioneer took what could be criticized as being an excess of features and assembled them into a package that manages to gracefully accommodate the user. Now *that's* a great toy. □

For more information, contact Pioneer Electronics, Dept. HF, 2265 E. 220th St., Long Beach, Calif. 90810.



And What Tape Do You Use?

By Robert Long

When I'm engaged in a conversation, I can always feel it coming. Whoever I'm talking with remarks that I "know about tape" and launches into a series of questions adding up to "What tape should I use?" It's like the inescapable cocktail-party response when somebody discovers another guest is a doctor: "Well, I have this pain . . ." In this case, take two C-90s and call me when you get a DAT machine.

Pushed hard enough, I give in and start explaining some of the fundamentals. And then it happens. My questioner's eyes narrow and a hint of a sneer appears at the corners of his mouth. He (or, very rarely, she) has crossed a mental Rubicon and, after a short delay, usually pops point-blank the question, "And what tape do *you* use?" It's obvious that he thinks I've been hedging by not mentioning a specific brand and feels he has found a way of getting at what the tabloids call "the real truth."

Well, before this column is over, I'm going to confess exactly what brands I use. But first, I have to explain why that information won't mean a blessed thing.

In the first place, there are many reasons for preferring a particular tape. As our periodic rounds of audio cassette testing regularly point out, pop and jazz buffs have more need of high-frequency headroom (to accommodate synthesizers, close-miked brass solos, or cymbals, for instance) than do listeners who prefer soaking in the tepid sonic Jacuzzi of the 101 Strings. Also, the importance of a tape's noise performance depends in large part on the noise reduction system you plan to use when making the recording. And so on. Whether you're recording audio or video, your tape choice will depend on your particular objectives and program material—and nobody else's choice will necessarily be right for you.

Then you must consider the magnetic compatibility between the tape and the deck, which is much more crucial in audio than video. (For a variety of reasons, video recordings are much less likely to suffer obvious degradation from a tape/deck mismatch.) An audio tape that's too "hot" for the deck will tend to produce a peaky high end; conversely, one for which the deck is overbiased can sound relatively muffled.

Worse, some combinations are mechanically incompatible, producing scrape-flutter squeals that can sometimes find their way onto your recording. I have yet to discern any pattern in these mechanical mismatches, though most of the readers who complain about them seem either to be using cheapo tape on quality decks, or vice versa. In any event—and whether you're considering mechanics or magnetics—the object is to match the tape to *your* deck, not mine.

One point I'm adamant about is labeling space. Labeling is the first line of defense against lost recordings. If there isn't space to write down sufficient information if stick-on labels aren't provided, if the small amount of la-

beling space is given to smearing, or if some clever, new-wave high-tech designer has shaped the cassette shell so as to defy application of standard labels (mercifully, this has so far applied only to audio shells), I categorically pass up the brand. If you don't care about labeling, you probably don't do as much taping as I do.

Price influences us all, though its effects are equivocal. A low price combined with an unfamiliar brand name is a warning signal. A rebate on a favorite name-brand formulation is a windfall. But what about the multiple grades from established companies? A sample of Brand X's UltraZappo-II high-grade can cost much more than its HoHummm-II formulation—perhaps three times as much, if we're talking about audio cassettes. Is the premium performance actually worth the premium price?

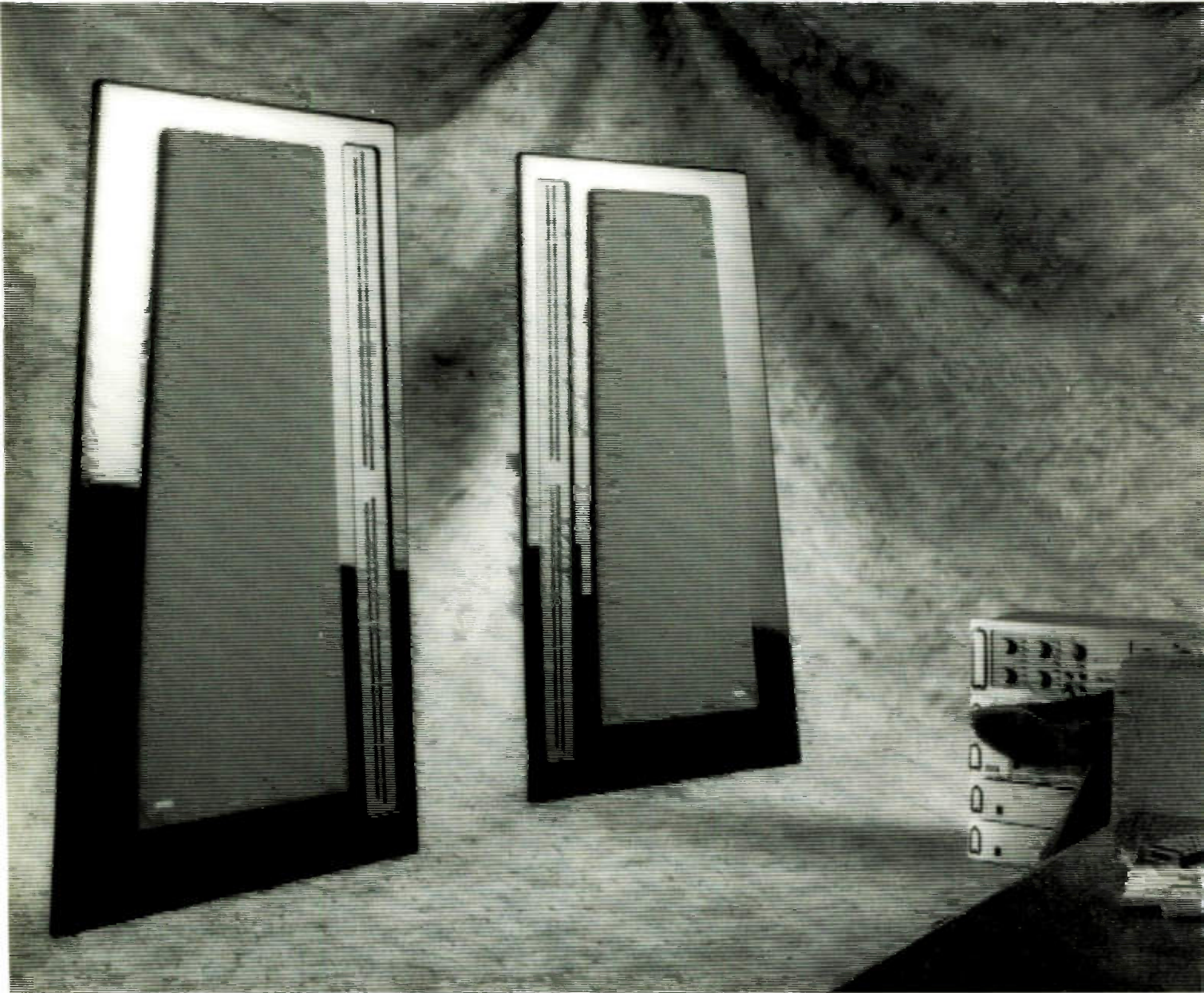
That, too, depends on you, your equipment, and your specific recording objectives. Only the most demanding applications will benefit as much from moving up the top few steps in the formulation scale as from upgrading from the bottom. To put it another way, many users probably will consider superpremium formulations to be beyond the point of diminishing returns. The trick is to decide where that point is for most of your recording chores. Having made that determination, buy by the case (which usually consists of ten cassettes) if you want to keep costs down.

Now we come to what I buy. When I look at the magnetic media I've purchased in the last few months—mostly videocassettes and floppy disks for my computer—I find it's all 3M's Scotch brand. If I go back a little farther, however, I find a large batch of Sony L-500s for my Beta video recorder. (I prefer these to L-750s because the thicker magnetic coating yields somewhat better performance, and the timings are right for my purposes. But L-500s seem to be going the way of the dodo bird—along with, regrettably, consumer Beta itself.)

Going even farther back, there are many cartons of TDK D audio cassettes, in various lengths. I use these for dubs of historic performances derived from 78s, whose inherent noise level defeats the point of ultralow-noise tape but whose sometimes astonishingly clean direct-to-disc signals deserve the inherently low distortion of a Type I (ferric) tape. And because I particularly value that last property, I stocked up on Maxell UD's and TDK OD's when those tapes were scheduled for replacement by cobalt-modified formulations.

There have been other brands as well. The point, I guess, is that I don't use just one brand of magnetic products and probably never will. I do believe in deciding on a formulation that works well for my purposes and buying it in bulk (no twofers for me), partly for consistency of results and partly to save money. But you'll seldom find that only one brand works well—or that you only have one purpose in buying tape. □

Amazing.



How it works.

A brief conversation with Bob Carver.

Q. How can The Amazing Loudspeaker put out so much powerful, extended bass?

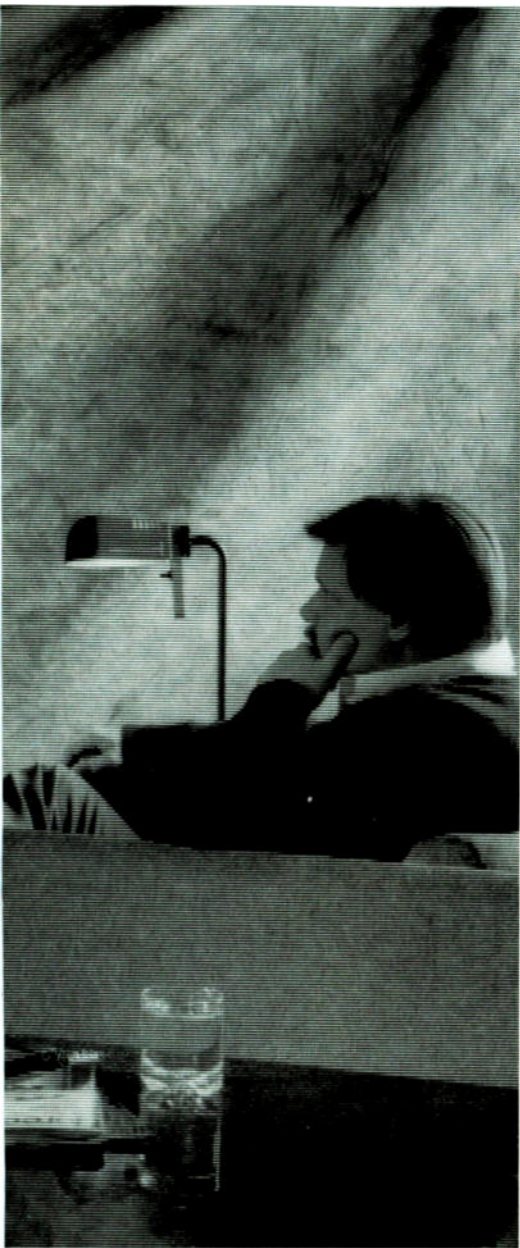
A. Brute force. A total of 8 subwoofers, each with 4 times the excursion of regular bass drivers for a total displacement (area times excursion) of almost 2000 cubic inches. The low frequency 3dB point is 18Hz!

Q. Why use a ribbon driver?

A. Because the sound of a ribbon is nothing short of glorious! Free of individual driver anomalies and crossover problems, the Amazing Loudspeaker's extended line source driver delivers a majestic sonic image that literally floats in 3-dimensional acoustic space. Simultaneously, it reproduces an amazing amount of musical detail that's simply unmatched by any point source driver.

POWERFUL

Distributed in Canada by: **evolution**
technology



This is not a typical speaker ad. Because The Amazing Loudspeaker is anything but a typical speaker.

This isn't even a typical *Carver* ad.

True, the Amazing Loudspeaker breaks so many conventional speaker rules — and succeeds so spectacularly at it — that we're tempted to fill this ad with a litany of hertz, watts and exotic buzz words the way our competitors' ads do.

"Its overall sound is spectacular. Its bass performance surpasses that of almost any other speaker one might name."

STEREO REVIEW

Because there's bound to be quite a story behind a speaker that's 5½ feet tall and yet just 1½ inches thick. Especially when Bob Carver has a hand (or rather two hands, both feet and a year or so of lab time) in its creation.

But ingenious design is only our means to an end. The beginning of a dramatic awakening that will re-define for you the very essence of music.

"The image is as wide, deep and multi-layered as I have ever heard. Only Infinity's \$35,000 Reference Standard impressed me more."

Henry Hunt
Hi Fidelity Editor
HOUSTON POST

The Amazing Loudspeaker can etch a sonic image so detailed you can almost see rosin drift from a bow onto the polished surface of a violin.

It can brighten your listening room with the sheen of a #4 drumstick on a Ziljan hi-hat cymbal. Or darken it with the smoky midnight growl of a battered baritone sax.

It can stun your senses and rearrange your furniture with thunderous salvos of tight, perfectly controlled low bass.

"It solves certain design problems and achieves certain sonic results with a simplicity and flair that can only be called, well, amazing."

Peter Aczel
THE AUDIO CRITIC

It can meticulously separate every instrument and vocal on a dense, multi-track mix and project each in sharp relief at precise points across the sound field.

In short, the Carver Amazing Loudspeaker restores what time and reading too many speaker ads often takes away.

Sheer wonder.

We have merely touched on the highlights of this truly amazing loudspeaker. We'd be happy to send you more information including reprints of several great reviews.

"Its price is ridiculously low for what it does and... what comparable products cost."

Julian Hirsch
STEREO REVIEW

However, if your immediate interest is the sensation of a listening room melting away to reveal the crystalline clarity of pure music, you need only visit your nearest Carver dealer.

Your amazement will begin when you discover just how affordable the Carver Amazing Loudspeaker really is.

CARVER

ACCURATE

Q. But aren't ribbon drivers inefficient?

A. Not when designed with enough magnetic field strength. Each Amazing Loudspeaker ribbon uses 30 feet of high energy magnets in a special focused field gap. At 82dB efficiency, that's almost twice as efficient as any other ribbon that goes down to 100Hz. Our M-1.01 power amplifier yields peak SPL's exceeding 106dB; up to 110dB with an M 1. 5! More than ample to deliver a symphonic orchestra's sonic power, fifth row center.

MUSICAL

ONE STEP IN THE MAKING OF A KEF

'Many so-called "8 Ohm" speakers present your amplifier with an impedance that varies from 3 to 30 Ohms, depending on frequency. Such speakers can seriously degrade your amplifier's performance.

'That's why KEF developed the conjugate load matching crossover. It presents your amplifier with an ideal 4 Ohm resistive load at all frequencies. Because it's easier to drive,

sensitivity and maximum amplifier output are effectively doubled. A conjugate load matching network is difficult to design because it simultaneously tailors frequency, phase and impedance. But the computer helps quite a bit.

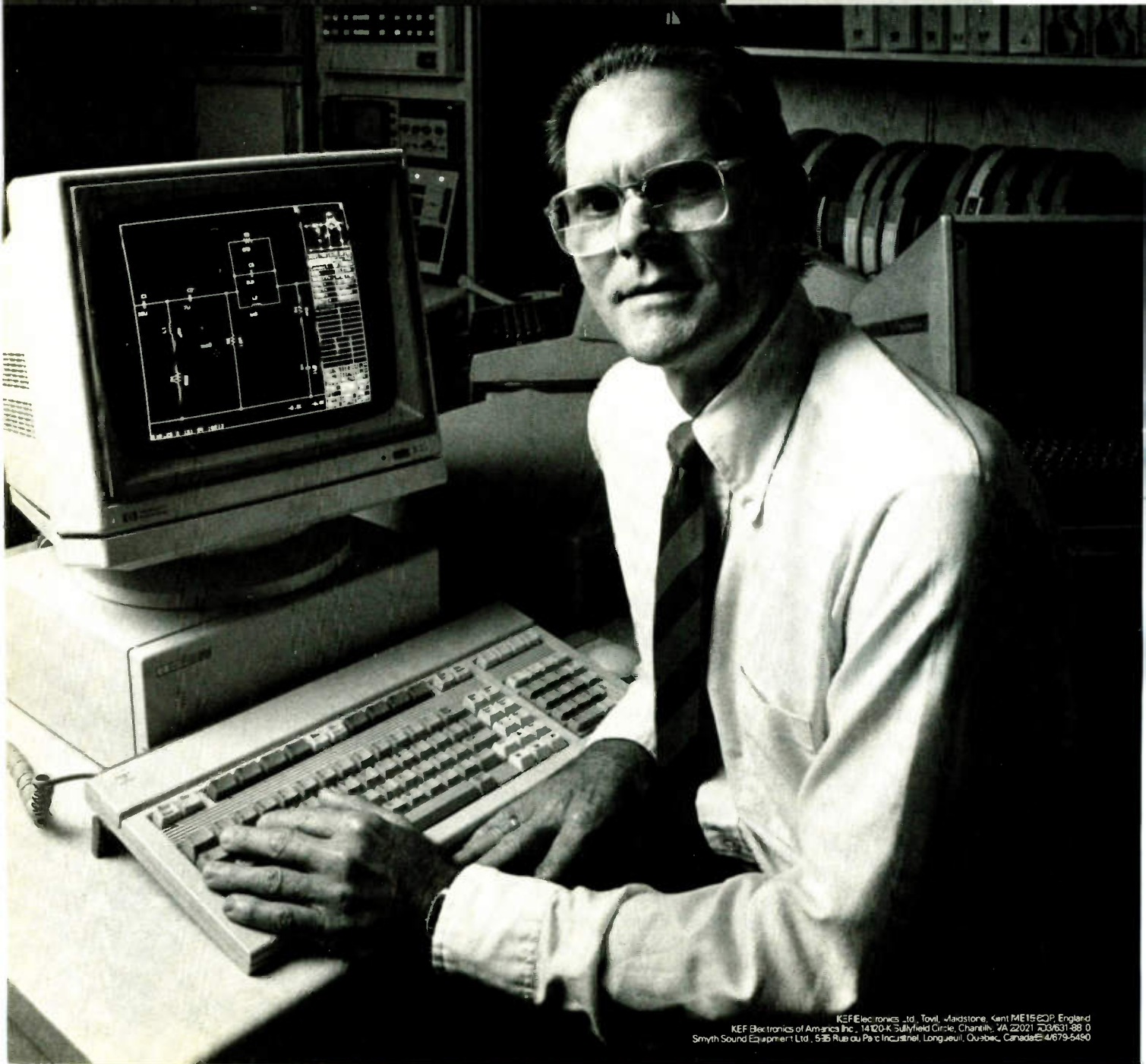
'It is this scientific approach, so different from hi-fi pseudo-science, that convinced me to leave the University of Sydney and join KEF.'

'We wanted to make our speakers easier to drive. We ended up making your amplifier twice as powerful!'

—Dr. Richard Small, HEAD OF KEF RESEARCH



KEF
The Speaker
Engineers



Report preparation supervised by Michael Riggs, David Ranada, Christopher J. Esse, Robert Long, and Edward J. Foster. Laboratory data (unless otherwise indicated) is supplied by Diversified Science Laboratories.

Test Reports

Regular readers will know how enamored we are of the picture and sound quality delivered by the Laserdisc videodisc system and how much we regret Laserdisc's failure thus far to win widespread support in the U.S. Although several thousand titles are theoretically available, they're hard to find (and virtually impossible to rent) in

of digital audio on a disc the size of a standard audio CD (12 centimeters, which is often translated, not quite accurately, to 5 inches). To date, the CD-V single's acceptance has been underwhelming, to say the least: As this report goes to press, not even one has appeared. Therefore, we and Diversified Science Laboratories concentrated attention on

Yamaha CDV-1000 CD/Videodisc Player



DAVID WAGNER

many parts of the country. Video outlets blame the situation on the lack of hardware, while hardware manufacturers find it difficult to sell players for which software is so hard to come by. The system has therefore caught itself in the classic "chicken and egg" conundrum, still awaiting the success it deserves.

So, hats off to Yamaha for supporting the system by boldly introducing the CDV-1000, a combination Laserdisc/CD/CD-V single player with excellent performance at a palatable price. Launched last year with much hoopla, the CD-V single combines a 5-minute music video with as much as 20 minutes

of digital audio on a disc the size of a standard audio CD (12 centimeters, which is often translated, not quite accurately, to 5 inches). To date, the CD-V single's acceptance has been underwhelming, to say the least: As this report goes to press, not even one has appeared. Therefore, we and Diversified Science Laboratories concentrated attention on

of digital audio on a disc the size of a standard audio CD (12 centimeters, which is often translated, not quite accurately, to 5 inches). To date, the CD-V single's acceptance has been underwhelming, to say the least: As this report goes to press, not even one has appeared. Therefore, we and Diversified Science Laboratories concentrated attention on

Dimensions: 17¼ by 4¼ inches (front), 15¼ inches deep plus clearance for connections.

AC Convenience Outlet: One, unswitched (300 watts max.).

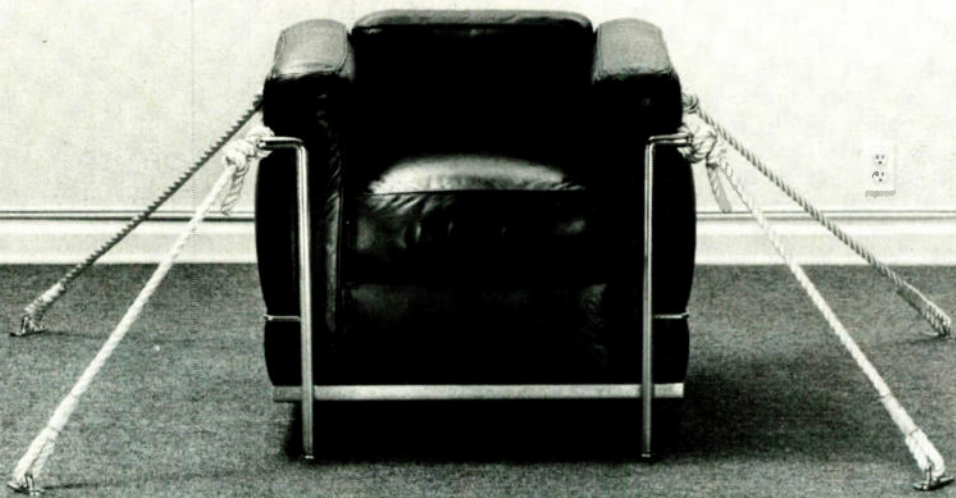
Price: \$799.

Warranty: "Limited," one year parts and labor.

Manufacturer: Yamaha Corp., Japan.

U.S. Distributor: Yamaha Electronics Corp., U.S.A., 6660 Orangethorpe Ave., Buena Park, Calif. 90620.

Most speaker designers haven't changed their position in 30 years.

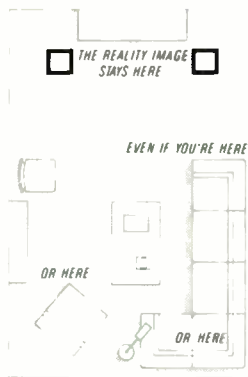


Presenting the dbx Soundfield series: Reality Imaging™ and the end of the stereo "sweet spot."

For 30 years, speaker designers have believed that the only way to achieve balanced stereo is to sit directly between and in front of both speakers. If you move out of this "sweet spot," the stereo image collapses and the frequency response is anything but flat.

At dbx, we took a revolutionary approach and developed a new speaker design that achieves stereo balance and frequency response so consistent from any listening position, so close to the real thing, we needed a new name to describe the experience: Reality Imaging.

Reality Imaging brings you right up to the stage. It's not only the sound, but the actual spatial reality—the feeling of being there. And it's an image that doesn't collapse if you move around.



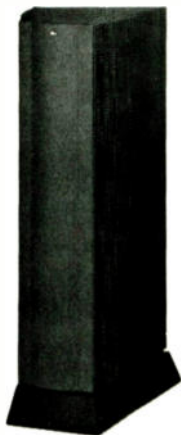
Not only can you hear it, you can see it.

Ask your dbx dealer to demonstrate with a sound analyzer (such as the dbx 14110) how consistently the flat and smooth response—and Reality Imaging—are maintained by dbx Soundfield speakers at every point in the room. Then ask him to do the same with any other speaker at any price.

You're in for a shock.

And we seriously suspect you'll be changing your position on stereo speakers for good.

Soundfield 54
\$2000 a pair*



Soundfield 150
\$1500 a pair*



Soundfield 1500
\$1000 a pair*



Soundfield 2500
\$580 a pair*



*Suggested retail prices

SOUNDFIELD
dbx

PO 100C, 71 Chapel Street, Newton, Mass 02195
(617) 964-3210

against the player when loading it into the tray. A slight push closes the drawer, while pushing the drawer button instead closes the tray and starts playback. The system senses the type of disc that is loaded, displays the appropriate legend (LD, CD-V, or CD) on a front-panel indicator and on the monitor screen, and cranks up to the correct speed. Two repeat modes are available. One press of REPEAT sets up replay of a single selection; two presses replays the entire disc. You also can continuously replay any section by pressing the A-B key once to mark the beginning of the desired passage and again to mark the end.

The keys mentioned above operate in the same manner whether the system is playing a videodisc, a CD, or a CD-V single. But the remote's numeric keypad functions somewhat differently for each type of disc. Because there is insufficient space in this report to discuss the fine details, suffice it to say that, with the number keys and FRAME-TIME/INDEX, you can directly cue the following: any track or index number of a CD or CD-V single, any chapter of a CAV (constant angular velocity) or CLV (constant linear velocity) Laserdisc, any frame number of a CAV disc, any time point (clocked from the beginning of the disc) of a CLV title, and any time point (clocked from either the beginning of the disc or from the beginning of the current track) on a CD or CD-V single. Cueing is aided by the switchable on-screen display as well as by the front-panel time/track/chapter readouts and player-status indicators.

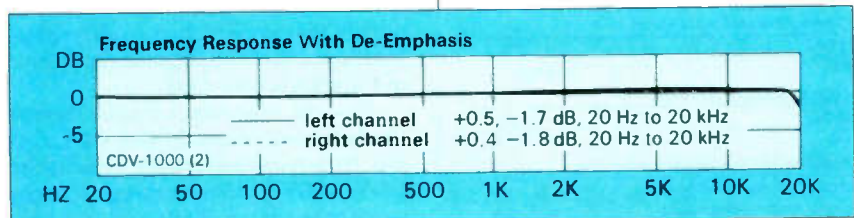
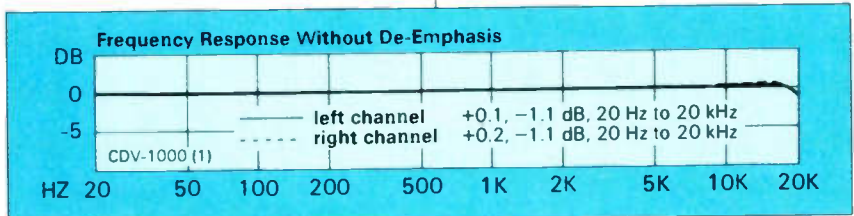
By pressing PROG MEMORY, you can use the remote to memorize a starting point without knowing the frame number or time cue. Pressing PLAY will then return to that point on the disc, regardless of format. The principal purpose of this key, however, is to activate the unit's programmed-playback function, which can store as many as 15 selections (CD tracks or videodisc chapters).

Other cueing features include track/chapter skipping in both directions and bidirectional high-speed scanning. Initially, the scan is at about 15 times normal playback speed, but, after three seconds, it speeds up to 60 times normal. On a CD or the audio-only portion of a CD-V, scanning is audible, but not for the video portion of a CD-V or either videodisc format.

Two of the remote's keys are used only with videodiscs. SOUND cycles through three possible audio-output formats: stereo, left channel to both speakers, and right channel to both speakers. The last two are for listening to either language of a bilingual disc. The D/A-

CX button selects between the digital and analog soundtracks on videodiscs containing both. It also manually activates or deactivates the CX noise reduction system for analog recordings; on recently pressed CX-encoded discs, though, the CDV-1000 will usually activate CX automatically. Furthermore, the CX system cannot be defeated on those discs.

Finally, six keys function only with CAV Laserdiscs (the format that can hold a maximum of 30 minutes per side). When pressed once, either of the two STILL keys freezes the image, but pressing either one a second time moves the picture frame by frame either forward or backward. The two MULTISPEED PLAY



keys operate in conjunction with two speed-up/down keys to provide ten playback speeds ranging from 12 times normal to an ultra-slow-motion of three frames per second in either direction. From any of these special playback modes, normal-speed playback resumes when PLAY is pressed.

Connecting the Yamaha CDV-1000 to your system is very simple. A standard pin jack carries a composite-video signal directly to a monitor. In addition, a coaxial F-connector radio-frequency output hooks up to the antenna input of a conventional television. In the latter case, a rear-panel slide switch gives you a choice of feed on either Channel 3 or 4. While audio from this feed is mono only, three pin-jack audio outputs are included for connection to a stereo system: a left-right stereo pair and a single mono output. In its fairly complete manual, Yamaha suggests the use of the latter "when the television or VCR to be used has a mono audio input jack only."

As a video-reproduction system, the Yamaha CDV-1000 proved its mettle in Diversified Science Laboratories' tests. The CDV-1000 employs a custom Ya-

Compact Disc Playback

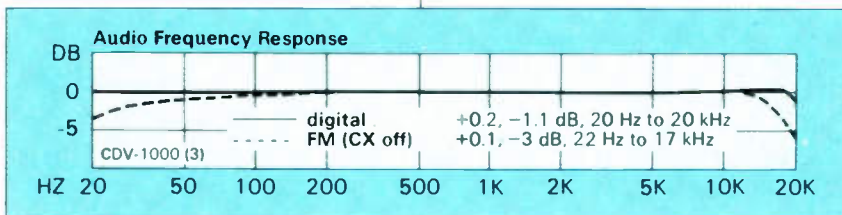
All data were obtained using the CBS CD-1, Sony YEDS-7, Philips 410 055-2, and Philips 410 056-2 test discs.

Channel Separation (at 1 kHz)	101.1% dB
Channel Balance (at 1 kHz)	< 0.1 dB
S/N Ratio (re 0 dB; A-weighted)	
without de-emphasis	97 dB
with de-emphasis	101 1/4 dB
Harmonic Distortion (THD+N; 40 Hz to 20 kHz)	
at 0 dB	< 0.01%
at -24 dB	< 0.018%
IM Distortion (70-Hz difference; 300 Hz to 20 kHz)	
0 to -30 dB	< 0.01%
Linearity (at 1 kHz)	
0 to -50 dB	no measurable error
at -60 dB	+0.1 dB
at -70 dB	+0.7
at -80 dB	+2.8 dB
at -90 dB	+6.9 dB
Tracking & Error Correction	
maximum signal-layer gap	≈ 900 μm
maximum surface obstruction	> 800 μm
simulated-fingerprint test	pass
Maximum Output Level	2.08 volts
Output Impedance	970 ohms

Test Reports

Videodisc Playback

All data obtained using the Pioneer M-1 and F-2 test discs



Channel Separation (at 1 kHz)	
digital	108 1/2 dB
FM	see text
Channel Balance (at 1 kHz)	
digital	< -0.1 dB
FM	+0.1 dB
Audio S/N Ratio (re 0 dB; A-weighted)	
digital (without de-emphasis)	98 dB
digital (with de-emphasis)	102 dB
FM (CX off)	58 dB
FM (CX on)	73 3/4 dB
Harmonic Distortion (THD at 1 kHz, 0 dB)	
digital	< 0.01%
FM	0.23%*
Linearity (digital; at 1 kHz)	
0 to -50 dB	no measurable error
Audio Output Level (at 0 dB)	
digital	2.08 volts
FM	0.47 volt
Video Frequency Response	
at 500 kHz	-1/4 dB
at 1.25 MHz	-2 1/4 dB
at 2.0 MHz	-3 1/2 dB
at 3.0 MHz	-5 1/4 dB
at 3.58 MHz	-4 3/4 dB
at 4.1 MHz	-4 1/4 dB
Luminance Level	standard
Gray-Scale Nonlinearity (worst case)	≈ 5%
Chroma Level	≈ 4 1/2 dB low
Chroma Differential Gain	≈ 15%
Chroma Differential Phase	≈ +4°
Median Chroma Phase Error	+4°

* Total harmonic distortion plus noise (THD + N)

maha integrated circuit called a Direct FM Time Base Corrector, which is said to aid in the production of high horizontal resolution with exceptionally sharp detail. Whatever the cause, the player's measurable horizontal luminance resolution at the very least approaches the limits of the NTSC system; the response at 4.1 MHz (the top frequency on our video test disc) is down only 4% dB, for an implied resolution in excess of the NTSC limit of 330 lines.

Luminance level is perfect, and gray-scale linearity is excellent. Chroma noise and chroma differential phase and gain errors are all lower than we customarily experience on videotape systems. Chroma level is somewhat low (though this is

usually the case with home video equipment), and the chroma phase (hue) error of 4 degrees is very good.

For old videodiscs whose soundtracks are recorded only with the Laserdisc frequency-modulation system, the CDV-1000's audio performance is about par for the course. While analog soundtrack performance (even with CX noise reduction activated) pales in comparison to that of the digital audio soundtracks, it is far superior to the audio performance of a VCR using analog edge-track recording. In any case, the only anomaly DSL found with analog-soundtrack playback was numerous signal artifacts in the "dead" channel during the separation test. Since the leakage was not harmonically related to the 1-kHz test signal recorded in the "live" channel, the lab chose not to give a numeric crosstalk figure.

On more recent videodiscs that have digital soundtracks, the sound quality is superb and fully equivalent to that of a CD—given that the program material has been recorded and transferred well, of course. The test results with a CD or a digitally recorded videodisc are identical within the limits of measurement error. The generally very flat response is down by 1.1 dB at 20 kHz—a shade more than on the finest CD-only players but discernible only by bats and porpoises. There's also a bit more de-emphasis error than we see from the best CD players, but it's barely greater than a musically inconsequential 1/2 dB. Techno-

philes will be pleased to know that the CDV-1000 incorporates two-times-over-sampling digital filters and maintains the absolute phase (polarity) of the recorded signal.

Channel separation remains exceptionally good even up to 20 kHz, where it measures 77 1/2 dB. Output voltage and impedance should not create any connection problems with normal equipment. The CDV-1000 cleared all hurdles of the Philips error-correction/tracking test disc except for a few ticks (but no actual mistracking) generated when playing the track with 900-micron interruptions in the information layer.

On the whole, harmonic distortion is far below audible thresholds throughout the audio band, at both the 0-dB and -24 dB test levels. From 0 dB through -50 dB, there is no measurable linearity error; at -40 dB, distortion is less than 0.055 percent. As usually happens, however, the measured results deteriorate somewhat at lower levels. At -70 dB, the linearity error reaches 0.7 dB and, at -80 dB, is almost 3 dB. At the lowest recorded level (-90 dB), the linearity error is 6.9 dB with a commensurate increase in distortion percentage. The error seems to be attributable to non-monotonicity around the eighth least significant bit in the unit's digital-to-analog converter. (This test, which we have just begun to perform, has revealed similar effects with some audio-only CD players as well.)

For those accustomed to non-Super-VHS VCRs, the picture produced by the Yamaha CDV-1000 will be a revelation. Resolution is superb, and color noise is noticeable by its absence. Even magenta, the most noise-prone of the colors on both Laserdiscs and home videotape, comes out quite clean unless it covers much of the image—which is unlikely in real-life scenes. The visual special effects (fully available only for CAV-type videodiscs) are excellent, although there can be a little bit of picture shake at the slowest slow-motion speed. The sound is excellent, too, especially with a digitally recorded Laserdisc. When operating with a videodisc, the player itself emits less mechanical noise than other players we have used.

If you're interested in the best pre-recorded video around these days, we urge you to look at a Laserdisc player. In our opinion, the Yamaha CDV-1000 is an excellent candidate with fine performance, a useful array of features, and a built-in CD player to boot. Players like the Yamaha CDV-1000 can only further the Laserdisc system's reputation for quality. □

**Kenwood
KRC-858
Car-Stereo
Receiver/
Cassette Deck**

Kenwood's KRC-858 is a handsome car cassette/receiver with a long list of features. In addition, its slide-out design enables you to easily pop the unit out of its mounting so that would-be thieves see only a rectangular opening in the dash—an increasingly popular approach to theft prevention. To remove the KRC-858, you press a front-panel release button and raise the handle that normally nests against the sides and bottom of the escutcheon. (A warning light tells you when the handle isn't stowed correctly and when the re-

the line-level loop supply the two channels of signal plus the 12-volt DC that turns on the outboard gear. Pin assignments on the DIN connectors aren't the same as in otherwise similar plugs we've encountered; if you attach other brands of equipment to these connections, you should use a Kenwood KDR-100 DIN-to-pin adapter to avoid getting DC into an audio input.

Kenwood offers power ratings only for the KRC-858's bridged-stereo output mode. Diversified Science Laboratories normally measures amplifiers in



DAVID WAGNER

ceiver is secure in its mounting.) Then, pulling on the handle, you simply extract the chassis from both its mounting sleeve and the docking connector at the back of the sleeve.

Attached to that connector are short lengths of wire for all of the unit's other connections, including four speakers. The manual (which, frankly, isn't one of the best-written we've seen) gives instructions for attaching only the two front speakers in bridged-stereo configuration for more per-channel power. The line connectors permit insertion of an outboard equalizer or the addition of an outboard amplifier to drive the back speakers. Used with Kenwood ancillary equipment, the DIN-style connectors in

their unbridged configuration (if one is available), and all the data in this report refer to Kenwood's bridged-stereo mode. The power measurement (at 3 percent distortion) comes in at a little above Kenwood's 10-watt rating (for 1 percent distortion), essentially confirming the manufacturer's figure.

As indicated by the curve, the basic FM response of the receiver rolls off in the deep bass, presumably to prevent overloading of relatively small woofers with which such a unit is likely to be used. Response can be modified either with the loudness switch (which boosts response in the region below 100 Hz by about 8 dB and that above 10 kHz by 5 dB or more) or the tone controls. ▶

Dimensions: 7¼ by 2¼ inches (chassis front), 6 inches deep; escutcheon, 7½ by 2¼ inches.

Connections: Bared wires for ignition and battery; spade lug for ground; special 8-pin DIN male/female pair for pre-amp-out/main-in loop (including power switching); flat female for power antenna; round male/female pairs for speakers; standard coaxial female for antenna input.

Fuses: Flat plug-in; 5-amp for ignition, 3-amp for battery.

Price: \$619 to \$739.

Warranty: "Limited," one year parts and labor.

Manufacturer: Trio-Kenwood Corp., Japan.

U.S. Distributor: Kenwood U.S.A. Corp., 1315 E. Watsoncenter Rd., Carson, Calif. 90745.

SAVE MONEY, TIME AND FREIGHT ON FAMOUS BRAND STEREO EQUIPMENT



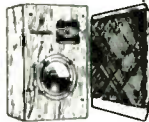
illinois audio (800) 621-8042 / (312) 664-0020
12 E. DELAWARE PLACE • CHICAGO, IL 60611

LOUDSPEAKERS



TECHNICS SBL-35
Powerful Loudspeaker System
• Linear Phase 2-Way System • Large Diam. 10" Woofer • Anti-resonance cabinet • Attractive Woodgrain Finish
List \$80.00 ea.
SALE: \$41.00 ea.

E.P.I. T/E 7011
2-Way Loudspeaker System
• Accurate Frequency Response • Ultra Wide Dispersion • Low Distortion • Oak Veneer Finish
List \$99.95 ea.
SALE: \$69.00 ea.



TECHNICS SBK14
3-Way Speaker System
• 12" Woofer • Horn Super Tweeter • High Heat Resistance • Efficiency Bass Reflex Design • Heavy Duty Anti-Resonance Cabinet
List \$140.00 ea.
SALE: \$79.00 ea.

E.P.I. T/E 10011
2-Way Loudspeaker System
• Smoother High Freq. Response • Wide Dispersion • Oak Veneer Finish
List \$129.95
SALE: \$99.00 ea.



PORTABLES

AIWA HST-260
Compact Headphone Stereo Player
• AM/FM Stereo Radio w/ Cassette • Dolby NR • High Fidelity • Belt Hanger • Metal Tape Cap
List \$65.00 CALL



SONY WMF-10011
Sony Super Walkman
• AM/FM Stereo Cassette Player • X-Tra Small Size • Auto Reverse • Quick Charger • Dolby B NR
List \$199.95
SALE: \$129.95



SONY D-10
Discman Portable CD Player
• Ultra Small & Lightweight • Rechargeable Battery Pack • 21 Track Random Music Sensor • 4 Repeat Modes • Unilinear Converter w/ Digital Filter
List \$349.95 CALL



AUTO



SONY ESS-93
6" x 9" 3-Way Car Speakers
• Hi-Power • Oval Shape • 80 Watts Max Power Handling
List \$409.95 Pair **SALE: \$66.00 Pair**



JENSEN JS-6200
AM/FM Car Stereo w/ Cassette
• Digital Tuning • Auto Reverse • 12 Station Presets • Seek & Scan
List \$249.95 **SALE: \$145.00**

CASSETTE DECKS



AIWA ADS-10
Hi-Fidelity Stereo Cassette Deck
• Flat Keyboard Oper. Panel • Dolby B & C NR • Fine Bias • 2-Head System • Cue & Review • Auto Tape Select
List \$139.95 **SALE: \$99.00**



TEAC V-770
3-Head Stereo Cassette Deck
• Full IC Logic Trans • Dolby B & C Double NR with HX Pro • Bias Fine Tuning • Intro Check
List \$469.00 **SALE: \$269.00**



TECHNICS RST-55R
Double Quick Reverse Cassette Deck
• Auto Reverse on Both Tape Drives • 24 Hr. Contin. Playback • HiSpd. Editing • Synchro Start, Stop & Mute • dbx, Dolby B & C
List \$379.00 **SALE: \$274.00**



TEAC R-888X
Auto Reverse Cassette Deck
• Bi-Directional Record & Playback • Quick Reverse • 3-Head Function • Two Motor Transport • Double NR—dbx, Dolby B & C • Auto Search
List \$699.95 **SALE: \$379.00**

RECEIVERS



TECHNICS SA-918
Quartz Synthesizer AM/FM Stereo Receiver
• 70 Watts (35x2) • 16 Memory Presets • Tape Mon. Switch • Bass & Treble Controls • Quartz Clock • Low Distortion
List \$240.00 **SALE: \$127.00**



TECHNICS SAR-310
Quartz Synthesizer AM/FM Remote Stereo Receiver
• 5-Band Eq. & Spectrum Analyzer • 24 Memory Presets • 40 Key Wireless Remote • 110 Watts (55x2)
List \$460.00 **SALE: \$249.95**



AKAI AAV-405
Surround Sound Receiver
• Remote Controlled • 200 Watts (100x2) • 7-Band EQ • Video Inputs • 16 Presets
List \$599.95 **SALE: \$389.00**



JVC RX-750
Remote Control Receiver
• 200 Watts (100x2) • Computer Synth. Tuning • 32 Presets • Auto Memory • Preset Scan • 7-Band EQ • Sleep Timer • 3 Video Inputs
CALL

CD PLAYERS



SHARP DX-660
Compact Disc Player
• 3-Beam Laser Pick up • Programmable Memory • Cue Review
List \$249.95 **SALE: \$138.00**



TECHNICS SLP-120
Programmable CD Player
• High Resolution Digital Filter • Double Oversampling • High Speed Transport & Repeat
List \$320.00 CALL



SONY CDP-21
Compact CD Player
• Unilinear Converter w/ Digital Filter • Env. Diff. Detection Sys. • 16-Track Random Music Sensor • Auto Music Sensor • 4 Repeat Modes w/ Shuffle Play
List \$250.00 **SALE: \$179.00**



SHARP DXC-6000
Multi Disc CD Changer
• Programmable 6-Disc Multi-Play Changer • 5 plus 1 disc mag. play w/ Single Disc Tray • Remote Control • 32 Selection Memory • 3 Beam Laser Pick up • 16 Bit Filter & Cue Review
List \$549.95 **SALE: \$299.95**



JVC XLM500
CD Multi Changer
• 6 Disc Capability • Remote Control • Random Access Program up to 32 steps from 7 discs • Repeat • Memory back up • 3 Beam Laser Pick up and digital filter
List \$550.00 **SALE: \$349.95**

TURNTABLES

TECHNICS SLBD22
Belt Drive Semi-Automatic Turntable
• T4P Cartridge Connect Sys. • Highly Sens. Gimbal Suspension Tonearm • Anti-Vibr. Construction • Pitch Control • Illum. Stroboscope
List \$129.00 **SALE: \$77.95**



TECHNICS SLDD33
Phase Locked Direct Drive Automatic Turntable
• Highly Sensitive Gimbal Sus. Tonearm • T4P Mount Cartr. Connector System • Front Panel Oper.
List \$169.00 **SALE: \$99.95**



TECHNICS SLGD35
Quartz Direct Drive Fully Automatic Turntable
• Highly Sens. Gimbal Sus. Tonearm • Vibr. Absorbing Base • Front Panel Oper. • Disc Illum.
List \$190.00 **SALE: \$121.95**



HEADPHONES

KOSS PRO 4X
Lightweight Design • Pro Choice • Digital Ready
List \$90.00 **SALE: \$49.95**

SENNHEISER HD414SL
Open Air • Innovative Design • Sound Isolating
List \$89.95 **SALE: \$49.95**

SONY MDR CD6
Adjustable • Open Air • Digital Ready
List \$119.95 **SALE: \$79.00**

AUDIO TAPE

TDK SA-90
Ultra Quiet Hi-Bias tape
10 for **\$16.50**

SONY UX-PRO 90
Hi-bias, perfect for line or digital recordings
10 for **\$23.99**

MAXELL XLI190
Standard Hi-bias cassette
10 for **\$16.80**

MAXELL XLIIS90
Extended Range Hi-bias
10 for **\$19.50**

CARTRIDGES

SURE V15-IVMR
Micro Ridge Standard Mount • Ultra Accurate Tracking • Dynamic Stabilizer
List \$110.00 **SALE: \$69.95**

AT 122LP
Dual Magnet • Plug-In Connector • Linear Contact Diamond Stylus
List \$125.00 **SALE: \$49.95**

SHURE V15MR
Ultra Accurate Tracking • Dynamic Stabilizer • Side-guard Protection
List \$275.00 **SALE: \$129.95**

illinois audio
12 E. Delaware Pl., Chicago 60611

16 YEARS OF MEETING THE NATION'S STEREO NEEDS WITH THE ABSOLUTE BEST PRICES ON TOP NAME NATIONAL BRANDS
Call Mon. thru Sat. 10 to 5 (312) 664-0020 • 1 (800) 621-8042



Prices in this ad are for mail-order only. Freight charges not included in prices. All merchandise shipped brand new, factory fresh with full warranty. Not responsible for typographical errors.



NOTE: This is just a partial listing of our extensive inventory, please call for quotes on additional items or to request a free price list.

The latter are adjusted using what usually serve as the volume up/down buttons. When you push the tone-control button once, the bass can be set using the up/down buttons; a second push enables you to set the treble. To aid in adjusting the tone controls, the lowest portion of the readout panel (normally a bar that expands from left to right to show volume setting) is reduced to a centered spot; this spot expands to the right or left as tone is adjusted up or down from "flat." Adjustment range is good, action is fairly predictable, and incursion of each control into the other's frequency band is almost nonexistent, something rare even with home components.

A button marked POSITION converts the display to show left-right balance (which can then also be set by the volume controls) and fader setting (adjusted the same way when a separate back-channel amp is used or by a separate "power fader" slider when only the built-in four-channel amp is used). Five seconds after you make any of these adjustments, the volume controls automatically revert to their original function.

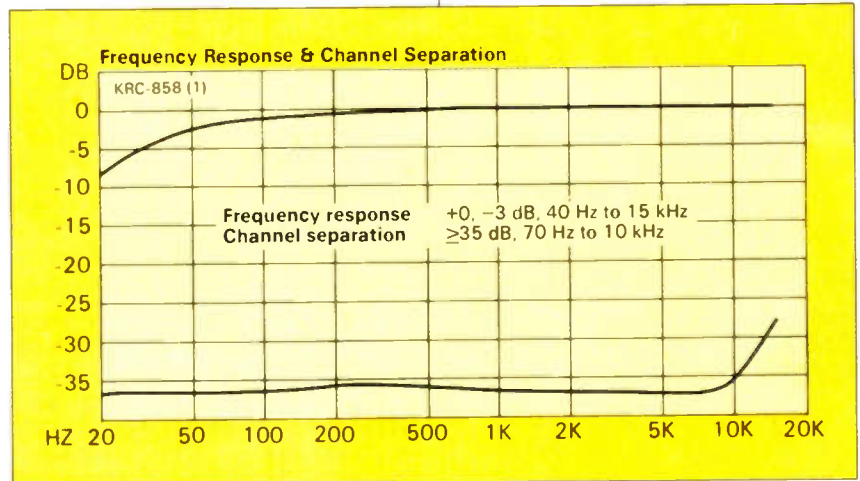
The power switch to the right of the volume controls offers three options. If you press the button once during normal operation, the level indicator jumps back to the left and begins flashing, and the output is attenuated by 20 dB ("muting," as it's often called in home gear). This is a useful function when yelling at the kids in the backseat. Press the button twice within two seconds, and the power turns off; wait more than two seconds before the second tap, and full output is restored.

The tuning options also include some unusual modes. DIRECT lets you enter station frequencies on the numbered keypad above it. This is most helpful for initial memory setup (the keypad also serves as the preset selector for 10 AM and 20 FM stations) but is a poor choice for the in-transit driver. For on-the-road tuning, four modes are provided: manual or automatic dial-scanning, manual or automatic memory-scan (which samples in turn each preset or only those whose signal strength is above the automatic-scan threshold), automatic seek when the tuned station fades, and automatic memory programming (for as many as ten stations only, so you can leave your ten home stations undisturbed on the FM1 bank when you fill up FM2 on the road). The memory holds through protracted periods while disconnected from its mounting sleeve.

Tuner stepping is by 0.2 MHz on FM or 10 kHz on AM. It is possible to change these increments to 0.25 MHz

and 9 kHz, respectively, if you take the KRC-858 outside U.S.-standard broadcast zones. The display panel includes indicators for five levels of radio signal strength, stereo reception, and basic tuning modes in addition to the large frequency numerals.

Among the button-selected mode options for FM is ANRC. In effect, this



limits stereo separation to about 25 dB (no matter how strong the signal) and reduces separation still further in the moderate-signal-strength range—say, 45 to 65 dB. In this range, ANRC thus cancels some noise in stereo reception at some expense to channel separation. Above this range, there is no net gain in S/N (signal to noise) ratio with increasing signal strength. Below it (and at the 50-dB sensitivity rating point), separation is negligible even with the feature off, making the reception stereophonic in name only. For this reason, no stereo sensitivity figure appears in our data.

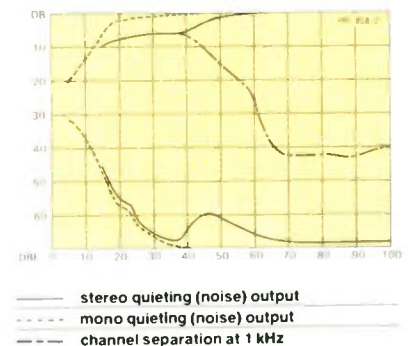
With the ANRC off, the separation curve was so steep in places that we expected to hear rapid fluctuations in stereo separation during our on-the-road multipath test. Instead, we never heard full separation. The result was a limited range of image fluctuation, which can otherwise be a major source of annoyance. Noise-burst "spitting" was only moderate in loudness and duration and, hence, also less annoying than it can be, despite its crackly, unattenuated highs. Therefore, we rate the KRC-858's poor-reception listenability relatively high.

Naturally, FM performance improves remarkably with full signal strength. Curiously, mono frequency response isn't quite as flat at the top end (it's down 1 dB at 15 kHz) as that in stereo, and the capture ratio isn't as good as we would expect in a unit of this quality. But the remaining FM data are all excel-

FM Tuner Section

All measurements shown were made with ANRC turned off

Sensitivity & Quieting



Stereo sensitivity (for 50-dB noise suppression) see text

Mono sensitivity (for 50-dB noise suppression) see text

17 1/2 dB at 98 MHz

Stereo S/N ratio (at 65 dBf) 67 3/4 dB

Mono S/N ratio (at 65 dBf) 71 1/4 dB

Capture Ratio 5.5 dB

Selectivity (alternate-channel) 69 1/4 dB

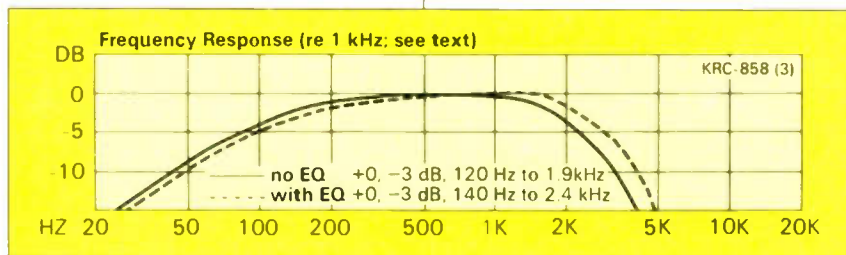
AM Suppression 73 dB

Harmonic Distortion (THD + N)

	stereo	mono
at 100 Hz	0.38%	0.56%
at 1 kHz	0.32%	0.37%
at 6 kHz	1.00%	0.40%

Test Reports

AM Tuner Section



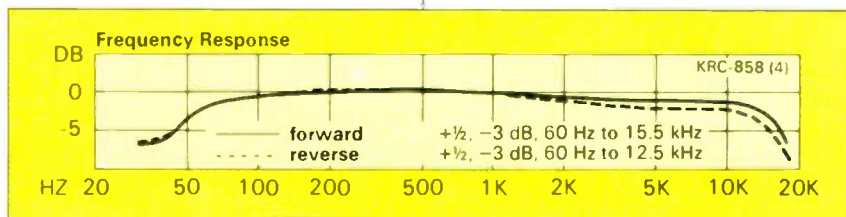
Sensitivity	30 μ V
Selectivity	see text
AVC Range	67 dB

lent. Moreover, we enjoyed the sound with good signals and typical speakers.

The AM section also struck us as very listenable, although again at some expense to numerical performance. The lows—and especially the highs—are severely rolled off to exclude as much as possible of the spurious noises to which AM is heir. The recently proposed AM pre-emphasis/de-emphasis EQ is shown

as a dotted line in our response graph, which normalizes both curves to 0-dB output at 1 kHz (where the EQ is just beginning to take effect). Thus the shapes of the curves are virtually identical—but not coincident—at lower frequencies. Assuming no other form of EQ is used (if any station works that way), the new pre-emphasis should add a little bright-

Cassette Transport Section



Wow & Flutter	$\pm 0.24\%$ avg. $\pm 0.33\%$ peak
Speed Accuracy (10.4 to 14.4 volts)	$\pm 0.9\%$ fast

Preamp/Amplifier Section

Bass Control	+10 $\frac{1}{4}$ -10 $\frac{1}{2}$ dB at 100 Hz
Treble Control	+9 -8 $\frac{1}{2}$ dB at 10 kHz
Line Output Impedance	165 ohms
Maximum Line Output (low/high output settings)	
from FM	0.30 or 1.00 volt
from tape (DIN 0 dB)	0.34 or 1.15 volts
Output (per channel into 4 ohms; at 3% THD+N)	
at 1 kHz	10.3 watts (10.1 dBW)/channel

ness and intelligibility to AM sound.

Measured frequency response of the tape deck is a little disappointing, primarily because of a poor azimuth match between its head and the lab's measurement tape (which affects the highs), but also partly because of the preamp's deep-bass rolloff. The figures for speed accuracy and stability are about par for such a deck. In the road test, we did notice some slight, short-duration pitch wobbles attributable to road shock, but the residue of a winter storm made our test track a bit more demanding than usual.

The transport is controlled by the same buttons used for different functions when no tape is inserted into the slot. The radio's first preset button, for instance, toggles between 70 microseconds ("metal") EQ and 120 microseconds. Preset 2 advances the tape to the beginning of the next selection. Preset 3 controls the "tuner call" mode that supplies sound from the tuner whenever the transport goes into the fast-wind modes, which are activated by the manual tun-

ing buttons. Presets 4 and 5 switch Dolby noise reduction (respectively) on and off and between B and C. The preset-scan bar ejects the tape, as does turning off the power.

Despite the complexity of these controls, we found them easy to master. In fact, we ended up admiring the design's ergonomics even though we had at first



The 858's tuner keys control its deck, too.

been somewhat intimidated by the sheer profusion of controls and features. We haven't even mentioned such niceties as the illumination-color option: green or a bronzy orange at the touch of a button. In such matters, the Kenwood clearly is more luxurious than most models. Less obvious is its excellent listenability—a quality that can be obscured by measurements intended to document mere electrical performance. In short, we enjoyed testing and using the KRC-858.

ABOUT THE dBW

We currently are expressing power in terms of dBW—meaning power in dB with a reference (0 dBW) of 1 watt. The conversion table will enable you to use the advantages of dBW in comparing these products to others for which you have no dBW figures.

WATTS	dBW	WATTS	dBW
1.0	0	32	15
1.25	1	40	16
1.6	2	50	17
2.0	3	63	18
2.5	4	80	19
3.2	5	100	20
4.0	6	125	21
5.0	7	160	22
6.3	8	200	23
8.0	9	250	24
10.0	10	320	25
12.5	11	400	26
16.0	12	500	27
20.0	13	630	28
25.0	14	800	29

Though technically an audio-video receiver that switches the video with its attendant audio, the NEC A-910 concentrates single-mindedly on audio in both performance and features. In some home entertainment systems, the amplifier's single-button A/V selection may prove an important convenience; in others, it might be best to ignore the A-910's video jacks and route the picture independently (to facilitate watching simulcasts, for example). For this test, we chose to approach the 910 as an audio model with a video bonus, partly because we weren't testing it with other NEC equipment. However, the supplied wireless remote makes NEC's intentions clear: In an appropriately configured all-NEC audio-video system, you can control almost anything you want from your armchair.

NEC's approach to the question of tape switching is refreshingly simple—so much so that we were initially baffled. Jacks are marked for one VCR (stereo audio, plus video) and one audio-only deck. Hidden on a subsidiary-control panel behind a flip-down door is a "recording selector" that controls only the VCR audio. The regular "tape" (i.e., audio-only) output jacks carry only the source chosen on the main selector buttons above this panel. Using this switching, you can dub audio from tape to VCR (with the recording selector set to TAPE) or from VCR to tape (with the VCR button of the main selector). NEC's circuit prevents feedback when you switch to the configurations in which either deck is its own source. This approach poses only two problems: Although a normal setup enables the VCR to record simulcast FM sound along with a TV picture, it leaves you monitoring the inferior (and usually mono) TV soundtrack. You can get the FM sound only by playing back the videotape. And there is no provision for monitoring—even from the audio deck—while recording is in progress.

Also behind the flip-down door are the bass, treble, and balance controls, the speaker selector (A, B, A+B, and off), and two switches: MM/MC phono mode and a total power shutdown called VACATION. The alternative to this last switch, located just above it on the main panel, is an on/standby switch that always keeps the remote sensor activated. Aside from the input-selector buttons, the only other main-panel controls are the volume knob (driven by a motor when the remote is used) and a muting switch that provides essentially complete silencing. A standard headphone jack is at the lower left.

The top of the panel is dominated by a

"power meter" consisting of flashing bars. The meter is calibrated in 10-dB steps through most of its range, though parallax makes it very difficult to correlate the calibrations with the display segments. The power display cannot be turned off. To the right of the meter are green indicator lights that display the selected source and red lights for the source chosen at the hidden recording switch. To the left is a similar readout for the speaker selector.

The supplied SR-291 infrared remote, which requires two AA cells, covers all of the A-910's main controls, but not those hidden by the front-panel door. When used with compatible NEC components, the remote will also turn on au-

NEC A-910 Integrated Amplifier



DAVID WAGNER

dio and video systems independently, tune audio and TV tuners, and cue and play (or record, where possible) CDs, cassettes, or videotapes. Furthermore, hard-wired remote-control connections can be made between back-panel jacks and certain NEC tuners and cassette decks.

The back panel is well laid out, considering the multiple input options—phono, tuner, CD, tape, aux, TV, and VCR (with the latter three having video inputs as well). The video pin jacks are color-coded in yellow. Jumpers can be removed if you want to insert a signal processor between the preamp and power sections. The speaker outputs are heavy binding posts that accentuated

Dimensions: 17 by 6 inches (front), 15 inches deep plus clearance for controls and connections.

AC Convenience Outlets: Three switched (100 watts max. total), one unswitched (100 watts max.).

Price: \$649.

Warranty: "Limited, two years parts and labor.

Manufacturer: NEC Corp., Japan.

U.S. Distributor: NEC Home Electronics (U.S.A.), 1255 Michael Dr., Wood Dale, Ill. 60191

Test Reports

Rated Power (8 ohms)

20.0 dBW (100 watts)/channel

Output at Clipping (at 1 kHz; both channels driven)

8-ohm load 21.1 dBW (130 watts)/channel

4-ohm load 22.9 dBW (195 watts)/channel

Dynamic Power (at 1 kHz)

8-ohm load 21.7 dBW

4-ohm load 24.1 dBW

2-ohm load 25.5 dBW

Dynamic Headroom (re rated power)

8-ohm load +1.7 dB

4-ohm load +3.0 dB

Harmonic Distortion (THD; 20 Hz to 20 kHz)

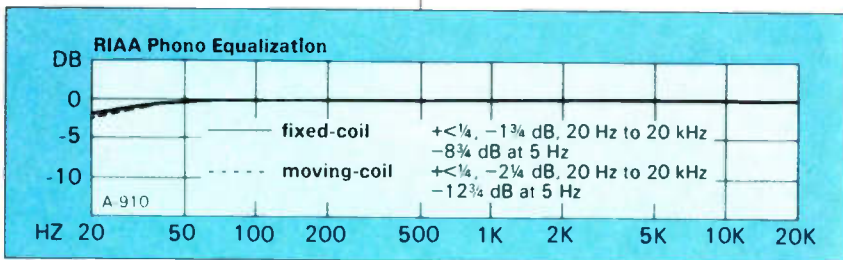
at 20.0 dBW (100 watts) < 0.01%

at 0 dBW (1 watt) < 0.01%

Frequency Response

+ < 1/4, - 1/4 dB, 20 Hz to 51.0 kHz

+ < 1/4, - 3 dB, < 10 Hz to 128 kHz



Sensitivity & Noise (re 0 dBW; A-weighting)

	sensitivity	S/N ratio
aux input	15.4 mV	75 3/4 dB
fixed-coil phono	0.25 mV	73 dB
moving-coil phono	25 μV	71 3/4 dB

Phono Overload (1-kHz clipping)

fixed-coil phono 250 mV

moving-coil phono 25 mV

Input Impedance

aux input 91k ohms

fixed-coil phono 50k ohms, 160 pF

moving-coil phono 100 ohms

Output Impedance (to tape)

from aux input 1,100 ohms

from phono inputs 3,900 ohms

Damping Factor (at 50 Hz; re 8 ohms)

145

Channel Separation (at 1 kHz)

47 3/4 dB

wires. There is an unusually generous number of AC convenience outlets—three switched and one unswitched.

Construction of the A-910 is sturdy, with special emphasis on internal bracing to prevent vibration (as has been the case with every top-line integrated amp we've tested recently). Among the circuit refinements are direct coupling in the video amplifier and what NEC calls the Reserve II power supply, which the company credits with unusual ability to recover from instantaneous power drain.

Be that as it may, achievement of the design's primary goal—excellent headroom with low-impedance loads—is confirmed by Diversified Science Laboratories' measurements. Hefty as it is, the FTC rating (20 dBW, or 100 watts) seems somewhat wimpy by contrast to the 25.5 dBW (equivalent to 355 watts) the amp delivers into 2-ohm loads in the 20-millisecond-pulse test. The 8-ohm dynamic-headroom figure of +1.7 dB is

knob is rotated near its extremes. At 20 kHz, these settings yield +13 and -10 dB, respectively.

The phono curves are extremely flat except for the usual deep-bass rolloff—to -1 1/4 dB at 20 Hz for fixed-coil cartridges and to -1 1/4 dB for typical (low-



The A-910's infrared remote control

output) moving-coil models. The rolloff continues into the infrasonic region. Otherwise, there's no filtering of unwanted output from record warps, putting a premium on careful disc storage and on the mass/compliance match in your arm/pickup combination.

We've never met an NEC component we didn't admire for its solidity and quiet respectability of appearance. The company's line simply isn't glitzy. In audio, at least, NEC leaves the showier aspects of both cosmetics and circuitry to other manufacturers. We welcome the quality of the A-910 without the superficial razzmatazz that accompanies so many of its competitors. And these days, any component that gets the fundamentals right—as the A-910 does—is a very fine product indeed. □

merely good, but the +3 dB measured at 4 ohms is decidedly generous.

It's hard to tell just how generous, because few manufacturers publish 4-ohm power or headroom ratings. Even NEC's specs are slightly equivocal (and don't quite satisfy FTC rules) in failing to state distortion as part of the power rating. But, give or take a dB or two, the A-910 clearly is right up there with competing models in the power department.

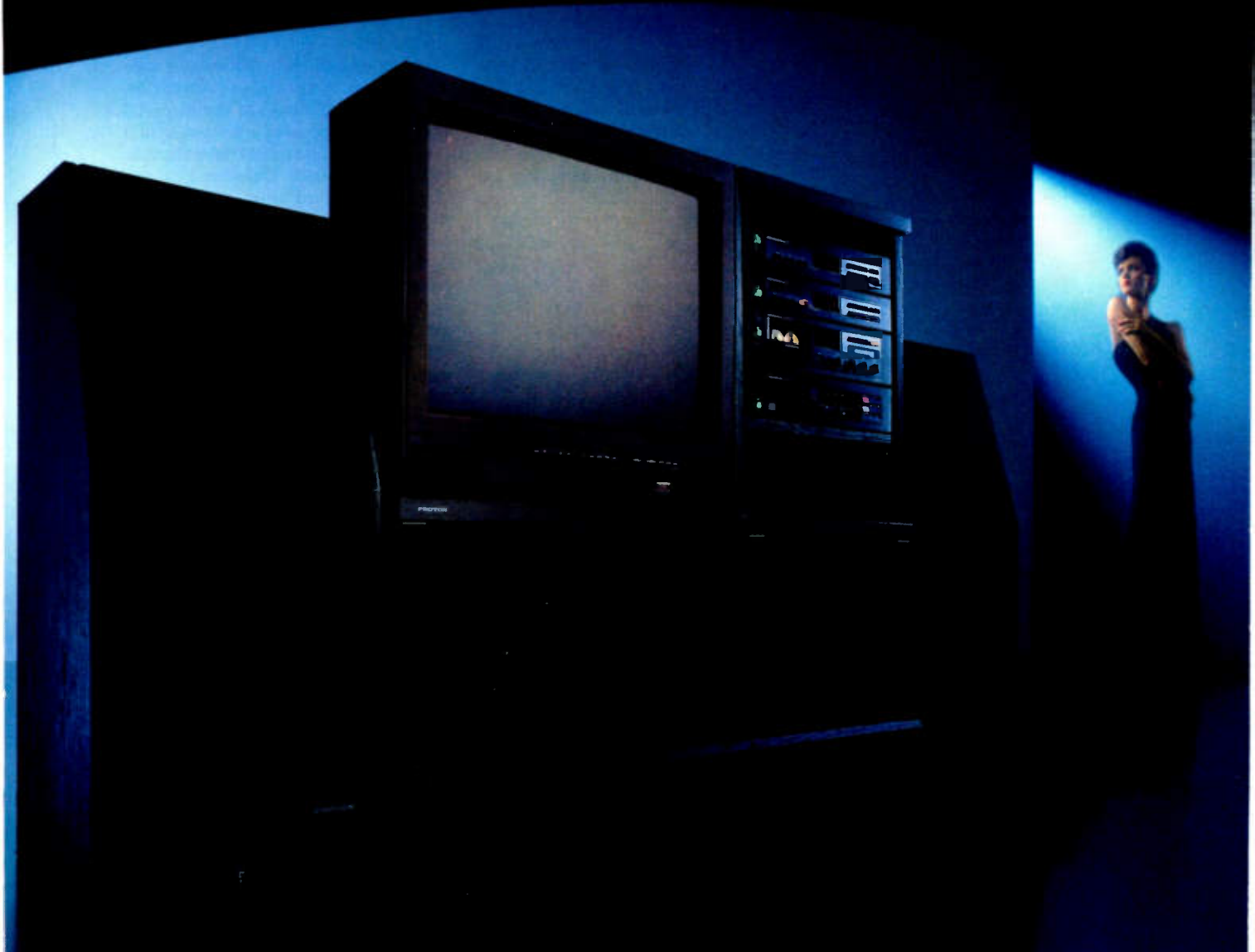
Distortion measurements are extremely low: below our 0.01-percent reporting threshold even in the measurements at rated power. At 47 1/2 dB, mid-range channel separation isn't spectacular—and it dwindles to 28 1/2 dB at 10 kHz—but it's still better than you need for solid stereo imaging. Input and output levels and impedances should pose no problems with typical systems.

The very well-behaved bass control yields relatively even increments between calibration points, curves that shelve below about 40 Hz, and practically no perturbation of the response curves above 1 kHz. Maximum adjustment range at 20 Hz is a fairly generous +15, -12 dB. Treble adjustment is less satisfactory, with some influence below 1 kHz but not much above that until the

REPORT POLICY

Equipment reports are based on laboratory measurements and controlled listening tests. Unless otherwise noted, test data are provided by Diversified Science Laboratories. The choice of equipment to be tested rests with the editors of High Fidelity. Samples normally are supplied on loan from the manufacturer. Manufacturers are not permitted to read reports in advance of publication, and no report or portion thereof may be reproduced for any purpose or in any form without written permission of the publisher. All reports should be construed as applying to the specific samples tested. High Fidelity and Diversified Science Laboratories assume no responsibility for product performance or quality.

When you've arrived. Proton.



Proton's AV27 audio-video system.



300 Series Remote-Controlled Components with Dynamic Power on Demand™ (top to bottom) AM-300 Stereo Amplifier, AT-300 Stereo Tuner, AD-300 Cassette Deck, 830R CD Player

Your audio-video system should be a reflection of your lifestyle. That's why you'll want the ultimate in picture, sound and design.

Introducing Proton's new AV27 audio-video system.

At the heart of the system is our superb, remote-controlled 300 Series audio components with exclusive Dynamic Power on Demand™ (DPD™). Since its introduction, DPD has received the highest acclaim. It does what no other technological innovation has for CD, other digital recordings, or hi-fi video listening pleasure. DPD boosts the amp's output up to four times its rated power, to let you hear even the highest musical peaks clearly, without distortion.

When you put the 300 Series together with our new matching speakers, you'll have a combination that sounds as extraordinary as it

looks. And, it's the perfect complement to Proton's stunning new 27" flat screen stereo monitor/receiver.

The Proton AV27 audio-video system. Once you own it, you'll know you've arrived.

The ultimate audio/video guide is yours free for the asking.

Proton's Ultimate System Guide for Audio/Videophiles tells you everything about the innovative technology and design that go into creating the renowned Proton line.

For your copy, which includes a list of the Proton retailers near you, call **(800) 772-0172**. In California, **(800) 428-1006**.

PROTON

CLEARLY THE BEST
737 W. Artesia Blvd., Compton, CA 90220

Ohm Sound Cylinder Loudspeaker



DAVID WAGNER

Dimensions: 31½ inches tall, 11½ inches diameter

Warranty: Limited, five years parts, one year labor, labor extended to five years for \$50.

Price: \$549 per pair in walnut-grain vinyl, optional coverings extra (see text)

Manufacturer: Ohm Acoustics Corp., 241 Taffe Pl., Brooklyn, N.Y. 11205

We were first shown Ohm's Sound Cylinders about a year ago, in a room filled with aluminum cylinders wrapped in wildly patterned fabric sleeves. It was a display fit for a wall-coverings convention. As one of the benefits of the speaker's shape, Ohm can, at additional cost, prepare for it a sleeve of your choice. As optional finishes, the company offers four wood veneers and a black cloth covering (to

higher and is said to use a slightly refined and more efficient CLS driver. Three Pro models, priced from \$750 to \$1,200 per pair in a standard black finish, are recent additions.

At 15 pounds each, the Sound Cylinders are easy to move about in your listening room. Because of their curved shape, the enclosures are formed of a thick cardboard material rather than the usual particle board. Unfortunately, our sample's standard vinyl covering was slightly askew, providing an added incentive to send for a custom wrap.

The cloth-covered, nonremovable perforated-metal grille cover that caps each Sound Cylinder conceals an unusual assembly. The cone-shaped CLS driver is mounted face down; just above it is a dynamic cone supertweeter that, according to Ohm, comes into full effect around 9 kHz. Frequencies above 500 Hz that radiate toward the back wall are said to be attenuated by Tufflex sound-blocking material (below 500 Hz, the wavelengths are too long to be affected). Essentially, the Sound Cylinders are designed to be omnidirectional in the bass and lower midrange and increasingly directional beyond that. For best imaging, the company recommends that the speakers be angled inward along the supertweeter's forward axis, using the Ohm logo as a guide.

Ohm's philosophy is to provide a three-dimensional soundstage with a smooth frequency response over a wide listening area. The radiation pattern of the CLS driver system (including the supertweeter) is likened by Ohm to a one-inch-diameter cylinder about six inches high. That is, the interference patterns created by the multiple-driver arrangement in a conventional box speaker are eliminated. Furthermore, Ohm says that because of the angle of the CLS driver's cone—and the "supersonic" material from which it is made—sounds radiating from the top of the cone are in perfect time alignment with those radiating from the bottom (and in perfect time and phase alignment with the supertweeter's output).

Amplifier connections for bared wire or banana plugs are underneath the cabinet, which sits slightly above the floor on a plastic base. There are spaces in the base for the speaker wires and for venting low frequencies emitted from a bottom port. Since our banana plugs did not fit, we had to use smaller pin-shaped connectors. Bared wire is your best bet for a secure connection, especially since you'll probably be moving the speakers around the room to find the best-sounding locations. The owner's manual en-

match the top) for \$76 a pair, but you can supply your own cloth fabric (cut to fit) for \$30 less.

Ohm now has five Sound Cylinder models, all using the Coherent Line Source (CLS) driver—the new name for the company's proprietary Walsh driver. We tested the smallest model, the SCS (Sound Cylinder Small), which we'll refer to as simply the Sound Cylinder. The Tall version (\$700 per pair) is five inches

courages experimenting with speaker placement, explaining that the nearer a corner, the stronger the bass output below 150 Hz.

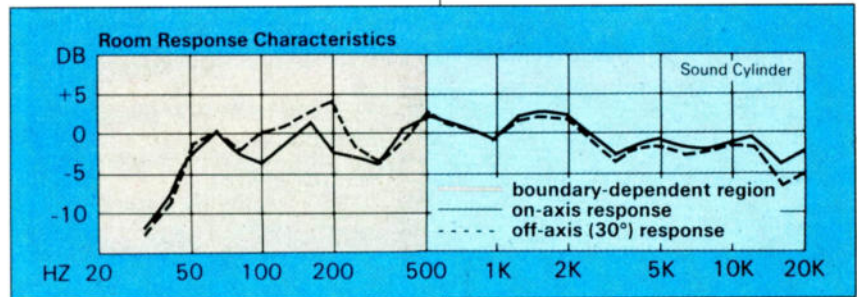
For its measurements, Diversified Science Laboratories placed the Sound Cylinders about three feet out from the back wall and well away from the side walls. The room-corrected response curves, although a bit bumpy, both lie within $\pm 3\frac{1}{2}$ dB through most of the speaker's range. Features of the on-axis curve—actually measured off the super-tweeter's axis, which was pointed inward—are dips between 80 and 125 Hz and between 200 and 320 Hz (the latter probably attributable to interference from a floor reflection); there was also a hump between 1 and 2 kHz. The off-axis curve departs in the upper bass region, most prominently at 200 Hz, where it lies more than 6 dB above the on-axis curve. DSL noted that the Sound Cylinders are quite sensitive to variations in room placement, which explains why we heard no such rise during our listening tests.

The protection circuitry built into the Sound Cylinders makes the results of our distortion measurements unreliable. Continuous high-level signals at the lowest test frequencies were severely compressed, resulting in exceedingly high distortion figures in that range. Not to worry: There was no evidence of distortion in listening to actual music signals, and the Ohms had no trouble taking the full output (equivalent to 613 watts, or 27.9 dBW) of the lab's test amplifier in our 300-Hz pulse power-handling test.

The impedance curve has a sharp peak of 26 ohms at bass resonance (just below 80 Hz) and a smooth crest throughout the midrange rising to 17 ohms. Although a minimum of 6.2 ohms occurs at 50 Hz, most amplifiers should be able to drive the Ohms safely in paral-

lel with another pair of speakers. Sensitivity is somewhat low for a speaker of this size, although Ohm says that any amplifier rated for at least 20 watts per channel is sufficient.

We listened to the Sound Cylinders placed in a variety of positions, encountering variations mostly in the degree of bass. Rock and various forms of jazz and big-band music brought out the best in the Ohms, which showed little signs of



harshness at loud levels. In classical selections, some of the highest-frequency "airiness" of stringed instruments seemed absent. We also found the imaging to be somewhat vague, which is not atypical of omnidirectional designs. Although the stereo image can be very wide, it lacks some of the detail and stability that we find particularly desirable for classical recordings. However, because of the nature of the company's design, the Sound Cylinders might very well image differently in your listening room.

At \$549 per pair, Ohm's smallest Sound Cylinders are a reasonable value for your dollar. That value goes up if you need a speaker that can perform well in a variety of room placements. And if your interior decorator falls to pieces at the mere mention of floorstanding loudspeakers, head straight for your Ohm dealer. □

Sensitivity (at 1 meter; 2.8-volt pink noise)	85 $\frac{3}{4}$ dB SPL
Average Impedance (250 Hz to 6 kHz)	12.5 ohms

For a car-stereo power amplifier, the Soundstream D-100 is a neat little package. On one side are gold-plated pin-jack inputs and a terminal strip for other connections. Above each input is a screwdriver-adjustable sensitivity control, and between these is a tiny pilot LED. Behind the whole array stretch the blue-anodized heat-sink fins that adorn the entire top surface. That's everything—aside from the clear white labeling that's silk-screened onto the nearest fin.

Hookup is pretty standard—and usually easy, thanks to the exceptionally well-written manual with its notes for

do-it-yourselfers. No wiring harnesses or leads are supplied, but custom fabrication isn't a major chore. (And, in any event, harnesses have to be customized to the car when they are supplied.) You'll need an extra-heavy (10-gauge, at least) power lead to the positive terminal of the car's battery and a similar one for grounding. Power switching is automatic when the amp receives a 12-volt feed from your head end, which doesn't need heavy wiring. If there is no power-amp (or even power-antenna) lead on your front end, you can run this connection on the D-100 off the ignition switch and simply leave the amp on. ►

Soundstream D-100 Car-Stereo Power Amplifier

Stock phono cables should suffice for the inputs (Soundstream recommends premium, gold-plated connectors), but you may need a DIN or some other plug adapter. If the source is the power-amp output of a cassette receiver rather than its line-level output, you can solder mating pin connectors to the stub leads (Soundstream's suggestion). You can

On continuous tones, the amp clipped at 0.5 dB above rated power, which is fairly typical of the car models we test. Most amps, however, have enough "slop" (as some engineers would call it) in the power supply to deliver short-term transients at a higher level without clipping them. But the D-100 clipped both waveforms at essentially the same level, so the dynamic headroom that we list is also the steady-state clipping headroom.

It would be wrong to conclude from the similarity of the listed distortion figures at the two test levels that overall distortion is relatively high. The detailed data from DSL (distilled in our listings to single worst-case figures for each level) make it plain that two different mechanisms are at work. At rated power, distortion is inaudibly low (around 0.05 percent) in the all-important midrange and midbass (down to at least 100 Hz). The distortion rises a bit at higher frequencies and slightly more so at the very low end (to 1.73 percent at 20 Hz).

At the reference level, distortion creeps up gradually through the bass and midrange, staying under 0.1 percent to above 1 kHz and under 0.5 percent to 10 kHz. This is more worrisome because it suggests crossover distortion, which tends to get worse as the level drops (and 0 dBW can sound fairly loud within the confines of a car). However, in our listening tests—made indoors, without any distortion-masking road noise—we considered the sound on par with other high-quality car amps we've tested. Distortion presumably is a nonissue.



DAVID WAGNER

- Dimensions:** 6¼ by 7½ inches (chassis base), 2½ inches high plus clearance for ventilation.
- Connections:** Pin-jack inputs; screw terminals for power, ground, switching, and speaker outputs.
- Fuses:** None supplied; 20-amp recommended in power line.
- Price:** \$295.
- Warranty:** "Limited," one year parts and labor.
- Manufacturer:** Soundstream Technologies, 2907 West 182nd St., Redondo Beach, Calif. 90278.

also cut the pin connectors off that end of your cables and then connect the hot wire and shield directly to the appropriate speaker leads.

If your front end's manual warns against connecting the output ground leads to each other or to the car's chassis ground, you cannot use that front-end output to drive the A-100, which has a common-ground input despite the separate and apparently insulated jacks. In general, we do not recommend running any high-quality amplifier, such as the D-100, from the speaker outputs of another amp—even if the sensitivity adjustment range of the former is great enough to let the latter's volume control operate normally. With a relatively high-power bridged amp ahead of a booster amp, you're likely to find that the volume can't be turned up very much without overloading the input of the booster, particularly if the booster hasn't been specifically designed for that purpose.

For its measurements, Diversified Science Laboratories set the sensitivity adjustments so that a 1-volt input delivered the rated output of 50 watts (17 dBW) into 4 ohms. As usual, the reference level is 1 watt (0 dBW) into 4 ohms, or 2 volts at the output terminals.



The inputs and outputs of the D-100

These days, you can find power amplifiers of 10 watts or more per channel built into many car receivers. You can also find separate car amplifiers powerful enough to prompt questions about the hearing (and sanity) of their owners. The important range in between receives relatively little attention, but that's precisely where the D-100 falls. We welcome it. □

Rated Power (4-ohm load)	17 dBW (50 watts)/channel
Output at Clipping (at 1 kHz; both channels driven)	
4-ohm load	17.5 dBW (56 watts)/channel
Dynamic Power (4-ohm load)	17.5 dBW
Dynamic Headroom (re rated power; 4-ohm load)	+0.5 dB
Harmonic Distortion (THD; 20 Hz to 20 kHz)	
at 17 dBW (50 watts)	≤ 1.73%
at 0 dBW (1 watt)	≤ 0.61%
Frequency Response	+0, -1/2 dB, 16 Hz to 20.5 kHz
	+0, -3 dB, < 10 Hz to 58.8 kHz
S/N Ratio (re 0 dBW; A-weighted)	71 dB
Sensitivity (re 0 dBW)	73 mV
Input Impedance	14k ohms
Damping Factor (at 50 Hz; re 4 ohms)	170
Channel Separation (at 1 kHz)	59 1/2 dB

CAR STEREO TUNES UP



CADILLAC VOYAGE CONCEPT CAR

The autosound industry is flourishing, spurred on by a growing list of customers and by manufacturers who are focusing extra energy on music-hungry travelers. Last January, Las Vegas threw open its doors to host the Consumer Electronics Show, at which the overwhelming majority of this summer's new car audio products were previewed. We came away more convinced than ever that innovations are as likely to occur in car audio as in home audio. Jay C. Taylor has taken stock of the latest CES and filed the following report on some of the most significant new products and trends in autosound.

Regarding DAT, the news is good as we go to press: CBS's Copy Code process has been soundly thrashed on all points by the National Bureau of Standards, ostensibly clearing the way for home DAT recorders. But the promise of more actions by the recording industry—including lawsuits against any manufacturer that offers a DAT recorder here—will serve to further delay the introduction of the home decks. Play-only car DAT decks, however, are not being challenged: In mid-February, Clarion became the first company to officially sell a car DAT player in the U.S. Kenwood followed suit about a week later.—Ed.

Ready or not, here comes mobile DAT. In the March "Currents," you may have read about Ford's plan to offer a DAT player with the Ford/JBL system in its new Lin-

coln Continental. As mentioned above, in-dash digital audio tape players from at least Kenwood and Clarion are already being sold at a very limited number of autosound retailers. Since neither has the capacity to record, the tuner-equipped Kenwood KDT-99R (\$2,000) and tunerless Clarion Audia DAC-2000 (\$1,750) effectively sidestep the Copy Code legal quagmire but still face nagging questions about sufficient software availability. Other manufacturers whose DAT units appear ready for production include JVC, Sanyo, Sony, Technics, and Alpine. Will they deliver, and, more important, is this product worth \$1,500? I'll let you be the judge. A slightly less expensive alternative is Casio's DA-1 portable DAT recorder (\$1,099), scheduled for delivery by summer. The diminutive DA-1 should be right at home plugged into the CD/aux input of your car receiver, but you might have to consider a separate insurance rider or one of the new steel safes designed to secure valuables in the car.

DIGITAL ON PARADE

Sony officially unveiled the CDX-A20 car CD changer (\$750)—the first such unit with two-times oversampling—in a package 40 percent smaller than its predecessor, the CDX-A10. Unlike the original, the CDX-A20's removable stalk-mounted remote commander (the RM-X2, \$230) is just one of the controller options. Others in

By Jay C. Taylor

CAR STEREO TUNES UP



Available at last: Audio DAC-2000 DAT player from Clarion



Blaupunkt Chicago CD/tuner uses cartridge, is extractable.

clude the XR-7200 (\$650) and XR-7300 (\$700) removable autoreverse cassette/radios, which connect to the changer via a 13-pin DIN plug to control CD operation. (A review of the CDX-A20 appeared in last month's "Autophile.")

Pioneer's new CD changer (see this issue's "Autophile") made a very flashy public debut in a \$250,000 Porsche Cabriolet designed by Gemballa. The shiny white dream-mobile will be touring the country, stopping at selected Pioneer retailers to showcase the company's latest technology. No word yet on whether rich and famous Robin Leach will join the tour.

Clarion teased us with a prototype 12-disc changer operated by a stalk-mounted controller with a built-in equalizer. To simplify integration with an existing cassette-based system, the controller is designed to connect to the preamp outputs of any head unit. We should see the new Clarion by late summer.

On the conventional-player front, the Clarion Audia 5000 (\$830) and the Blaupunkt Chicago (\$800) are equipped with tuners and use the cartridge loading system. The Clarion boasts two-times oversampling; the Blaupunkt can be installed with an optional removable mounting for theft prevention. In that vein, Denon has a second-generation extractable CD/tuner, the DCC-8920 (\$900), with refinements that include improved tracking, a front-panel auxiliary input (for a portable tape

player), and two-times oversampling. Denon's entire line of tape and CD head units share two very practical features: All are removable designs, and all can have their illumination color changed (at additional cost) from the standard red to one of five other colors in order to match virtually any dashboard decor.

Not to be outdone, theft-prevention originator Kenwood has two new removable CD players, the KDC-90R (\$999) and the KDC-80 (\$749), the former complete with tuner and a matching 25-watt-per-channel amplifier in a separate chassis. Interestingly, the transports in both can be adjusted to accommodate a 30-degree installation angle (presumably for underdash mounting), while a battery backup remembers where the CD left off when the unit was removed. If you already own Kenwood's KRC-757 or KRC-858 removable cassette/receivers (the latter reviewed in this issue), you'll be pleased to know that an optional accessory enables

the KDC-80 CD player to be interchanged with either.

The least expensive (by far) car CD player I've ever seen is Crown's CCD-5500. Made in Japan (not Korea, as the price suggests), it's programmable for 16 selections and should sell for "well under" \$300 when it reaches stores in July. The unit must be connected to its own modestly rated power amp (housed in a separate minichassis), although you could later add a more powerful amp, booster-style.

MORE TAKEAWAYS

Probably the best innovation in removables since the concept was introduced can be seen in Technics's new Flex-Power cassette/receivers, which enable you to choose your amplification *and* leave it behind in the mounting sleeve. Two new models, the CQ-H9320 (\$420) and the CQ-H9310 (\$390), can be mated with one of three quick-release brackets. The first, the CY-AM01 (\$100), has no internal power but provides two sets of preamp outputs for adding outboard amplifiers. Next is the CY-AM50 (\$120), with a built-in 25-watt-per-channel amp (switchable for 8 watts into four channels) plus a set of preamp outputs. Finally, the CY-AM100 (\$120) has a four-way 25-watt amp and no preamp outputs. As good as this arrangement sounds, the best news is that since the amps are part of their brackets, the head units themselves are considerably lighter and smaller than competing models. You might even be able to fit one into your glove box and still have room for your gloves.

Harman Kardon breaks ground with its first removables, the CR-131 (\$469) and the CR-151 (\$599), which are also the company's first autoreverse models. Both feature Dolby B, built-in high-power amplifiers, and automatic azimuth adjust-



Kenwood's removable KDC-90R CD/tuner has matching amp.

CAR STEREO TUNES UP



Technics CD-H9320: removable choice of three trim/brackets



Sexy pullout: Harman Kardon CR-151 cassette/receiver

ment to optimize tape frequency response. The CR-151 adds Dolby C, a preamp in/out loop for a CD player or an external processor, and full-logic transport controls. But what really caught my eye was their clean, uncluttered look—the most refreshing cosmetics since Soundstream got into the act.

Another fresh face in removables is Hitachi's CSK-551A (\$1,000), the first in its class to look like it doesn't belong, thanks to a handle cleverly integrated into the bezel. In addition to its good looks, the CSK-551A has HASP, or Hitachi Automotive Sonic-field Processor. This is a cross between preset equalization curves (called pop, synthesizer, rock, and "flat") for various music types and presets for different car shapes (coupe, sedan, or wagon). Sonic-field Scan samples the 12 possible combinations for ten seconds each just in case you can't remember what kind of car you drive or the music you're listening to (or in case a different setting sounds better).

BREAD AND BUTTER

Some traditional high-end specialists—Denon, Yamaha, Soundstream, and Nakamichi—are offering new head units at popular prices. Denon's entry-level model, the DCR-5220 (\$330), features autoreverse, Dolby B, a removable chassis, and five optional illumination colors. Yamaha has two new shafted units "that blend European and American styling." I'm not sure that's how I'd describe them, but the

results are quite pleasing to the eye. (Actually, what comes to mind is a finely crafted black faceplate with chrome trim and a strip of wood veneer.) The Yamaha YCR-220 (\$259) leads off the line, but the real winner is sure to be the YCR-420, with Dolby B, autoreverse, music search, and a four-way, 20-watts-per-side amp, all for \$329.

Another snappy looker in a standard chassis is Soundstream's TC-301 (\$299), which retains the company's familiar cosmetics and excellent specifications and contains a built-in high-power amp. A new DIN model, the TC-303 (\$399), adds Dolby C and can be fitted with an optional (\$20) pull-out handle.

Nakamichi plunges into the mainstream of car audio with its first amplified head units, the RD-450 (\$495) and the RD-350 (\$375), both featuring autoreverse and automatic azimuth adjustment. And Proton has introduced a new Schotz II tuner in its high-power CR-360

cassette/receiver (\$289). The tuner, which boasts a 3-dB improvement in sensitivity over its predecessor, is to be incorporated into all of Proton's existing and future models.

ONE SIZE FITS ALL

Manufacturers are continuing their efforts to provide head units with flexible mounting applications. Pioneer introduced its new Auto America series, designed to accommodate DIN openings in the dashboards of European cars, ISO dash openings in Japanese cars (same chassis size, slightly smaller opening), and the shallow cavity in many American cars. Initially consisting of the KE-4010 (\$300) and the KE-4060 (\$340)—with or without the optional \$20 Quick Release bracket, which adds "QR" to the model number—the line relies on a shorter chassis to mount flush with the dash of American cars. A custom-installation kit provides a seamless fit for that "factory" look. Thanks to a removable trim ring, the Pioneers are equally at home in traditional DIN and behind-the-dash ISO installations. In a similar fashion, Blaupunkt's new Uni-Fit installation scheme handles both DIN and ISO openings, and the appropriate models can also be converted to Quick-Out status to foil thieves.

POWERFUL LINEUPS

If you were looking for new amps, Las Vegas was the place to be (among other, less prudent, reasons). Clarion, Kenwood, Infinity, and MTX (a Mopar brand) all had completely new lines of amplifiers, and a host of other companies augmented existing lines. Clarion's six new models range from 40 to 100 watts in total power. Kenwood unleashed its new flagship model, the KAG-1020 (\$1,099), offering technology hitherto reserved for its home audio



Denon's extractable DCR-5220 has five illumination options.

CAR STEREO TUNES UP



Yamaha's shined YCR-420: Afro-American styling?



A budget beauty from Soundstream, the TC-301

equipment. For instance, Voltage Interface Gate circuitry grounds all non-input-signal information before it reaches the amplifier stage, improving operating efficiency and minimizing noise. Kenwood's Direct Linear Drive incorporates dual power supplies—one said to be for low power, the other for high—to minimize distortion at all levels. The 1020 weighs in at 200 watts per channel (or 400 watts strapped for mono) and features a built-in subwoofer crossover (at 50 or 100 Hz) with a slope of 18 dB per octave. Two models that also include a subwoofer crossover and much of the same technology are the new KAC-920 (\$549), rated at 95 watts per channel, and the 75-watt KAC-820 (\$429). Rounding out the line are the KAC-720 (\$299) and the KAC-520 (\$129), delivering 35 and 20 watts per side, respectively.

Yearning for some color in your life? Then try one of MTX's new Blue Thunder amps. A recent development of parent corporation Mitek's new r&d center, three sky-blue models put style into your system (although that style will more than likely be confined to the trunk). The 200-watt-total BTA-2100 (\$440) and 100-watt BTA-250 (\$300) are bridgeable two-channel designs featuring internal equalization that adds 15 dB at 45 Hz and 6 dB at 10 kHz. A third model, the BTA-435 (price not yet available), delivers 35 watts into each of four channels and looks great all the while. And you thought car audio was

strictly basic black...

Infinity ups its ante in mobile electronics with three new bridgeable stereo amps and a versatile multiway model. Heading the former group is the \$649 RSA-450, putting out a total of 450 watts; the RSA-250 (\$499) and RSA-120 (\$349) produce totals of 250 and 120 watts, respectively. "System flexibility" best describes the multichannel RSA-4.40 (\$399), which offers 40 watts into four channels, 80 into two, or half of that plus a third mono output at 80 watts. Other three-mode amps are the Technics CY-M400 (\$720), with 400 watts total, and the Sherwood SCP-1002 (\$350) and SCP-802 (\$250), rated at 200 and 100 watts total, respectively.

From my perspective, the most interesting new amplifier design is Linear Power's 1752S (\$1,000), the "S" denoting Servo-Subwoofer System—in this case, four 8-inch dual-voice-coil subwoofers driven by a 175-watt amplifier. Why dual voice coils? One voice coil operates off the amp's

speaker output; the other provides a complementary signal back to the amp, which compares it to the source input from the head unit. Using this feedback information, the amp electronically adjusts for variations in response, primarily those resulting from the physical volume of the surrounding enclosure. Thus, both a very small sealed box and an open trunk should yield tight, controlled bass, with almost no possibility of driving the amp into clipping. Linear Power targets the servo system at audiophiles who are as concerned about the *quality* of the bass as its quantity. The 1752 amp is available without the servo circuitry and subwoofers for \$500.

EQs

A standout in the signal-processing category is Concord's CEQ-7+ (\$300), which fulfills four distinct needs in any high-end system. Its most obvious function is that of an electronic seven-band graphic equalizer with four user presets. Not so obvious is the single-band parametric equalizer for bass and lower midrange frequencies. It has continuously variable settings for center frequency (50 through 400 Hz), bandwidth (1/3 through 1 octave), and level (± 12 dB). A spectrum-analyzer display enables you to check the results of your equalization with a microphone. A subwoofer crossover (at 80 or 240 Hz) makes low-frequency additions to the system a snap. Throw in a CD input, and you have one of the most functional half-DIN products ever to grace a dashboard.

Blaupunkt has two new electronic EQs with bands that can be adjusted on a touch-sensitive LCD. The BEQ-08E (\$340) is a nine-band passive design with separate adjustments and four programmable presets for both front and back channels; the larger BEA-108E (\$300) has seven bands and a built-in four-way amp



Pioneer's KE-4060 should fit any size dash-opening.

CAR STEREO TUNES UP



Blaupunkt BEA-108E combination EQ and four-channel amp

Both include an 80-Hz subwoofer output. Sherwood introduced its first passive EQ, the SEQ-200 (\$200), an electronic seven-band model with three programmable presets (very trendy) plus factory-set curves for "pop" and "rock" music. It also includes a subwoofer output (at 80 or 150 Hz) and a surround-sound mode. Alphasonik's PEQ-7B (\$110) replaces the popular seven-band passive PEQ-7A as a half-DIN version at a modest price. Other new EQs include a total of seven passive and amplified models from Clarion; one of them, the 100EQB-6 (\$100), is the sixth-generation heir to the 100EQB, the industry's first (circa 1977) EQ/booster.

EVER BETTER SPEAKERS

The most impressive demonstration of component speakers was that for Infinity's Reference Standard Designer Series. Comprising nine drivers, each based on the same technology found in the company's home loudspeakers, the line features four woofers—one 8-inch, one 10-inch, and two 12-inch units. All have cast-aluminum frames and injection-molded graphite/polypropylene cones for rigidity with low weight. Prices range from \$135 to \$300 apiece, while power handling runs from 150 to 300 watts. The midbass and midrange dome drivers in the series are firsts in autosound, marking a radical departure from any other speaker available for those applications. Rounding out the Designer Series are a midrange cone driver and two tweeters, one of which is the EMIT-k found previously in the CS-1k package. The start of the aforementioned demo delivered a visceral punch that actually scared me, even though I had been anticipating the beginning of the music.

Pioneer jumps into the big-buck woofers with its own 16-inch cast-aluminum titan, the TSW-400 (\$300), which can handle a Herculean 500 watts. If you don't have the cash or watts to tame it, try

the TSW-300 (\$160), a 12-incher that can consume a mere 300 watts. Two smaller woofers are also available. Complementing the low notes are a new Pioneer midrange driver, a cone tweeter, and a dome supertweeter, all listing for about \$100 per pair. Kenwood is also getting into component speakers with a vengeance, introducing three woofers led by the 10-inch KFC-W110 (\$299) and two midrange drivers and a tweeter, all priced around \$130 per pair.

Other new speakers of note: two new plate-mounts from Kenwood (both less than \$300 per pair) and another from Infinity for \$400. New box speakers from Ultimate Sound and Magnadyne are specifically designed to fit behind the seat of a Suzuki Samurai. And ADS's 400i (\$420), previously limited to in-wall home installations, is now available through auto-sound dealers, as is the S6.2 (\$150), a dual 6½-inch plate-mounted subwoofer. A new American company, Audiophile, dis-

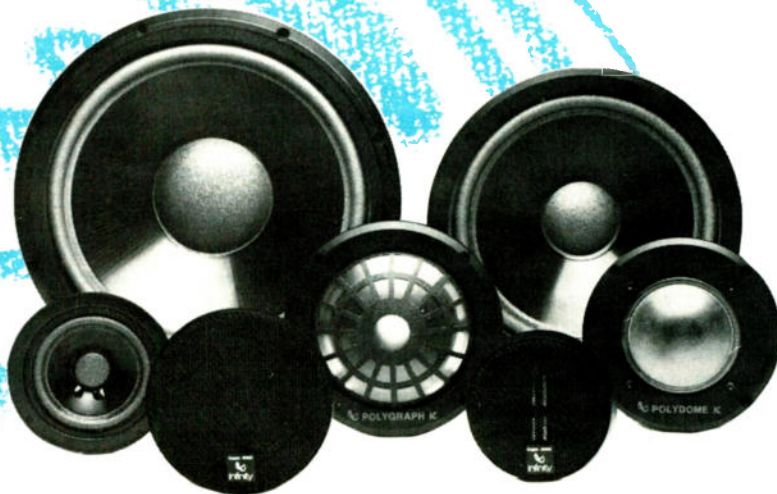
played a fine-sounding component system consisting of dome tweeters and polypropylene cone midrange/woofers (\$349 together) and one 8-inch polypropylene subwoofer (\$199). My personal favorite: the new full-range, metal-cone 10-inch driver from Babb (Model 1034, \$160 each), which sounded surprisingly good and has the advantage of containing no crossover.

SPECIALTY ITEMS

Clarion gave us an extra-early look at its video products, which include an 8mm VCR and a backup camera system for vans and other large vehicles. These products and a TV monitor with diversity tuning (said to sharply reduce snow and ghosts) are scheduled to become available in the late summer.

Blaupunkt's replacement steering wheel (\$995 plus installation), a joint offering with the Swiss customizer Rinspeed, speaks strongly for Blaupunkt's vision of the future. The center of the wheel contains 24 buttons, the functions of which can be tailored to control a number of Blaupunkt head units or its cellular telephone.

Speaking of the future, Mitsubishi would like you to trade in your "Baby on Board" sign for one that reads "Fax on Board." The company has developed an in-dash Fax for the executive on the go—or, more likely, on the stop. □



Impressive: Infinity's Reference Standard Designer Series

Golden Rulers

The recent introduction of "18-bit" Compact Disc players has focused attention on the digital-to-analog conversion process that is central to all digital audio playback media. In articles and especially in manufacturers' promotional literature and ads, much of the discussion has centered on digital-to-analog converter (DAC) circuits and their associated digital or analog low-pass filters. This article is an introduction to the principles and terms relating to digital-to-analog conversion. It is meant to help you cope with the improper and inaccurate jargon often found in audio manufacturers' data sheets. (Output filtering, which is a separate technical issue from DACs, will be covered in a future article.) A simple ruler analogy will be used throughout, and important terms will be in **boldface**.

A PRECISE YARDSTICK

Digital playback consists primarily of the conversion—at very regularly and closely spaced intervals—of numbers into voltages. This conversion is performed by a DAC, which is usually a single integrated-circuit chip. (Often, a CD player has two DACs on one chip or uses a single DAC to convert the data for both stereo channels.) You can think of the DAC as reconstructing a waveform using both numerical data (obtained from a CD, for example) and a special type of ruler by which the DAC measures out its output voltage (the middle portion of such a ruler is shown in Fig. 1). What makes this ruler special is that it is "quantized": It has gradations just at certain locations, and *only* those markings are used to measure out the waveform. This is shown by the stepped waveform of Fig. 1, a quantized version of the original, smooth analog waveform.

On a DAC ruler, the distance from one marking to the next—called a **least significant bit (LSB)**—represents the smallest interval the system can discern or resolve. A DAC's precision, or **resolution**, is determined by the number of gradations or markings its ruler carries. In a standard 16-bit CD player, the DACs have rulers with 2^{16} (or 65,536) markings on them, while the discs can contain numbers corresponding to each ruler marking.

Some recent CD players have 18-bit DACs. These chips have

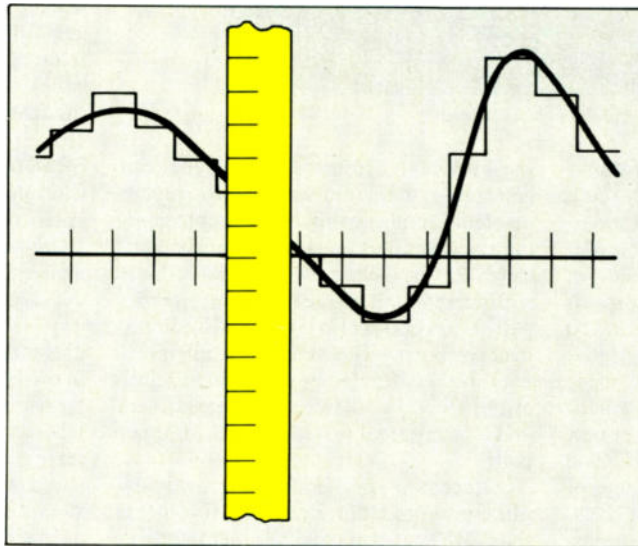


Fig. 1: A DAC's internal "quantized ruler" measures out the converted audio waveform (stepped curve). Only the markings on the ruler are used.

internal rulers with 2^{18} (or 262,144) markings in the same space that 16-bit DACs have their 65,536; each additional bit of resolution doubles the number of ruler markings without changing the length of the ruler. Figure 2 shows a DAC ruler having twice the resolution of that in Fig. 1. The stepped waveform shows how such a DAC reproduces the original analog waveform when fed with correspondingly more precise data. If it were being fed the same data as in Fig. 1, the stepped waveform would be *identical* to that in Fig. 1.

From this, you can see that simply using an 18-bit DAC does not guarantee improved CD-player resolution, although it can improve other aspects of player performance. In Figs. 1 and 2, the stepped nature of the waveform can be removed by low-pass filtering. Indeed, the primary purpose of CD-player output low-pass filters (whether analog or digital) is to smooth a stepped or pulsed DAC output.

Strictly speaking, a DAC's resolution is merely a descriptive label for its theoretical behavior, *not* a measure of its performance. For example, a military order form would call for "one digital-to-analog converter integrated circuit, 16-bit type." Converters typically come in several grades, the better ones costing considerably more than lesser chips. It is possible to have a poor 18-bit converter that is outperformed by an excellent 16-bit device. What truly differentiates the various grades of DACs are their deviations from ideal performance—in other words, their accuracy.

ALL THINGS TO ALL PEOPLE

Accuracy is a catchall term that sums up a DAC's deviations from the production of ideally spaced output-voltage levels, each correctly corresponding to an input number. By analogy, accuracy is a measure of the correctness and spacing of the markings on the DAC ruler.

There are several important aspects to accuracy. But while some of these may be important for many DAC applications, they are almost irrelevant for audio purposes. For example, **offset error** is a measure of how far the ruler's markings are offset from the voltages they are to produce. If a DAC that is fed the number zero

A primer on the specifications and performance of digital-to-analog converters

BY DAVID RANADA

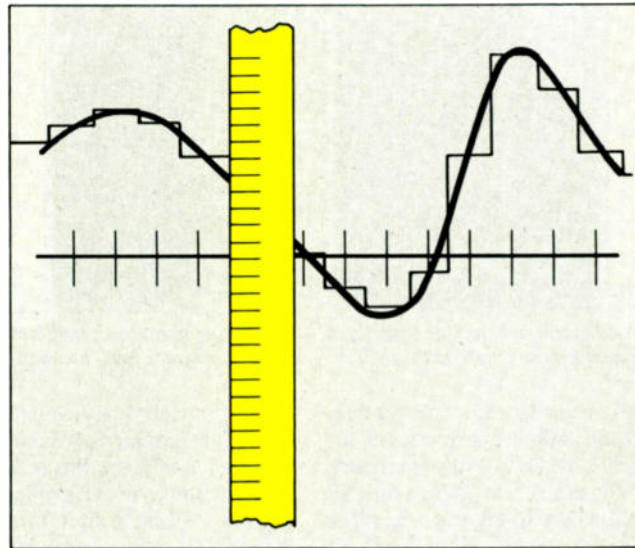


Fig. 2: Each doubling of the number of markings on a DAC ruler is equivalent to a one-bit increase of its resolution.

is supposed to create an output voltage of zero volts—and yet actually generates one-tenth volt with all the other DAC output levels shifted by precisely the same amount—there will be an offset error of one-tenth volt. In audio terms, this translates to a DC offset to the DAC output, a characteristic that is inaudible per se. An offset could conceivably create problems with DC-coupled power-amplifier circuits, but offset errors are usually so small as to be insignificant. Gain error, another audibly unimportant spec, is the difference between the ideal and actual output-voltage range for a DAC. Since even a simple volume or balance control can change any audio component's output-voltage range, a DAC's gain error is irrelevant to audio performance.

However, another aspect of accuracy—linearity—is extremely important for audio. In the ruler analogy, linearity is a measure of the closeness of each marking on the DAC ruler (on the left in Fig. 3) to its ideal, mathematically defined position (right) once gain and offset errors have been accounted for. Likewise, nonlinearity indicates the maximum deviation from perfect ruler-marking placement.

There are two types of nonlinearity—differential and integral—but these specs are rarely encountered except on DAC data sheets obtained from microchip manufacturers. Seen with the ruler analogy, differential nonlinearity specifically gauges the closeness to the ideal placement of the ruler gradations, while integral nonlinearity is a measure of any stretching or compression of the ruler stick along its length.

Either type of DAC nonlinearity results in audio distortion, so the less nonlinearity the better. Nonlinearity can be specified in LSBs, with $\pm 1/2$ LSB or less being desirable for 16-bit audio applications. The DAC ruler on the left in Fig. 3 falls into this high-quality category except for Level 16 (indicated by the arrow), which is more than $1/2$ LSB from its appointed location. A DAC's linearity is a property of the individual integrated circuit and cannot be reduced by trimming techniques (as can gain and offset errors) after the chip is manufactured.

For audio applications, perhaps the single most important aspect of DAC performance is a subcategory of linearity called

monotonicity. This term simply means that as the numbers that are fed to the DAC increase, the output voltage either rises or, at the very worst, stays the same. Simple as it sounds, monotonicity is not easily achieved, and if it isn't, you'll end up with a DAC acting like the ruler on the left in Fig. 4. Here, as input on the right increases by an LSB (from 15 to 16), the output on the left actually falls, with the level generated at 16 below that at 15. When converted back into an analog signal by such nonmonotonic DAC, an audio

waveform that had originally passed smoothly from Levels 14 to 17 would receive an unwanted jog as it hit Level 16.

This effect is similar to the crossover distortion once a bugaboo of amplifier designs, but it differs from the amplifier problem in one respect: With a DAC, nonmonotonicity can occur not only at the "zero crossing" (where the signal switches from negative to positive polarity), but at many other places along the DAC ruler as well, according to the internal construction of the DAC. A nonmonotonic DAC can produce relatively high harmonic distortion, depending on the degree of the nonmonotonicity, its location(s) along the DAC ruler, and the signal being converted. A DAC is guaranteed to be monotonic if its nonlinearity is $\pm 1/2$ LSB or less, hence the importance of this linearity spec for audio uses.

From this discussion of linearity, you can get a feel for how it is possible for a CD player's 16-bit DACs to have only 14 or 15 bits of accuracy (as many do). This is because the converters' nonlinearity exceeds the desirable $\pm 1/2$ -LSB criterion. Some of the gradations on the DAC rulers are so off the mark that numbers fed to such a converter come out as "wrong" as if they had been fed to an accurate converter having much less resolution.

BE IT RESOLVED?

The DAC performance criteria we have discussed (monotonicity, linearity, and accuracy) have been generally ignored in the recent hullabaloo over 18-bit and "quasi-18-bit" improved-resolution converter systems. Manufacturers have instead launched themselves on another round of specsmanship, with the numbers to watch being DAC resolution and digital output-filter oversampling rates. ▶

Golden Rulers

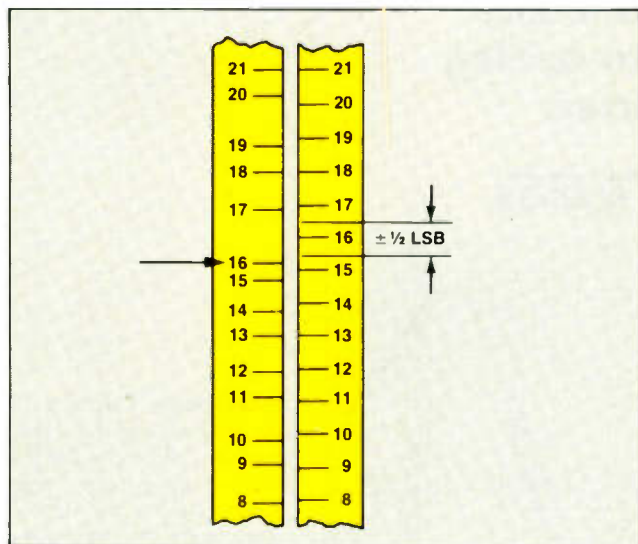


Fig. 3: A nonlinear DAC ruler (left) has inaccurately placed gradations. Level 16 exceeds the desirable limit for nonlinearity shown on the right.

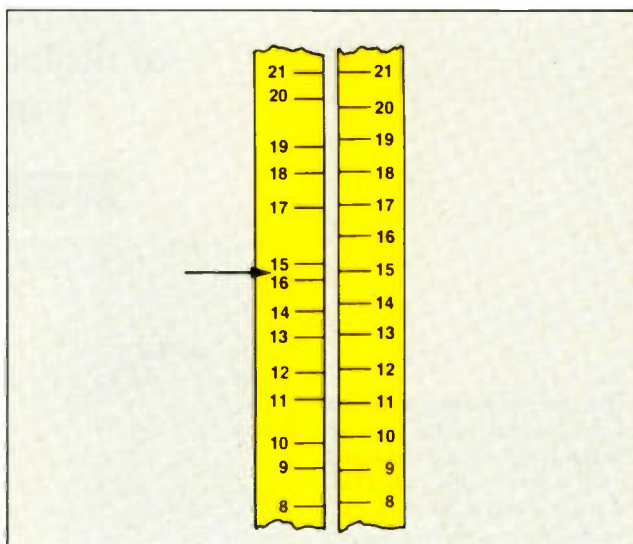


Fig. 4: A nonmonotonic DAC's output goes down when it should go up. The DAC ruler on the left is nonmonotonic at Level 16.

This discussion of linearity and accuracy can generate only one firm a priori conclusion about the audio performance of 18-bit DACs: Given one 16- and one 18-bit DAC with equivalent nonlinearity specs (say, $\pm \frac{1}{2}$ LSB for each), the 18-bit unit will produce less measurable distortion than the 16-bit unit even when only its top 16 bits are used. This is because the LSB of the 18-bit unit is four times smaller than a 16-bit LSB and its nonlinearity is correspondingly smaller for the same input data. Whether you'll be able to hear this reduction in distortion is yet another question, because it is possible that most normal 16-bit CD players already produce inaudible levels of distortion, despite their use of measurably nonlinear and nonmonotonic DACs. So, if I had to choose between two CD players with identical complements of features—one with an 18-bit DAC and another using the "old-fashioned" 16-bit variety that measures well in lab tests—I'd simply choose the less expensive model.

In most cases, the less expensive unit would be the 16-bit, since 18-bit DACs are still comparatively expensive. Although a move from 16 to 18 bits requires an increase of only about one eighth in integrated circuit complexity, the resulting 18-bit chip must perform at least four times as well as its 16-bit predecessor in order to be worthy of the name. This makes the 18-bit DACs more difficult to manufacture and more costly than 16-bit models.

There are reasonable and, at least for now, less expensive alternatives to obtaining some of the lower-distortion benefits of 18-bit DACs without actually using them. Before 18-bit

DACs became widely available, for example, Yamaha introduced its Hi-Bit technology (which earned the company's CDX-1100U CD player a HIGH FIDELITY Product of the Year Award last year). Technics uses a similar system in some of its high-end CD players. Although literature from other manufacturers makes light of the Hi-Bit system, it is a clever bit of engineering.

The ruler analogy is very helpful in explaining Hi-Bit. When the signal level falls below certain threshold levels, the Hi-Bit conversion system in effect shrinks the size of the DAC ruler by precise factors of two or four while multiplying the numbers to be converted by the same factors (Fig. 5). This results in an apparent increase in DAC-system resolution by two or four (the ruler markings are closer together). Resolution increases from the 16-bit level to 17 or 18 bits as the signal falls in level. More important than the increase in resolution, though, is the concomitant proportional shrinkage in DAC nonlinearity by factors of two or four. This produces the same lowering of distortion for lower level signals that a move to true 18-bit conversion would have provided.

All in all, then, both true- and quasi-18-bit systems can offer improved measured performance, not necessarily because they have higher resolution but because nonlinearity is reduced. An "18-bit" CD player cannot provide true 18-bit performance—the data on a CD is limited to 16 bits of resolution by the interrelated electronic, mechanical, and optical specifications of the CD standard. But an 18-bit machine can provide more accurate 16-bit performance. □

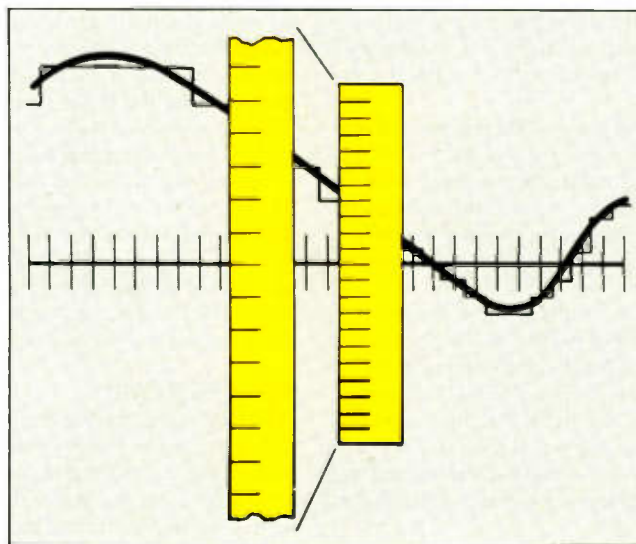


Fig. 5: Yamaha's Hi-Bit system effectively halves or quarters the length of the DAC ruler, thereby decreasing nonlinearity for low-level signals (right).



Edited by Ted Libbey
and Ken Richardson

He's the Real Thing

Robert Shaw, music director of the Atlanta Symphony Orchestra since 1967, is about to pass the torch to his successor, the young Rumanian-born conductor Yoel Levi. But before he does, Shaw is going to make sure it's burning brightly. Following a pair of concerts in New York City—an all-Brahms program at Carnegie Hall on May 25 and a Stravinsky/Beethoven double bill at Avery Fisher Hall the following night—Shaw will take his orchestra and its praiseworthy chorus on a whirlwind tour of Europe. First stop is East Berlin; the next five evenings will see performances in Zurich, Ludwigsburg, Paris, Bristol, and London.

Shaw is, without too much doubt, the most gifted choral conductor the world has ever known. A genius, a magician, and above all a deeply sensitive and intelligent musician, he has long been an idol to those who sing in choruses and a setter of standards for those who listen to them. He has now proved himself as an orchestra leader as well. When he came to Atlanta, his goal was to build a first-class orchestra, and surely no one who has heard the Atlanta Symphony play for him could say he has failed. During his tenure, it has emerged as a major American ensemble, with an enviable string of recordings to its credit and a reputation that is about to become international. Now, at age seventy-two, Shaw feels he has taken the orchestra as far as he can in the direction he set for it, and he's eager to give it a chance to grow in other ways.

But Atlanta is too smart to let him go. With broad-based support from the city's business and cultural community, Emory University has created the Robert Shaw Institute, which he will head. The institute will start out offering intensive seminars in specific subjects that cut across disciplinary lines, drawing talented outsiders into Atlanta's cultural life. Its approach will be humanistic; as Shaw says, "The arts are too important to leave to the professionals." As it grows into its conservatory function, the institute will begin by awarding a master's degree in sacred music, with three possible specialties.

In accepting the appointment, Shaw versified his misgivings thus: "It's tough enough for one's morale to bear a surname like 'Chorale,' but proof he's deaf and blind and mute to have it changed to 'Institute.'" Clearly, he's not off the hook yet. Atlanta has figured, correctly, that if he can build one musical institution there, he can build another. Shaw will continue to live in Atlanta and will serve as the orchestra's conductor laureate. No doubt the good to be gained from having him around will far outweigh the potentially intimidating effects of his presence.

Shaw himself seems unperturbed. "I've given 21 years to the orchestra, and I plan on another 20 devoted to the institute. After that, who knows?"

Ted Libbey

Jazz: Cradles Will Fall

The fact that Kansas City and St. Louis produced seminal jazz in the early 20th century allows the notion that the two Missouri cities remain jazz centers today. Nothing could be further from the truth. It's not that players aren't plentiful; rather, neither city offers talented locals or touring performers a steady outlet. What's more, with rare exception the two cities' public refuses to support "their" music when it is available. Even Kansas Citians admit that jazz in Cowtown does not thrive unless the event is free.

That city was once filled with territory bands led by the likes of Jay McShann, Jimmie Lunceford, and Count Basie and featuring such soloists as Coleman Hawkins, Lester Young, Mary Lou Williams, and Charlie Parker. Today, Kansas City cannot boast one full-time jazz venue. St. Louis, once synonymous with W. C. Handy, Jimmy Forrest, Clark Terry, Oliver Nelson, and Miles Davis, is in even worse shape.

In the 1970s, Kansas City did see the birth of the Women's Jazz Festival and a city-funded jazz commission. However, the festival disbanded after seven years, and the commission, it turns out, is nothing more than a politicized paper tiger. St. Louis's jazz died in a 1959 tornado that ravaged Gaslight Square, once a haven for nightlife. Shortly after, exceptional mainstays like Lester and Joseph Bowie, Hamiet Bluiett, Oliver Lake, and John Hicks became frustrated and left. A generation later, Ronnie Burrage and other younger lions followed suit.

Ironically, the climate for live jazz is far better in Columbia, Missouri, a town of 60,000 people located halfway between the million-plus cities. Murry's, a 75-seat jazz club, was opened in Columbia three years ago by co-owners Gary Moore and Bill Sheals. Chief among their successes has been the attraction of front-line musicians to perform on Saturdays, traditionally the most expensive and toughest one-night booking. In the last 12 months, Columbians have heard flugelhornist Mike Metheny, bassist David Friesen, guitarist Peter Leitch, and pianists Joanne Brackeen and James Williams. None of these players could find a forum in Kansas City or St. Louis. Anticipating John Hicks's second visit to the club, Murry's contacted *more than a dozen* neighboring jazz promoters. All declined to participate. (Hicks performed in Lawrence, Kansas, a small town 40 miles west of Kansas City, on a Thursday and in Columbia two days later before returning to New York.)

Personally, I have totally lost respect for these two cradles of jazz. Kansas City and St. Louis no longer deserve to lean on their reputations—reputations that are hopelessly stale and now entirely false.

Jonathan W. Poses



JOHN HEDGE COE

Fame's Catching Up With

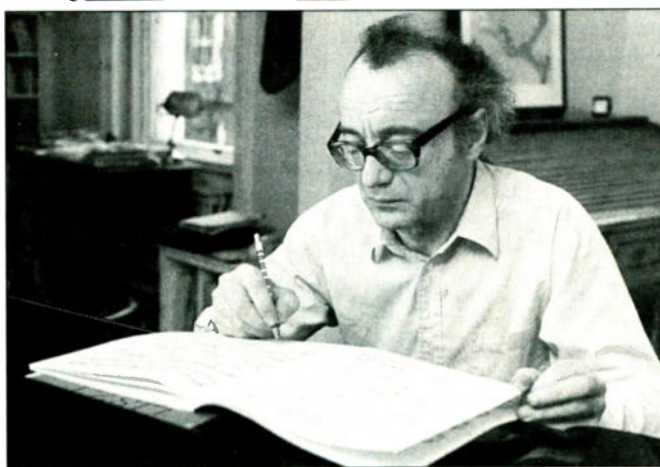
ALFRED BRENDEL

To judge by appearances, Alfred Brendel is a pretty unlikely hero. Hair perpetually disheveled, forehead furrowed like a Thomas Hart Benton landscape, teeth a little too prominent, he shambles onstage like an absent-minded professor, looking rather bookish in his thick-rimmed glasses. People sometimes remark that he could pass for a tall version of Woody Allen.

But heroes are often unlikely. And once Brendel's clear-toned, finely nuanced Haydn, Beethoven, or Liszt issues from the piano, his fans are transported. No glamour boy, not even a flashy interpreter, he is one of today's most listened-to and most talked-about keyboard artists. In an age supposedly devoted to the mediagenic, Brendel has broken all the rules.

It hasn't always been so. Two decades ago, Colbert Artists, his American managers, were begging presenters to sign him up. His name rang a bell only with those who'd seen his Vox recordings of the complete Beethoven sonatas sitting in dusty bargain bins. But one thing led to another, and Brendel went on to prove that careers can be made without the trappings of high-visibility media hype. He simply went on doing what he believed in, and bigger and bigger audiences came around to believing, too.

We meet in connection with one of his virtually annual engagements with the Boston Symphony at Tanglewood. Our conversation begins in a handsomely appointed sitting room at Blantyre, one of those grand Berkshire estates reincarnated as a fancy guest house. It's a gorgeous



ALECIO DE ANDRADE

July afternoon, and soon we're outside.

Brendel takes a few minutes to warm up. His first few answers are carefully considered and brief. But the smiles start to come more often—and then the big, utterly contagious grin. His English is easy and idiomatic, delivered in a quiet, almost conspiratorial baritone.

One of those grins forms when I say it's ironic that he continues to be labeled an "intellectual" or an "objective" player—not the sort you'd expect to inspire so wide and devoted a following—and that he rarely ventures outside a century's worth of Austro-German repertory. "It's interesting," he replies, "that these are questions raised only in America. I think they tell you more about the American view of music than about me, in a way."

The grin disappears as Brendel addresses the "objective" label. "I don't think this is quite true," he argues. "If you would follow along on one of my tours, you would see that my performances turn out to be quite different. I don't like so-called 'objective' playing, which tries to

**A portrait of the
artist as a man
of many interests,
whose playing
interests many.**

BY SCOTT CANTRELL

exclude a personality in order to get the spirit of the composer down from heaven. It doesn't work. But I also do not like performers who are out to surprise the listener by doing everything differently from what anybody would ever expect. I think that is an immoral stand: These people should have tried to become composers and proved themselves as composers."

He goes on to talk about musicians he has admired, and they're anything but the objective types. He mentions Furtwängler, Bruno Walter, Calas, and Cortot. "They were individualists, but they were not the kind of flamboyant musician who thinks he is god and the composer is his servant."

We move to the subject of his repertory, which scarcely extends beyond the Austro-Germanic mainstream of Haydn, Mozart, Beethoven, Schubert, and Schumann, with Liszt thrown in as an odd relative. The irony is that Brendel's own listening ranges so widely.

"For me, the central European repertory is, by and large, the great repertory," Brendel opines. "I have no nationalistic feelings—I've lived in London for 17 years—but the great majority of the great composers have come from this area. I don't know why, but it is a fact."

Would he ever consider turning to, say, Debussy? "No. I think this repertory is large enough, larger than a human being can do justice to in a lifetime. For me, it isn't a matter of just learning a piece, recording it, and discarding it; it's a matter of living with pieces. I try to choose pieces which would stay interesting."

To anyone who knows Brendel's playing, such a statement should come as no surprise. If there's a single distinctive feature in the Brendel "style," it's the delicate detail work. It's the product of long and careful deliberation, of toying with the tiniest nuances of attack and color. No wonder Brendel huddles close to the keys, as if in intimate two-way communication with them. But there's also a strong sense of structure, the legacy of early lessons in composition.

Brendel settled on his own musical career only as he began his third decade. Born on January 5, 1931, in the Czechoslovakian town of Wiesenberg, he spent ten years in Yugoslavia, then seven in Graz, Austria. For the next 20 years, home was Vienna. His wasn't a musical family, but young Alfred's musical aptitude didn't go unnoticed.

"But I wasn't a child prodigy," Brendel has written, "and there seemed to be some other options. My second love was, and is, literature—some writing, a large

ALFRED BRENDDEL

amount of reading. In Zagreb [Yugoslavia], my father was for a time director of a cinema, and I went to see films every weekend. In my teens in Graz, I attended art school and painted and drew a lot: portraits, imaginary cityscapes, a series of fantastical pictures called 'masks.'"

The piano lessons begun at age six were given up at sixteen. The only real contact Brendel had with teachers thereafter was



ALFRED BRENDDEL

He is committed to the modern Steinway . . .

in "a few" masterclasses with Edwin Fischer and Edward Steuermann. But Brendel listened to the pianists then heard in Vienna—Cortot and Kempff, especially—and to recordings of Schnabel.

"I learned from all of them," he says, "but I did not try to imitate them. I also didn't try to play completely differently from anybody else. I did find out much for myself. It was a longer process, but in the end it was my own."

Not surprisingly, given his background, Brendel himself has no interest in playing guru. He used to give short masterclasses, but they quietly fell by the wayside as his schedule filled out. He'd really rather write about music. His book *Musical Thoughts and Afterthoughts* has been a steady seller since it was published by Princeton University Press in 1976. For *The New York Review of Books*, he has written articles on playing Mozart and listening to Liszt, and he has contributed some of the liner notes for his own records.

"I do it on the side all the time, as much as time permits," he explains. "I've just started to work on a second book of essays, but it is time-consuming, even if the material is there. And I have to do it in two languages—German and English. It works better. I would like to have a solid six months just to sit down and write."

The private Brendel is quite a different creature from the nervous onstage professor. He moves with surprising grace, and his manner is a mix of Old World courtliness and subtle avuncular mischief. Probably few in his admiring audiences realize the breadth of his interests, a legacy of those childhood enthusiasms. He's a compulsive reader—from novels to literary criticism and books on philosophy and psychology. With another of his big grins, he admits to collecting inadvertent humor in print—such as an ad for a beauty preparation with reversed "before" and "after" pictures—and to collecting postcards from the First World War. "The notion, the meaning, of kitsch has interested me for a very long time," he admits. "It helps us to realize what art is."

With this, there's a hearty laugh. Brendel goes on to confess a fondness for cartoons. "I think cartoonists are among the important figures of the century—as creators, in a sense, of the world in which we live. And this seems to me almost a predominantly American specialty." Favorites include Charles Addams, Edward Gorey, and—get this—Gary Larson of *The Far Side* fame.

In London, Brendel often goes to the opera and to new music concerts. "I listen to new music as much as I can. Before I left London this time, Elliot Carter was there, and his Third and Fourth Quartets were performed. And Ligeti's piano music was performed in its entirety in one evening. His etudes are very fine and very difficult pieces. He's going to write more of them."

Would they ever appear on a Brendel recital or recording? "No," he replies, "but I'm most interested to see what my younger colleagues will do with them."

The one piece of "modern" music with which Brendel has been associated is the Schoenberg Concerto. Back in the early 1950s, he was one of the first pianists to take up its cause—it was composed in 1942—and he suspects that he may have played it more than anyone else. It's still in his repertory, and he says he'd like to record it again.

Perhaps it's life imitating art—concerts modeled on recordings—that accounts for Brendel's penchant for recitals entirely devoted to single composers. Back

in the early 1960s, he made a big splash in London with a recital cycle of all the Beethoven sonatas, a feat he's since repeated a number of times. This spring, he goes on tour with four all-Schubert programs. He took them to the Soviet Union in March, and he'll be playing them this April and May in New York, Washington, D.C., Chicago, Madison, Los Angeles, and San Francisco. [*The complete cycle will be heard in Los Angeles and New York.*—Ed.] Shortly thereafter, much of this repertory should be appearing on record.

Sometime in the future, Brendel would like to tour with two all-Haydn programs. "This has not been done before, and, curiously, this composer has been neglected almost completely by the great older pianists. I find it important—also as a viewer of art—to see how the production of an artist looks in a large exhibition, four or five big rooms. What does it do for you? Does it hold its own or does it get tiresome? For me, there are certain composers in piano literature who can stand the test, and I think Haydn is one of them." Eventually, Brendel would like to widen his still-circumscribed Mozart and Schumann playlists and to explore "amusing corners" like Rossini and Smetana.

While he champions composers such as Mozart and Haydn and has made a careful study of 18th-century performance practice, Brendel can't summon much enthusiasm for the present-day revival of older instruments. He prefers Scarlatti, some 18th-century French music, and "very little" of Bach on the harpsichord. Otherwise, he remains committed to the notion that historic music has latent expressive possibilities that can best be brought to life on the modern Steinway. "I think most piano music written by great composers is not tailored for a certain instrument of a certain vintage. It is a receptacle of everything music can express—orchestral, vocal, or anything else a composer could do."

To Brendel, there's less to be learned from the instruments known to composers than from the context of their music in other genres. That much is clear from the way he has been preparing for his upcoming all-Schubert programs. "What did Schubert do in his chamber music and orchestral works? How did his lieder fit the voice? How did he treat his texts? What do his harmonies tell me in connection with certain texts? What do major and minor mean to him? How did he apply them?"

"The question of old instruments is particularly virulent in the case of Schubert, I think. So many of his later sonatas are as orchestral in their imagination and

ALFRED BRENDEL

in their range of dynamics and color as any music I could name. They actually cannot come to life on a period instrument. And the instruments of Beethoven's time were in a state of flux. Some of them were produced when he was already quite deaf."

Brendel admits that it's partly a question of environment—the differences between the performing spaces of the 18th and early 19th centuries and those of our



CAULIE HESSLEFORS

... and skeptical of note-perfect recordings.

own. "How much dynamics are needed to bring a piece alive in a hall that seats 3,000—or a Tanglewood Shed that seats 6,000? How does one suggest the music without distorting it?"

"With old instruments, you need completely different rooms. If you put a harpsichord or gambas in the Schönbrunn Palace in Vienna, they sound lovely; if you put a piano there, it sounds impossible. This specialization in older instruments brings big gains in certain orchestral and choral music, but not, at least as far as I am concerned, with the fortepiano. There are qualities that come out better, but I think the modern piano has more to offer altogether."

Brendel has an abiding love for chamber music, and his collaboration with members of the Cleveland Quartet a few years back made for one of the most satisfying *Trout* Quintets on record. Recently, he got together with Heinz Holliger, Hermann Baumann, and friends to make a

new recording of the Mozart and Beethoven quintets for piano and winds. Brendel has warm feelings, too, for Schubert lieder. He made his American debut in 1964, at New York's Hunter College, accompanying Hermann Prey in *Die schöne Müllerin*, and nearly 20 years later recorded *Winterreise* and *Schwanengesang* with Dietrich Fischer-Dieskau.

Philips, Brendel's exclusive label for nearly 20 years, recently released his new recording of Mussorgsky's *Pictures at an Exhibition* ("I played it in my earliest years quite a bit, and it was on one of my earliest recordings for Vox") and a new Brahms D minor Concerto with Claudio Abbado and the Berlin Philharmonic. The latest installments in his ongoing Liszt discography are two volumes of the *Années de Pèlerinage* (there are also some Liszt works filling out the Mussorgsky release).

Brendel is quick to acknowledge how recordings have changed our way of hearing music. For one thing, there's the present-day fetish for note-perfect performances. "I am not a perfectionist myself," he says. "Of course, I try not to be sloppy. In the service of a composer, to be meticulous is a good thing. But I do not overestimate the kind of spotless surface that these days, with the help of the record, is so often achieved, and which some listeners seem to look for—and some critics. There is that comment of Steuermann about 'the barbarism of perfection,' of which I sometimes have to think."

Then, too, there's the immense variation in recording techniques and playback equipment. "There are all kinds of things in the machinery—often denied—that can slightly change the balance of your playing, or slightly distort the dynamics over a certain level, and it suddenly doesn't make sense. There are also certain circumstances, particularly in modern recordings, when the right speakers in the right room with the right amplifier are absolutely essential. That worries me a little."

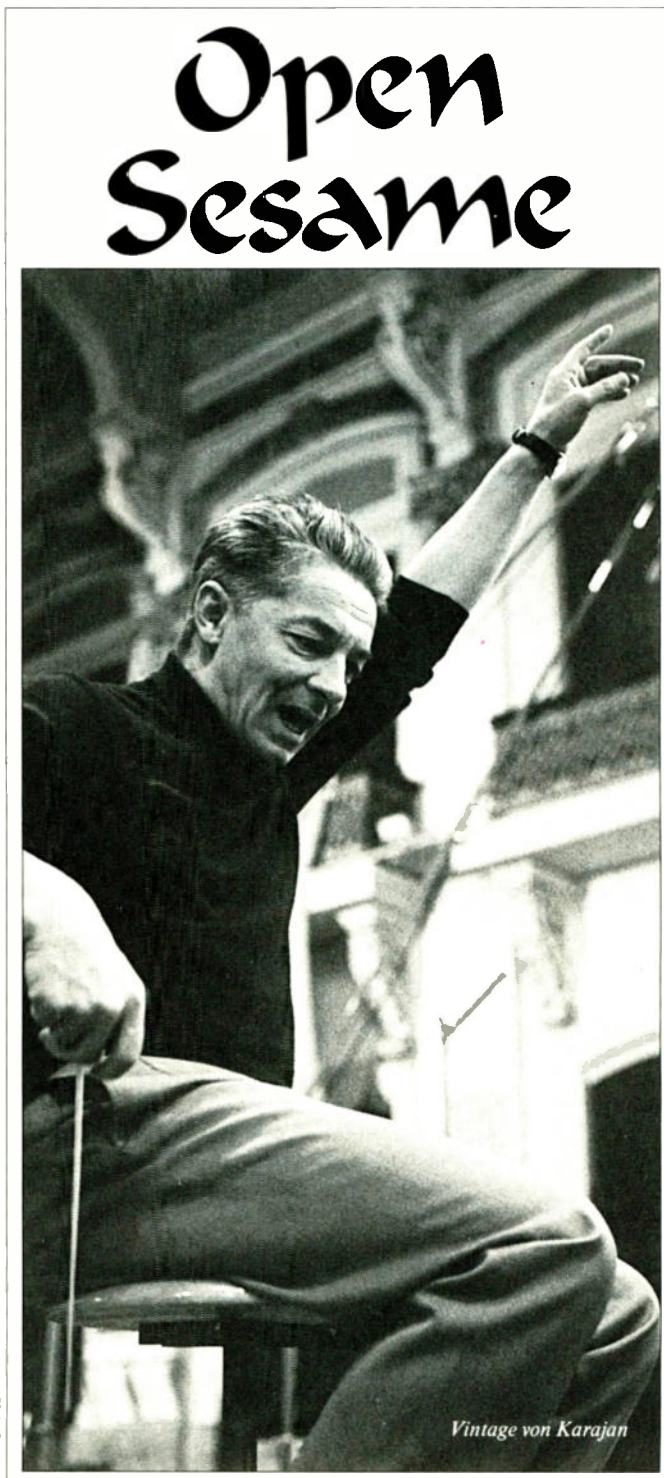
"The dependence on refined machinery is too large, from the CD player to the fantasy of SDI. If you've been at Heathrow Airport when suddenly a computer breaks down, you won't forget it. Somebody who has a CD player at home may not notice whether he hears the right thing or whether the damned thing has gone awry. It's like *kaffeestutzen*, telling the future from the remains of the coffee in the coffee pot." □

A frequent contributor to a variety of national publications, Scott Cantrell is music critic of the Rochester (New York) Times-Union.

After a slow start, Angel EMI has entered the midprice CD forum with a vengeance. The label is currently releasing reissues on three lines—Studio, Eminence, and Classics for Pleasure—and several new midprice ventures are in the works. Generally, the Studio Series presents classic performances from EMI's back catalog, most dating from the analog era. Eminence offers all-digital recordings of unusual repertory or worthy performances of standards by lesser-known artists. Similar material—from analog and digital originals—is carried by Classics for Pleasure, a line issued by the Music for Pleasure division of British EMI. All told, Angel has alighted on an intelligent release strategy, especially given the fact that many of the midprice issues supersede the label's own full-price competition, both interpretively and sonically.

EMI's back catalog may be the richest of any major record company's. As the reissue boom escalates, many out-of-print treasures can be expected to become available once again. Among these, virtually anything conducted by Sir Thomas Beecham will prove especially desirable. His performances of music by Grieg (incidental music from *Peer Gynt*, *In Autumn*, and *Symphonic Dance* No. 2) on the Studio Series are a case in point, simply annihilating the competition. Soprano Ilse Hollweg, the Beecham Choral Society, and the Royal Philharmonic Orchestra deliver subtlety and sparkle in abundance, and the recordings, of 1956–60 vintage, sound excellent (Angel EMI CDM 69039; 58:15). Two classic concerto issues on the same line merit special mention. Brahms's Violin Concerto has seldom been more commandingly performed than in 1960, when violinist David Oistrakh teamed with Otto Klemperer and the French National Radio Orchestra (CDM 69034; 40:54). That same year, the young Maurizio Pollini collaborated with Paul Kletzki and the Philharmonia Orchestra in a near definitive account of Chopin's First Piano Concerto. The present release generously couples this with brilliant performances of four of Chopin's shorter solo piano works (CDM 69004; 62:30). The sound in both concertos is still eminently acceptable.

HANS WILD



Vintage von Karajan

Open Sesame

The best of Britain's choral tradition is represented on a Studio Series CD containing Carl Orff's *Carmina Burana*. This performance caused something of a sonic sensation upon its release in 1966, and though its aural allure has faded somewhat, it remains a marvelous example of natural-sounding recording. Rafael Frühbeck de Burgos leads the New Philharmonia Orchestra and Chorus, with soloists Lucia Popp, Gerhard Unger, Raymond Wolansky, and John Noble, in an appropriately earthy performance (CDM 69060; 60:57). Finally, a classic new to these shores: Sir Adrian Boult's 1979 account of Holst's *The Planets*. Boult's association with this work began almost before the ink

was dry on the manuscript, when he conducted its informal, private premiere at Queen's Hall, London, in 1918. Sixty-one years later, with the London Philharmonic Orchestra, Boult committed his final thoughts on the piece to posterity, yet Angel never released the result in this country. Despite Charles Dutoit's recent achievement, no one comes close to Boult's natural and authoritative way with this music. Sonics are of demonstration quality, and this is a steal at midprice (CDM 69045; 48:30).

Many Studio Series releases consist of performances by Herbert von Karajan. Given the frequency of his appearances on record and the range of his repertoire, it's curious that so few of his interpretations stand out as prime recommendations. This is certainly true of Karajan's approach to Mozart, a composer with whom he has never had much affinity. Two new CDs have little to recommend them beyond generous timings and a proficient Berlin Philharmonic Orchestra. One contains Mozart's concertos for oboe, clarinet, and bassoon, with soloists Lothar Koch, Karl Leister, and Günter Piesk, respectively (CDM 69014; 71:35); the other features Symphonies Nos. 35, 40, and 41 (CDM 69012; 70:47). Similarly, a Berlin Philharmonic disc containing excerpts from Haydn's *The Seasons* makes an odd choice for a release. This work, though surely deserving, simply does not have the popularity to justify a disc of "hits," and these pedestrian readings lack the sense of fun that Haydn's music best expresses (CDM 69010; 53:20).

Karajan hits bottom with the release of his dreadful 1971 Bruckner Fourth Symphony, which, from the sound of it, could have been recorded in 1941 (CDM 69006; 70:00). Of Bruckner's symphonies, this one in particular requires the easy warmth, geniality, and *gemütlichkeit* that Eugen Jochum and Karl Böhm shared—qualities utterly foreign to Karajan's character, despite his other successes with this composer.

Happily, two releases uphold this conductor's reputation for interpretive excellence. Sibelius has always been a favorite of Karajan's, and his performance of the First Symphony is elemental in its power and grandeur, though sometimes rough in ensemble. The *Karelia Suite*, which follows the symphony, gets a bit too majestic at times but otherwise is well done. The digital recording is satisfactory (CDM 69028; 55:16). Franck's *Symphony in D minor* also sounds fine in Karajan's hands, though the performance may be too heavy for some. The *Orchestre de Paris* is better recorded in the symphony than is the Berlin Philharmonic in the coupling, Franck's *Symphonic Variations*—a lumpy performance with Alexis Weissenberg at the piano (CDM 69008; 57:47). Pity the Berlin Philharmonic: While Deutsche Grammophon records it harshly, as though through a microscope rather than a microphone, EMI prefers to let it wallow in a bottomless acoustical quagmire. When will a record company do justice to this ensemble?

Many of the gems in the EMI catalog are being reissued on the Eminence line. At any price, the four releases considered here would be worth the outlay. Three of the discs contain British music and document the partnership of the London Philharmonic Orchestra and Vernon Handley. Although little known in this country, Handley has made a name for himself as the closest thing to a successor to Boult. Handley's performances have much of Boult's spontaneity and integrity, with none of the slackness that understandably affected Boult in old age. A disc containing Vaughan Williams's ballet *Job* marks a major addition to the CD catalog. The work itself is a masterpiece that belongs in every collection (CDM 62016; 48:23). Handley's two other discs—featuring performances of Elgar

(the *Enigma Variations*, *Serenade* for string orchestra, and Introduction and Allegro; CDM 62013; 57:03) and Vaughan Williams (*The Wasps Suite*, *Five Variants of Dives and Lazarus*, and *The Lark Ascending*; CDM 62018; 53:20)—are equally recommendable. Last, in a completely different vein, flutist William Bennett turns in lively and appealing readings of Vivaldi's *Flute Concertos*, Opus 10, with George Malcolm directing the English Chamber Orchestra from the harpsichord (CDM 62014; 54:14). Anyone wanting recordings of these pieces need not spend a penny more than the price of this disc.

Of Angel's three midprice lines, Studio and Eminence have enjoyed more plentiful releases and wider availability in this country. There are fewer Classics for Pleasure titles being imported, and, according to Angel, the consumer demand has exceeded initial expectations, often making these discs hard to find. Two worth shopping for come to mind: Dvořák's *Symphony No. 9 (From the New World)* and *Symphonic Variations* with the London Philharmonic conducted by Zdenek Macal (CDB 62006; 65:38) and selections from Wagner's *Die Walküre*, *Götterdämmerung*, *Lohengrin*, and *Die Meistersinger von Nürnberg* (CDB 62007; 48:01) with the same orchestra, led by Karl Anton Rickenbacher.

Compact Discs on all three lines are attractively packaged with clear and comprehensive annotations. None appears to be a "budget" product, which is the way it should be. After all, the presentation should reflect the caliber of the artistic enterprise being promoted, not the price. Good work, Angel.

Editor's note: As we went to press, Angel announced that it is digging yet deeper into its archives to reissue selections from its historic "Great Recordings of the Century" series, formerly available on LP. These include such remarkable relics as Fyodor Chaliapin's performances of Russian opera arias, Walter Gieseking's Debussy Préludes, and Hans Hotter's Winterreise. The "Great Recordings" CDs will be available at midprice this spring, along with a new batch of Karajan opera reissues in honor of the conductor's eightieth birthday. □

Angel EMI mines the vaults. Part II of a continuing survey of midprice CD series

BY DAVID HURWITZ



Otto Klemperer

ADRIAN SIEGEL



MINI-REVIEWS OF THE LATEST COMPACT DISCS

By Robert E. Benson, David Hurwitz, Paul Moor, Robert R. Reilly,
Christopher Rothko, Terry Teachout, and James Wierzbicki

MOZART WIND SERENADES: NETHERLANDS WINDS

Edo de Waart's 1968 recordings of Mozart's Wind Serenades in B flat, K. 361, and E flat, K. 375, are the most satisfying performances of these marvelous works available. The Netherlands Wind Ensemble plays like a giant, flawlessly voiced pipe organ. Tempos are perfectly judged, and the analog sound is clean and well balanced. The price is right, too, this being one of the first releases in Philips's Silver Line Classics midprice CD series. More recordings from the Netherlands Wind Ensemble, please, starting with their memorable collection of wind music by Stravinsky. Playing time: 74:11. (Philips 420 711-2.) *T. T.*

DVOŘÁK PIANO QUARTETS: SUK TRIO, KOD'OUSEK

Dvořák liked to compose in his kitchen, and this homey image corresponds to the great emotional warmth one can feel in his chamber music. The two Piano Quartets, Opuses 23 and 87, reflect his large heart; they are brimming with joy, melancholy, drama, and dance. The Suk Trio, joined by violist Josef Kod'ousek, imbues these two gems with an abandon and generosity of feeling befitting players of such achievement. Rather than glide over the music's many little dramas and felicities, the ensemble digs in, bringing to its interpretations a real sense of grit. As is appropriate for performances that communicate so directly, the digital recording is clear and close enough that you can hear the strings snap. With just over 70 minutes of music, this is in every way a generous and exciting release. Playing time: 70:31. (Supraphon C37 7602. Distributed by Denon.) *R. R. R.*

RACHMANINOFF THIRD PIANO CONCERTO: GAVRILOV

The brilliant young Russian pianist Andrei Gavrilov (b. 1956), who won first prize in the 1974 International Tchaikovsky Competition, has long made a specialty of Rachmaninoff's Piano Concerto No. 3, in D minor, Opus 30. He recorded the work for Melodiya shortly after his competition triumph, and on this new Angel EMI version, he again opts for the more difficult first-movement cadenza, which he plays spectacularly. Gavrilov is con-

summate in his control, almost too refined in certain passages, yet his treatment of the third-movement cadenza is so ponderous that all momentum is lost. The Philadelphia Orchestra, under Riccardo Muti, provides glorious accompaniment; it is difficult to believe this is the same orchestra that sounds so thin and undernourished in a performance of the same work with Vladimir Ashkenazy as soloist and Eugene Ormandy conducting, recently reissued on RCA's Papillon CD series.

Overall, the Gavrilov/Philadelphia account ranks among the finest recordings of this concerto, despite the flaws in Angel's engineering (which favors the orchestra and leaves the piano sounding rather metallic). It is unfortunate there are no fillers; several piano solos could easily have been included to extend the playing time of this premium-price CD. Playing time: 45:36. (Angel EMI CDC 49049.) *R. E. B.*

GERMAN FOLK SONGS: PREY

If you want to pick nits, you technically can't call the majority of these dozen charmers "folksongs," since they were in fact created by known poets and composers. In some instances, a highly reputable German poet (Eichendorff, Claudius) has written words to fit an authentic folk tune or additional stanzas to enhance and extend a genuine folksong; in others, a reputable composer has adapted an original folk tune.

No matter. Don't ask questions, just enjoy—particularly if you understand German. Baritone Hermann Prey sings these songs as if he had just thought them up himself, and he could certainly give diction lessons to most of his colleagues singing German today. If you know this sort of music already, you'll find some old favorites here ("Der Mond ist aufgegangen," "Ich schiess' den Hirsch," and "Am Brunnen vor dem Tore," which Schubert appropriated for *Winterreise*) but also a number probably new to you, as to me. Prey sings most of them in a velvety *mezza voce*, with an occasional tendency to sink just the slightest smidgen below the intended pitch, but I can't think of anyone on earth I'd rather hear sing them. An anonymous instrumental group and, for a few songs, some backup singers provide the altogeth-

er suitable accompaniment. Complete texts, but in German only. Playing time: 59:14. (Capriccio 10115. Distributed by Delta.) *P. M.*

SIBELIUS SECOND SYMPHONY: VIENNA, BERNSTEIN

Leonard Bernstein's recordings over the past few years for Deutsche Grammophon have run the interpretive gamut from the bizarre to the sublime. He has recorded splendid Haydn, Mozart, Brahms, and Schumann, yet his version of Mahler's Ninth Symphony with the Concertgebouw Orchestra is unconvincingly overstated and grotesquely exaggerated. His recent Tchaikovsky *Pathétique* with the New York Philharmonic, on the other hand, is a revelation—a devastating personal statement of despair and a valid interpretation that makes most others seem prosaic.

Bernstein's new account of Sibelius's Symphony No. 2, in D, Opus 43, is of the same level of interpretive insight. It is the most expansive performance ever recorded, a pensive and searching reading of incredible power. The second movement is particularly forceful, although the tempo taxes the resources of the Vienna Philharmonic. The sonic quality of the live recording is excellent. A magnificent achievement. It is unfortunate, though, that DG did not include some kind of Finnish filler to offer more playing time for the dollar. Playing time: 51:16. (Deutsche Grammophon 419 772-2.) *R. E. B.*

ROSSINI "L'ITALIANA": I SOLISTI VENETI, SCIMONE

RCA Erato is unquestionably one of the most shamelessly negligent major record companies. It has reissued this stunning recording of Rossini's delightful comic opera *L'italiana in Algeri* without translations of the Italian libretto, thus making a questionable proposition out of a certain winner. Of course, with a cast that includes Marilyn Horne, Samuel Ramey, Ernesto Palacio, and Kathleen Battle, it's impossible not to recommend these two well-filled CDs. Claudio Scimone's peppy conducting of I Solisti Veneti is another plus. In the first-act finale, Rossini reduces all of the principals' parts to mere animal noises anyway, so the lack of a text is less

of a liability there. As with this label's CD of Chausson's *Le Roi Arthur* (which lacks banding), it would give some satisfaction to be able to dissuade prospective purchasers from investing in shabbily produced product—if only the performances weren't so damned good! Playing time: 140:00. (RCA Erato ECD 88200.) *D.H.*

POULENC SONGS: MESPLÉ, TACCHINO

Mady Mesplé and Gabriel Tacchino offer a generous compilation of songs by Francis Poulenc—the first such collection to appear on CD. Several of Poulenc's lighter song cycles and collections are included, among them *Fiançailles pour rire*, *Airs chantés*, *Métamorphoses*, and *La Courte Paille*. Also thrown in are two of Poulenc's most popular songs, the Louis Aragon setting "C" and the Jean Anouilh "pop" song "Les Chemins de l'amour." Georges Prêtre and the Monte Carlo Philharmonic Orchestra join forces with Mesplé for the Cocteau monologue *La Dame de Monte Carlo*. A highly imaginative program, in other words, and therefore it is a shame to report that Mesplé, a sensitive interpreter, is in less-than-ideal vocal estate. Tacchino proves to be an excellent and sympathetic accompanist. Still, one hopes for better, and one hopes in particular for a full-scale reissue of Pierre Bernac's recordings with the composer at the piano. Bernac had his share of sour-sounding moments, too, but nobody has ever sung Poulenc better. Playing time: 66:10. (Angel EMI CDC 47550.) *T.T.*

[Bernac and Poulenc can now be heard on a recent *Adès* CD (14 114-2) containing more than 30 of the composer's songs.—Ed.]

BIZET, TCHAIKOVSKY: ORCHESTRAL WORKS

In April 1963, Charles Munch and the Royal Philharmonic Orchestra gathered in London's Walthamstow Town Hall to record Bizet's *Symphony in C* and Tchaikovsky's *Franческа da Rimini* for the Reader's Digest "Treasury of Great Music" series. The remarkable team of producer Charles Gerhardt and engineer Kenneth Wilkinson was at the helm of this project, which resulted in a collection of distinctive performances recorded with exceptional sonic quality. Munch's Bizet is a model of propulsive delicacy and high-spirited playing; in his Tchaikovsky, the frenzies of hell are wonderfully depicted and beautifully contrasted with the exquisite love theme of *Franческа* and Paolo.

Chesky's remastering of the original analog tapes has been splendidly accomplished: There is richness in the strings, a brilliant edge to the brass, and a satisfying sense of presence. If you enjoyed Chesky's reissue of Sir John Barbirolli's Sibelius Second Symphony, also from the "Treasury

of Great Music" series, you'll derive equal pleasure from this outstanding CD. Playing time: 48:38. (Chesky CD 7.)

R. E. B.

MILHAUD WORKS: SINFONIA DA CAMERA, HOBSON

It was in 1920, in London, that Darius Milhaud got his first taste of American-style jazz. He took in as much of it as he could when he returned to Paris, mostly via the recordings that his friends Jean Wiener and Clément Doucet had begun to collect; by 1922, when he visited jazz clubs in Harlem, Milhaud was a fan almost as knowledgeable as he was avid. A year later, he took the essence of what he'd learned and used it to flavor the ballet score titled *La création du monde*. A generous dose of swishy rhythms and wailing alto-sax melodies, however, doesn't make *La création* an "original jazz composition," as the cover of this recording claims it to be. For that matter, the performance isn't even all that jazzy; the chamber orchestra called Sinfonia da Camera (founded in 1984 at the University of Illinois by pianist-turned-conductor Ian Hobson) sometimes contains some good musicians, but the bassist, trombonist, saxophonist, and trumpeter mustered for this project generally sound pretty square.

The best playing—a winning example of confident yet relaxed virtuosity—comes from Hobson himself in Milhaud's 1920 *Caramel Mou* and 1922 *Three Rag Caprices* for solo piano. The violinist and clarinetist who join Hobson in the 1936 *Suite* suffer from the same stiffness of approach that gets in the way of the fun in *La création*; the 1937 *Scaramouche* offered by Ian and Claude Hobson is zesty enough, but the two pianos sound strangely out of balance. Playing time: 46:38. (Arabesque Z 6569.) *J.W.*

MUSKA DELLA CAPPPELLA SISTINA

My first reaction upon seeing this disc was, "Oh no, not another *Allegri Miserere*." Fortunately, this complaint proved unfounded: Although the *Miserere* does appear in this collection of music composed for the Sistine Chapel Choir, it is not in its familiar form. Instead, Andrew Parrott has made a montage of several versions of the work with varying styles of ornamentation that date from different periods of Sistine Chapel performance practice. The result is both hyperauthentic and not authentic at all, since no such hybrid was ever performed in the papal chapel. Authentic or not, it makes for fascinating listening: Many of the embellishments are strikingly chromatic and require considerable technical skill.

The remainder of the disc is filled with motets by Josquin, Morales, and Palestri-

na. Of these, the four Palestrina works come off best, their broad, sweeping lines evoking the most lively and committed response from the Taverner Consort, particularly in the *Dum complerentur dies Pentecostes*. But while the performances are quite polished, there is something vaguely pedestrian about them. The singing is perhaps too pristine, with little sense of forward drive from Parrott, resulting in beautiful music that at times fails to excite. The recording is bright and close, making the voices crystal-clear. Playing time: 61:10. (Angel EMI CDC 47699.) *C.R.*

COLGRASS, DRUCKMAN: ORCHESTRAL WORKS

New World's delightful coupling of music by Michael Colgrass and Jacob Druckman makes a welcome reappearance on CD. Colgrass's two pieces, *Déjà vu* (winner of the 1978 Pulitzer Prize) and *Light Spirit*, explore the composer's roots in jazz—as well as his love of percussion instruments—through challenging but engaging and accessible music. Druckman's *Aureole* is a special piece for me, since I attended the world premiere in 1979 and, like many in the audience, was bowled over by its vibrancy and brilliance. The work is a shimmering paraphrase of a theme from Leonard Bernstein's *Kaddish* Symphony as well as a virtuoso exercise in orchestral textures. The St. Louis Symphony plays superbly throughout; Catherine Comet conducts *Light Spirit*, and Leonard Slatkin leads the remaining pieces. New World's sonics meet the challenge offered by the music. Playing time: 37:23. (New World NW 318-2.) *D.H.*

YSAÏE SOLO VIOLIN SONATAS: SHUMSKY

Eugène YsaÏe, the Belgian violin virtuoso, sketched his six sonatas for unaccompanied violin in a single sitting after hearing Joseph Szigeti perform a Bach solo sonata. Each sonata is dedicated to a different violinist and reflects certain musical and stylistic characteristics of the dedicatee. (For instance, the A minor Sonata, subtitled *Obsession* and dedicated to Jacques Thibaud, consists of a set of variations on the first movement of the Bach E major Partita, Thibaud's daily warm-up piece.) Oscar Shumsky, who played in the NBC Symphony under Toscanini and who has recently come to the attention of a number of small record labels, is very much the virtuoso, and his beautifully engineered Nimbus CD of these fascinating pieces easily outclasses earlier recordings by Charles Castleman and Ruggiero Ricci. By the way, Shumsky has also recorded quite a bit of Fritz Kreisler for the English label ASV, and a CD or two drawn from this material would be equally welcome. Playing time: 61:46. (Nimbus NIM 5039.) *T.T.*

haze of color. Dutilleux casts soloist and orchestra as equals, and rather than concentrating on showy technical display or searching for novel violinistic effects, he asks Stern to focus on beauty of tone and variety of timbre, and on sustaining the melodic line.

The spirit of the Scottish landscape—and particularly the desolate Orkney Islands, where the composer lives—hovers over Davies's Concerto (1985). Not only do the brooding first movement and the mysterious second evoke windswept moors, crashing surf, and crying gulls; Scottish folk music appears in the bagpipe drone of the Adagio and the lilting dance-like pages of the finale. What a long road Sir Peter has traveled in 20 years! In the 1960s, his attentions seemed to be divided between lurid music-theater works (such as *Ei-ht Songs for a Mad King*) and essays

how long, how often, and to what extent Bernstein has seen fit to edit the works of his 20th-century colleagues. He does realize much of this work's uniquely American nobility, but the passages that cry out for retakes, together with the mutilation of the score, combine to defile the overall accomplishment. William Schuman's impressive work fares considerably better—although, in the final Toccata, the strings show the imprecision of the winds in the Harris. In attacks where they ought to bite, they merely gum.

I have an unusually strong attachment to both these works (I bought my score of the Harris on February 19, 1946—for \$1.50 new), and the glowing memory of past Bernstein performances had made me await this disc with genuine eagerness. But it strikes me as verging on the downright cynical that DG, let alone Bernstein, actually release. Playing time:

Paul Moor

phonies: Nos. 35, in B flat; G minor; 49, in F minor; A.

Armonico, Solomons. Martin prod. CBS Masterworks (2, D). (3). (3).

phonies: Nos. 42, in D; 45, in B; 46, in B; 47, in G; 51, in A.

Armonico, Solomons. Martin prod. CBS Masterworks (3, D). (3).

transferred onto CD the seventh volumes of its projected

complete Haydn symphony cycle with the English period-instrument group L'Estro Armonico. Vol. 7 offers Symphonies Nos. 35, 38, 39, 49, 58, and 59 on two discs, while Vol. 9 contains Nos. 42, 45, 46, 47, 51, and 65 on three. These middle-period symphonies are a largely unexplored treasure chest of engaging and highly varied music, masterfully combining sophistication and diversion. L'Estro Armonico offers generally fine performances, always crisp and spritely, although the ensemble misses some of the more dramatic touches in the works in Vol. 7.

The symphonies are not performed here in their traditional numerical sequence, but according to the chronology established by recent scholarship. While this may seem a minor point, it actually proves quite fascinating, for one can readily hear the development in Haydn's writing between the two sets. The works in Vol. 7 are unfailingly imbued with a sense of grace and elegance, while those in Vol. 9 are more forward-looking and expressive, with greater contrasts in mood both between and within movements. This is not to say the earlier works lack excitement—both sets can easily be recommended.

Special praise must go to the four natural-horn players, whose clear, steady tone is still a rarity in early-instrument groups. The recorded sound is also fine—very natural with no "digital edginess" to the strings. Playing time: 132:30 (M2K 37861). Playing time: 169:11 (M3K 38685).

Christopher Rothko
(Continued on page 60)

Are you killing your records with a blunt instrument?

Protect your valuable record collection. Replace your phono cartridge or stylus today. Send for our free brochure.

Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60202-3696.
(312) 866-2553.

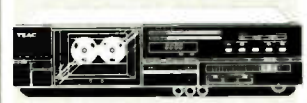
SHURE®



...ns leads L'Estro Armonico in a multitude of Haydn symphonies, on period instruments.



Audio Cassette Deck Specials



Teac V-770
3-Head HX Pro Stereo Cassette Deck
 • Dolby B & C • HX Pro dynamic expansion system • True tape monitoring • Bias fine tuning system • Programmable music search • Black finish
 Sale Price **\$269⁹⁵** Retail \$469



Teac W-660R
Double Auto Reverse Cassette Deck
 • Dolby B and C • One touch high speed cassette dubbing • Continuous play • Memory play search/dubbing • Full logic control
 Sale Price **\$289⁹⁵** Retail \$599



Teac R-435X
Dolby/dbx Auto Reverse Cassette
 • Your most wanted features • Dolby B & C and dbx • Bi-directional record/playback • LED peak meters • Black finish
 Sale Price **\$169⁹⁵** Retail \$299



Aiwa AD-R30U
Quick Auto Reverse Cassette Deck
 • Advanced and affordable O.3 second auto reverse deck • Feather touch IC logic controlled flat keypad • Dolby B & C
 Sale Price **\$159⁹⁵** Retail \$199



Technics RS-T22
Stereo Double Cassette Deck
 • Dolby B and C • High speed editing • Auto space control • LED meters with digital peak display • Microprocessor controlled • Black
 Sale Price **\$159⁹⁵** Retail \$260



Sansui D-W11
Auto-Reverse Double Cassette Deck
 • 2-heads and 2-motors for each transport • 15-track auto music search • Auto loader • Intro skip • Auto bias EQ • Auto azimuth
 Sale Price **\$399⁹⁵** Retail \$600

Phono Cartridges



Shure V-15 Type V-MR
Micro Ridge Phono Cartridge
 • Micro ridge stylus tip • Excellent trackability • Dynamic stabilizer • Side-guard stylus protection • Duo-point alignment gauge
 Sale Price **\$129⁹⁵** Retail \$275

ADC Equalizer Specials



ADC SS-100SL
10 Band Stereo Equalizer
 • Slim-line design • 10-band EQ with 15 dB control range • Fluorescent Real Time Analyzer display • 18 dB subsonic filter • Black
 Sale Price **\$89⁹⁵** Retail \$199



ADC SS-300SL
Equalizer/Real Time Analyzer
 • 10-band per channel with 15 dB range • Real time analyzer with pink noise generator, and microphone • Large fluorescent display
 Sale Price **\$149⁹⁵** Retail \$249

dbx Specials



dbx IBX-DS
Dynamic Range Controller
 • Special impact recovery system adds "punch" to LP's or video tapes • Stereo focus and ambience control • LED display
 Sale Price **\$179⁹⁵** Retail \$280



dbx 14/10
Audio Equalizer/Analyzer
 • Automatic computerized equalizer analyses sound spectrum • Fast or slow speeds • Microprocessor-controlled 14 band EQ
 Sale Price **\$699⁹⁵** Retail \$1299

Technics Turntables



Technics SL-DD33
Fully Automatic Turntable
 • Direct drive • Auto disc size selection • Straight low mass tonearm • P-Mount cartridge connector • Black finish
 Sale Price **\$99⁹⁵** Retail \$169



Technics SL-QD33
Quartz Direct Drive Turntable
 • Fully automatic • 2-motors • Auto disc size selection • Low mass tonearm accepts P-Mount cartridge • Illuminated strobe
 Sale Price **\$129⁹⁵** Retail \$190

- Audio Technica AT32EP P-Mount cartridge **\$64⁹⁵**
- Audio Technica AT-14OML Linear contact cartridge **\$69⁹⁵**
- Audio Technica AT-216EP Universal mount cartridge **\$29⁹⁵**
- Audio Technica AT-201EP Universal mount cartridge **\$14⁹⁵**
- Audio Technica AT-231LP Universal mount cartridge **\$39⁹⁵**
- Shure V15-IVMR Micro ridge stylus **\$69⁹⁵**
- Shure M105E Universal P-mount cartridge **\$38⁹⁵**
- Shure ME92E Magnetic cartridge **\$9⁹⁵**
- Pickering 625-DJ Pro disco cartridge **\$29⁹⁵**
- Stanton 500AL Disco cartridge **\$19⁹⁵**
- Stanton 680EL Pro disco cartridge w/extra stylus **\$49⁹⁵**
- Stanton LB47S Universal mount cartridge **\$59⁹⁵**

Audio Specials



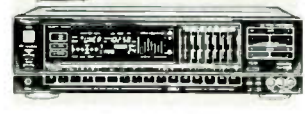
Technics SB-155
Three Way Bass Reflex Loudspeakers
 • Powerful 10 inch woofer with separate 4-inch midrange and 2 inch tweeter • Handles up to 120 watts • Walnut finish cabinets
 Sale Price **\$129⁹⁵** Retail \$299/Pair



Magnavox CDB650
Audiophile Compact Disc Player
 • Flawless sound plus the ultimate memory • Program up to 785 selections from your CD collection in permanent memory • Remote
 Sale Price **\$329⁹⁵** Retail \$499



Magnavox CDB-473
Remote Compact Disc Player
 • 785 track lifetime program memory • 24-function wireless remote • Digital filtering • Dual 16-bit D/A converters • Remote
 Sale Price **\$259⁹⁵** Retail \$379



Teac SA-R510
Remote Stereo Receiver
 • 100 watts/channel • 50-ke large color AV remote • 7 band equalizer • Large 2-color display • Auto simulcast tuning • 24-presets
 Sale Price **\$459⁹⁵** Retail \$799

Beatles Compact Disc Specials



- Please Please Me (46435)
- With The Beatles (4636)
- A Hard Days Night (46437)
- Beatles For Sale (46438)
- Help (46439)
- Rubber Soul (46440)
- Revolver (46441)
- Sgt. Pepper's Lonely Hearts Club Band (46442)
- Yellow Submarine (46445)
- Abbey Road (46446)
- Let It Be (46447)
- Magical Mystery Tour (48062)
- Past Masters Vol I (90043)
- Past Masters Vol. II (90044)

Your Choice
12⁹⁹ Per CD
 Except: • The Beatles (White Album) (46443) **\$23.99**



ORDER TOLL-FREE **800-221-8180** IN NEW YORK, ALASKA & CANADA CALL: (718) 417-3737
 J&R Music World, Dept. HF0588, 59-50 Queens-Midtown Expressway, Maspeth, NY 11378



MUSIC WORLD

Compact Disc Player Specials



Akai CD-A305B
Remote Compact Disc Player
 • Random order, 30-track programming • Anti-resonance construction • Insulated floating 3-beam pick-up and disc tray • Remote
 Sale Price **\$199⁹⁵** Retail \$279



Teac PD-410
Remote Programmable CD Player
 • 3-beam laser • 2X oversampling digital filter • 32-track random programming • Index search • Bi-direction speed search • Black
 Sale Price **\$179⁹⁵** Retail \$449



Teac AD-4
CD Player/Cassette Deck Combo
 • Wireless remote control of both CD & cassette sections • 16-track random program dubbing & play • Dolby B and C • Dubbing
 Sale Price **\$369⁹⁵** Retail \$599



Technics SL-P520
Advanced Technology CD Player
 • Class AA circuitry • 2-speed dial search cueing • High resolution digital filter • 20-track random programming • Remote with volume
 Sale Price **\$299⁹⁵** Retail \$475



Sharp DX-660
Programmable Compact Disc Player
 • 3-beam laser • 20-selection random access program memory • LED output meters • Forward reverse search • 3-way repeat
 Sale Price **\$139⁹⁵** Retail \$199



Teac PD-600M
Multiplay Compact Disc Changer
 • Now you can enjoy up to 6 of your favorite compact discs without interruption • Or program just your favorite tracks
 Sale Price **\$279⁹⁵** Retail \$499

Stereo Headphones



Beyerdynamic DT-990
Audiophile Stereo Headphones
 • Open style headphone with an unbelievable frequency response of 5-35kHz • Unique moving coil assembly • Exceptional detail
 Sale Price **\$179⁹⁵** Retail \$200

- Beyerdynamic DT-880 Semi open digital ready . . . \$129⁹⁵
- Beyerdynamic DT-770 Closed ear headphones . . . \$149⁹⁵
- Beyerdynamic DT-320 Lightweight open air . . . \$64⁹⁵
- Koss PortaPro Lightweight w/great bass . . . \$39⁹⁵
- Koss JCK-200 Wireless w/transmitter . . . CALL
- Koss Pro4X + Closed ear headphone . . . \$57⁹⁵
- Sennheiser HD-414SL Open air digital ready . . . \$49⁹⁵
- Sennheiser HD-430 Wide response open air . . . \$99⁹⁵
- Sony MDR-CD6 New lightweight digital ready . . . \$99⁹⁵
- Sony MDR-M66 Lightweight digital ready . . . \$69⁹⁵
- Sony MDR-A60 Lightweight digital ready . . . \$59⁹⁵
- Sony MDR-V6 Closed ear design . . . \$79⁹⁵

Audio Accessories



Terk FM-8500
Electronic Indoor FM Antenna
 • Omnidirectional design improves reception • Adjustable gain control • Amplifies incoming signal by up to 24 times • AC operated • One-year warranty
 Sale Price **\$49⁹⁵** Retail \$89



dbx 400XG
Active Program Route Selector
 • Connect up to 3-tape decks, 3-sound processors, and a noise reduction unit • LED illuminated push button selectors
 Sale Price **\$149⁹⁵** Retail \$299

Audio Specials

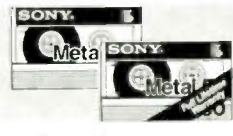


Recolon W-100
Wireless Stereo Speaker System
 • Eliminate the need for room-to-room wires • Enjoy true stereo anywhere you choose • Plug into convenient wall AC outlets
 Sale Price **\$199⁹⁵** Retail \$299



Koss Pro 4/AAA +
New Improved Pro Stereophones
 • Digital ready drivers • Closed ear design • Cushioned ear pads and headband for long wear comfort • Deep tight bass response
 Sale Price **\$38⁸⁸** Retail \$85

Sony Tape Specials



Sony Metal-ES 90
Metal Bias Audio Cassettes
 • Enjoy the finest sound from your stereo cassette deck • Whatever your recording, compact discs, recording, radio or live
 Sale Price **\$38⁸⁸** 10-Pack



Sony UX-PRO 90
High Bias Audio Cassettes
 • The ultimate high bias cassettes from Sony • Clear cassette shell • A professional reference tape designed for digital or live
 Sale Price **\$24⁴⁹** 10-Pack

VHS Video Movies

HAIR

HAMLET

200 MOTELS

THE LAST WALTZ

GREAT EXPECTATIONS

HENRY V

• Odd Man Out
 • Oliver Twist
 • A Night To Remember (1958)

Your Choice Each

18⁹⁵ VHS

Stereo Receiver Specials



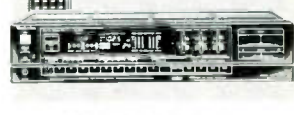
Akai AA-V305B
Stereo Audio/Video Receiver
 • 90 watts channel • Remote • 5-band EQ • 6 presets • Surround sound system • 2-video inputs • Subsonic filter • Black finish
 Sale Price **\$299⁹⁵** Retail \$529



Technics SA-180
Digital AM/FM Stereo Receiver
 • Quartz synthesizer digital tuning virtually eliminates drift • 16-presets • Solid 35 watts per channel with low distortion • 3-LED signal meter
 Sale Price **\$129⁹⁵** Retail \$240



Sansui AUG-77X MKII
Stereo Integrated Amplifier
 • X-balanced amplifier delivers 110 watts RMS per channel • Large LED power level meters • Bi-directional dubbing • MC phono input
 Sale Price **\$349⁹⁵** Retail \$599



Technics SA-R210
Remote Control Stereo Receiver
 • Quartz synthesizer tuner • 40-watts per channel • 30 key wireless AV remote • 2-color display • 24-preset memory • 3-band EQ
 Sale Price **\$179⁹⁵** Retail \$349

HOW TO ORDER BY MAIL: SEND MONEY ORDER, CERTIFIED OR CASHIER'S CHECK, MASTERCARD, VISA or AMERICAN EXPRESS (include card number, Interbank No, expiration date and signature.) TO: J&R MUSIC WORLD, DEPT. HFO588, 59-50 QUEENS-MIDTOWN EXPRESSWAY, MASPETH, NY 11378. DO NOT SEND CASH. Personal and business checks must clear our Authorization Center before processing. \$25 Minimum Order. Shipping, Handling & Insurance Charge is 5% of Total Order with a \$2.95 minimum. (Canadian Orders Add 15% Shipping, with a \$9.95 minimum charge.) For shipments by air, please double these charges. SORRY, NO C.O.D.'s. NEW YORK RESIDENTS PLEASE ADD SALES TAX. ALL MERCHANDISE SHIPPED BRAND NEW, FACTORY FRESH, AND 100% GUARANTEED. WE ARE NOT RESPONSIBLE FOR ANY TYPOGRAPHICAL OR TRANSPOSITIONAL ERRORS.





INVASION OF THE MINI REVIEWS

Backbeat®

*SOMETHING SHORT
HAS TAKEN
POSSESSION OF
THE MAGAZINE.*

Sure, it's fantastic, but it happened. These mini-reviews read like normal reviews, but something's missing: There's no length. Just the pretense of it. The words, the sentence structure, the critics' tone of voice, everything else is the same, but not *the length*. Somebody—or something—wants this miniaturization to take place. Whatever it is—whatever intelligence or instinct it is that can govern the criticism of music in such short order—is fantastically powerful, beyond any comprehension. You musicians, listen to me! Those reviews coming after you—they're not very long! They're after you, all of you, your LPs, your CDs, your videos. A moment's sleep, and the pop or jazz love will be discussed in 150 words or less! There isn't a full-length review left in this month's BACKBEAT. Your album is next! *Don't turn the page!*

ARETHA FRANKLIN:**One Lord, One Faith, One Baptism.**

Ⓢ *Arista AL 8497 (2).*

ARETHA FRANKLIN: 30 Greatest Hits.

Ⓢ *Atlantic 81668-2 (2).*

Thirty-two years ago, a very young Aretha Franklin cut her first live-in-church session. Today, the most successful gospel graduate since Sam Cooke has delivered only her third, a passionate, rich acre of higher ground in a Hall of Fame career. Recorded in her late father's Detroit church, *One Lord, One Faith, One Baptism* is a double-LP documentary of the strongest single influence in American singing, full of breathtaking vocal testimony—a Ward Singers medley (and a finale) with her sisters, earth-rumbling trades with Mavis Staples—and stirring calls from four preachers. For those who want their heaven here on earth, there is the double-CD *30 Greatest Hits* from 1967 to 1974. Both great and hits (14 soul No. 1's), this collection has superb digital sound, clarifying the fat bass, the claps and whoops, and that voice. *Jeff Nesin*

GIL EVANS: Gil Evans and His Orchestra.

View Video 1301. (34 E. 23rd St., New York, N.Y. 10010.)

This is an hour-long 1984 Swiss concert, videotaped with simplicity and intelligence. Dispensing with any self-conscious flourishes, the camera moves into the band, not just focusing on the soloists but showing us where those subtle garnishings, those ethereal flutters and percussive twitters so typical of a Gil Evans arrangement, are coming from. And despite the presence of star players like Billy Cobham and Michael Brecker and gratifyingly flashy improvisers by Howard Johnson and Lew Soloff, the main attraction here is the Evans sound: that blues moan, those sensuous textures. *Richard C. Walls*

GEORGE MICHAEL: Faith.

Ⓢ *Columbia CK 40867.*

George Michael said he broke up Wham! because he wanted his pop to be taken seriously. *Faith* proves that Michael can lay down a catchy groove: The bass/drum bump and grind of "I Want Your Sex" is irresistible, as are the sparse arrangement and body-shaking, hand-jive rhythm of the title track. The overall substance of *Faith*, however, is negligible. "Hand to Mouth" is a whispery throwaway, "Kissing a Fool" is formula jazz, and "Monkey" is perhaps Michael's worst lyrical debacle to date. The CD, which makes no noticeable improvement over the LP, adds the "Shep Pettibone Remix" of "Hard Day" as well as "A Last Request (I Want Your Sex, Part 3)," for those who can't get enough. Michael is a master of the pop hook. Now if he'd just put some meat on it. *John Everson*

INVASION OF THE MINI REVIEWS

JANE IRA BLOOM: Modern Drama.

Ⓢ *Columbia CK 40755.*

Modern Drama is soprano saxophonist Jane Ira Bloom's fourth album, her first for a major label, and it shines because of her sprightly playing and intelligent, varied writing. "Rapture of the Flat" is a parody of '50s rock whose rather idiotic, repetitive triplets Bloom interrupts with an



THEO WESTENBERGER

irreverent blast from her electronically altered horn. "NFL" begins with a whistle and ends with a Sousa-like march. There are more serious pieces, too, such as "More Than Sinatra," an affecting duet between Bloom and pianist Fred Hersch, and "Cagney," what we might call post-modern bebop. The CD sound is sharp yet not without warmth. *Michael Ullman*

THE TEMPTATIONS: Together Again.

Ⓢ *Motown 6246ML.*

RUFFIN & KENDRICK: Ruffin & Kendrick.

Ⓢ *RCA 6765-1.*

Both of these albums unite generations by layering '80s grooves with '60s lyricism. Thanks to smart, sensitive production, they achieve a near perfect balance of heart and stomp, soul and sequencers. Dance tracks don't sound flat-footed, and the slow stuff is mostly dazzling. Though

the songs deal with love in conventional ways, the Temptations and former lead singers David Ruffin and Eddie Kendrick (the former Mr. Kendricks) whip up a vocal hurricane and sweetly overpower formula with some of the finest phrasing in the business. *Havelock Nelson*

JANIS JOPLIN: Janis.

Ⓢ *MCA Home Video 80080.*

Janis Joplin once described performing as being inside oneself and inside the moment. *Janis* preserves incredible moments: her raw energy on "Ball and Chain," her total control on "Tell Mama" (where she sizzles at the start, slows it down, talks over the band, then revs it up again), her almost ecstatic conviction during the finale of "Kozmic Blues," her rapport with Big Brother and the Holding Company during a recording session of "Summertime." It's amazing how well this material holds up 20 years later. The revealing interviews do more than supply biographical information, they show Joplin defining herself. Although this 90-minute film was released in 1974, four years after she died, her death isn't mentioned. *Janis* keeps Janis alive. *Kate Walter*

BUD SHANK/BILL PERKINS QUINTET:**Serious Swingers.**

Ⓢ *Contemporary C 14031.*

Versatile West Coast reedman Bud Shank is teamed here with his old chum Bill Perkins, whose meaty tenor sax provides good contrast to Shank's rangy alto. A tasteful player who always had impressive control, Shank has begun to open up, delivering inspired off-key slurs. Perkins is more deliberate, but he makes his point. *Serious Swingers* has the basic hard-bop mélange of standards and blues, yet the treatment is often fresh: We get an unusual instrumental version of Billie Holiday's "Don't Explain" and an intense in-tempo treatment of Miles Davis's "Blue in Green." Can't fault this one. *Joe Blum*

DUKE ELLINGTON: Anatomy of a Murder.

Ⓢ *Rykodisc RCD 10039.*

The Duke Ellington band was in good form in 1959, when this soundtrack was recorded for the Otto Preminger film starring James Stewart and Lee Remick. Ellington had been revived by his 1956 success at the Newport Jazz Festival, and he wrote a swaggering score rather in the tradition of Henry Mancini's *Peter Gunn* from 1958—but with hipper titles, such as "Upper and Outest," which begins with a strutting walk, moves to a genially melodic section, and ends with Cat Anderson squeaking on trumpet. There's little that's inward about this score: Even Johnny Hodges sounds ebullient, and the band jumps on "Happy Anatomy." The moodiest piece, "Midnight Indigo," is an elegant

ballad that unfolds in a whisper. The CD sound is astonishingly rich and clear.

Michael Ullman

JOYCE SIMS: Come Into My Life.

● *Sleeping Bag CDSB 10.*

Joyce Sims writes plaintive, sultry, kick-butt songs that transcend their dance label. She may not have an exceptional vocal range, but her girlish honey-smacks sound damn good inside her debut's midtempo grooves. "All and All" and "Come Into My Life" are like funk monsters, torturing you slowly: The latter slowburns its way from your feet to your heart, while the former mines your brain cells. "Lifetime Love" is more direct: It stomps on your neck and makes you scream out loud. Murderous.

Havelock Nelson

CLIFTON CHENIER: Sings the Blues.

◎ *Arhoolie 1097.*

Though this is the last Clifton Chenier album released before his death on December 12, 1987, these sides were recorded in one sitting for a couple of Houston indies on April 1, 1969, and subsequently released on a series of singles. And while they don't tell us anything new about the accordion-squeezing king of zydeco, they represent a most welcome addition to his catalog. First, they feature Clifton and a stripped-down version of his band—just guitar, bass, drums, and rubboard—near their mid-Sixties prime. Second, it's one of Chenier's most atmospheric albums: blues, like the title says, but slow blues in particular. There are exceptions, like his stomping take on Fats Domino's "Rosemary" or the jazzy "In the Mood"; there's even, surprisingly enough, a remake of Wilson "Boozoo" Chavis's "Paper in My Shoe," arguably the first commercial zydeco recording and certainly the first real hit the genre produced. Nothing fancy about any of this, mind you, but a whole album of Chenier unwinding on the blues, well, that's something there can never be too much of.

John Morthland

VARIOUS ARTISTS:

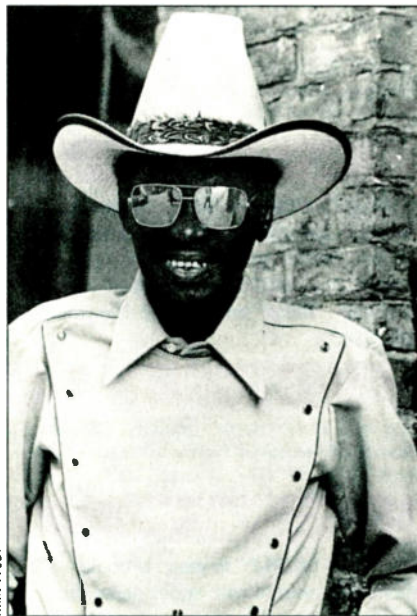
Louisiana Scrapbook.

● *Rykodisc RCD 20058.*

This CD-only sampler offers the cream of Rounder's wonderful New Orleans catalog, if not of the region's music (MIAs include the Preservation Hall Jazz Band, the Neville Brothers, the Radiators, Rockin' Dopsey). You do get some shots of Muscle Shoals soul from Irma Thomas, Johnny Adams, and Walter "Wolfman" Washington as well as Cajun dance music from Beausoleil and the amazing Buckwheat Zydeco. And lots of music that falls between categories, which is what makes so much of this so great. Just what pigeon-hole, for example, does the Dirty Dozen Brass band fit into? The band is represent-

INVASION OF THE MINI REVIEWS

ed by two tracks from its awesome *Mardi Gras in Montreux*. Then there's Clarence "Gatemouth" Brown, usually regarded as a bluesman but showing much more depth than that on his "Song for Renée." Then there's the countrified Cajun of Jo-el Sonnier and D. L. Menard, the Fats Domino/Red Tyler rock of Marcia Ball, and the dual (duel?) electric guitars of Lonesome



KIRK WEST

"Gatemouth": more than the Louisiana blues

Sundown and Phillip Walker. And would an N.O. compilation be complete without "When the Saints Go Marching In"? Tuts Washington does a ragtimey but abridged version, which he manages to jazz up anyway. *Bon temps roulez.* Hank Bordowitz

FAIRPORT CONVENTION:

It All Comes 'Round Again.

Fairport Associates. (163 Joralemon St., Suite 1156, Brooklyn, N.Y. 11201.) Over two decades, British folk-rock band Fairport Convention and its illustrious alumni (among them Sandy Denny, Richard Thompson, and Ian Matthews) have provided a benchmark for other modern interpreters of English and Celtic folk music. To celebrate the band's 20th anniversary, filmmaker Paul Kovit has captured the band's history in a 110-minute video shot in part at last summer's Fair-

port Convention Reunion. Included are a dozen uncut songs, some taken from archive film of early Fairport aggregations, and interviews with current and founding band members, producer Joe Boyd, and biographer Patrick Humphries. Narration tells the band's story, but the music is what makes this a must-have. *Leslie Berman*

CARL PERKINS & FRIENDS:

Blue Suede Shoes: A Rockabilly Session.

◎ *Pioneer Artists PA 87-194.*

The "friends" in this recent pay-TV special include George Harrison, Ringo Starr, Eric Clapton, Dave Edmunds, Rosanne Cash, and Stray Cats Lee Rocker and Slim Jim Phantom, and though all know Carl Perkins's music inside-out, they can't go through the set of 18 vintage songs without excessive self-patting on the back. Perkins, who looks and plays great, promotes an unfortunate clubbiness, exposing a surprising lack of individual personality in the assembled group; only Harrison, who was appearing in concert for the first time in 15 years, seems to be putting his soul into it. The videodisc's best segment is a Sun Records medley where everyone gathers together on stools, the digital sound showcasing each guitar picker to the fullest. *Jim Bessman*

STEVE KUHN: Mostly Ballads.

◎ *New World NW 351-2.*

It's pianist Steve Kuhn's idiosyncratic approach that makes this collection of six solos and six duets (with bassist Harvie Swartz) of special interest. Playing mostly ballads and all standards (pop, jazz, and folk), Kuhn brings a fresh perspective to warhorses like "Body and Soul" and "Round Midnight," devising attractive voicings while studiously avoiding the merely pretty. The danger of such a recital is that in order to ease the weight of attention, the player may resort to novelty—but Kuhn's anti-cliché phrasing is never contrived and always coherent as he sidles into, hovers over, and digs beneath these classic melodies. *Richard C. Walls*

EURYTHMICS: Savage.

◎ *RCA 6794-2.*

As much as I dislike music for robots—as much as I usually dislike Eurythmics—I find myself captivated by *Savage*. The tick-tock of technology remains, but Dave Stewart works a lot of human touches into the mix, be they deep electric guitar or solo acoustic strumming. And Annie Lennox, though still showing off her impeccable vocal technique, gives warmth a chance and, equally welcome, sings bare for a spell. There's dancefloor filler, but the album is worth its price for two excellent pairs: "Shame" and "Savage" explore alienation in dance and dirge while

(Continued on page 69)

HIGH FIDELITY CLASSIFIED

NOW ORDER YOUR ADS JUST BY DIALING: 1-800-ABC MAGS (1-800-222-6247) (between 9 am-4 pm EST.)

MAIL TO: 825 7th Ave., 7th floor, New York, N.Y. 10019. Phone: **1-800-ABC-MAGS.** In New York call (212) 887-8458. **GENERAL:** all copy subject to publisher approval. Users of P.O. Box MUST supply permanent address and telephone number before ad can run. **CLOSING DATE:** 1st of second month preceding cover date. **15 Word minimum.** No charge for Zip Code. **CLASSIFIED RATES:** regular type per word: 1x—\$2.75, 3x—\$2.65, 6x—\$2.55, 12x—\$2.45. Words in caps—15¢ extra each. **IMPERIAL type, per word: 1x—\$3.75, 3x—\$3.65, 6x—\$3.55, 12x—\$3.45.** **Words in caps—15¢ extra each.** Minimum 15 words. Box numbers \$3.00 additional per insertion to cover cost of handling and postage. Display, per inch: 1x—\$350, 3x—\$340, 6x—\$330, 12x—\$315. **PAYMENT WITH ORDER:** Send check, M.O., MASTERCARD or VISA. No. and expiration date to: Maria Manasari, Classified Dept., HIGH FIDELITY, 825 7th Ave., 7th Floor, New York, NY 10019.

AUDIO/VIDEO SPECIALTY SHOPS

AUDIOPHILE'S/VIDEOPHILE'S! We have the widest selection of audio/video equipment available. Adcom, Infinity, Harmon Kardon, Kyocera, JVC, Video, Canton, Klipsch, Luxman, Sony, ES, Yamaha, Ni-C. Call for information. **CONTINENTAL SOUND**, 98 77 Queens Blvd., Rego Park, NY 11374. (718) 459-7507. Immediate delivery. MC/VISA/AMEX/DISCOVER.

BUSINESS OPPORTUNITIES

START YOUR OWN SPEAKER COMPANY IN YOUR garage. It's easier than you think. Our advice is free. AMS Enterprises, 1007 Capello Way, Ojai, CA 93023.

INTERESTED PROFIT PRODUCING ADVERTISERS? Get FREE INFORMATION on rates and how to create your own classified ad, similar to those on these pages. TOLL FREE 1-800-222-6247 or 212-887-8458.

GET PAID for reading books! Write: Ace-X03, 161 Lincolnway, North Aurora, IL 60542.

HUNDREDS EXTRA WEEKLY for instruction and computer list of companies needing home workers. Send \$2.00. SASE to: MPC, P.O. Box 1430, Palm City, FL 34990.

BOOKS/PUBLICATIONS

HIGH FIDELITY—BACK ISSUES only \$3.00 each (including postage & handling) \$24.00 for complete years (1981 to 1986 inclusive). Prepaid only. Back Issues Dept., 825 Seventh Avenue, 8th Floor, New York, NY 10019.

COMPACT DISCS

COMPACT DISC—at low warehouse prices. Now in our fourth year. Over 6,000 titles available. Free Catalog plus regular updates and monthly specials starting at \$10.99. OZ Warehouse, 1575P Hwy. 29 Lawrenceville, Ga 30244.

low COMPACT DISC prices—LARGE inventory—mini-Catalogs \$1—DUWARS, PO BOX 6662-F GREENVILLE SC 29606

WE'VE SLIPPED OUR DISC PRICES TO FIT your budget, prices start at \$8.99! Write; Laser Locker Box 8611 Somerville, N.J. 08876.

CASH FOR CDS NOW PAYING \$5.00 \$8.00 PER DISC. Send immediately call or write for details. Moles CDX, 249 E. Main Street, Columbus, OH 43209 (614) 231-1701

MAGNAVOX CD PLAYERS TRADES WELCOME CDB650 \$309.00, CDB470 \$169.00, CDB471 \$179.00, CDB472 w/ remote \$219.00, CDB473 Deluxe \$269.00. Digital Sound Distributors (219) 626-2756.

PROTECT, ORGANIZE YOUR CD's & CASSETTES Handmade, Solid Wood Cabinetry, CWCDC, P.O. Box 747D, Nutley, N.J. 07110, (201) 759-4939.

CABLE TV

CABLE TV CONVERTERS. Scientific Atlanta, Jerrold, Oak, Zenith, Hamlin. Many others. "NEW" VIDEO HOPPER "The Copy Killer". Visa, M/C & Amex 1-800-826-7623. **B&B INC., 10517 Upton Circle, Bloomington, MN. 55431.**

CLUBS/SINGLES

CLASSICAL MUSIC LOVERS' EXCHANGE. Nationwide Link Between Unattached Music Lovers. CMLE, Box 31, Pelham, NY 10803.

ELECTRONICS

"STEREO WORLD" is your discount mailorder source with super deals on Audio/Video & Car Stereo. Lines like: Magnovox, JVC, TEAC, AIWA, Technics, Pioneer, Uniden, Zenith, Sennheiser, Pinnacle, TDK, Maxell, Panasonic. Car Stereo: Pyle, Clarion, Sherwood, Philips, Blaupunkt, Denon, Sony, Pioneer, Kenwood, Precision Power Amps, Mitsubishi, Panasonic & more! Call or write for FREE catalog! Call for closeout specials! FREE shipping each order! P.O. Box 709, Edison, NJ 08818. 201-494-0099, M-F till 6:00 pm., Wed. till 9:00. C.O.D. accepted.

EQUIPMENT FOR SALE

CABLE TV

Converters / Descramblers GUARANTEED LOWEST PRICES IN U.S.

Jerrold, Hamlin, Zenith—Many Others! Lowest Dealer Prices! Orders shipped within 24 hours! Complete FREE illustrated catalog, MasterCard-VISA-COD accepted
PACIFIC CABLE CO., INC. (800) 345-8927
7325 1/2 Reseda Blvd., #819 Reseda, CA 91335

DISCO LIGHTING, DJ SUPPLIES, EFFECTS AT wholesale prices. Send \$1.00 for catalog. P.O. B. 20395, Bowling Green, KY 42101.

MISCELLANEOUS

IS IT TRUE? JEeps FOR \$44 THROUGH THE GOVERNMENT? Call for facts! 1-312-742-1142 Ext. 4671

FOR SALE

ORDER: 1-800-622-HIFI (4434), NAKAMICHI, YAMAHA, KYOCERA, DENON, HARMAN KARDON, JBL, NAD, CARVER, DBX, MISSION, LUXMAN, KEF, ADCOM, ONKYO, B&O. Manufacturers USA warranty, factory fresh, 15%-35% off list. Tax free (except Wash. Res.). Most equipment received within 2-7 days. 7 day defective exchange. VISA/MC, Discover, Diners, Amex, COD. Warranty information, service or order, please call: 1-206-747-9999, TASKAMICHI AUDIO.

BANG & OLUFSEN FULL LINE, ADS, B&W AND BOSE SPEAKERS AND OTHER QUALITY PRODUCTS AT REASONABLE PRICE, SOUNDCREST, INC., (201) 756-4858

FACTOR ORIGINAL DIAMOND NEEDLES & PHONO CARTRIDGES. MOST POPULAR LINES AT DISCOUNT PRICES. FOR FREE CATALOG SEND SELF ADDRESSED STAMPED ENVELOPE. LYLE CARTRIDGES, DEPT. H BOX 158, VALLEY STREAM, NY 11582. CALL TOLL FREE (800) 221-0906, N.Y. (516) 599-1112. VISA/MC.

CALL US LAST !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Shop around, Get your best price, Then call THE SOUND APPROACH. Guaranteed LOWEST PRICES on all HOME and CAR STEREO. Factory fresh, Fully warranted. For FAST DELIVERY and GUARANTEED LOWEST PRICES, call THE SOUND APPROACH, 6067 Jericho Tpke., Commack, New York, 11725 (516) 499-7680. Visa/MC/Amex.

HIGH FIDELITY CLASSIFIED

PROTECT YOUR LPS

Poly sleeves for jackets 13¢ Poly sleeves for records 8¢
 Polylined paper 17¢
 Cardboard Jackets 50¢
 Postage \$2.50
 House of Records P.O. Box 323, Hillburn, New York 10931

SOUNDTRACKS, SHOW, NOSTALGIA & JAZZ—SEND your want list—A-1 Record Finders, P.O. Box 75071-H, L.A. CAL 90075

SHOW ALBUMS—Rare, out-of-print lps 64-page list \$1.00
 Broadway-Hollywood Recordings Georgetown, CT 06829

AMPEX OPEN REEL TAPE-USED ONCE; 1800' or 2400' in new boxes-12 Reels: \$25.00 (post paid). Sample: \$2.50. TEN 3600' 10 1/2" REELS: \$42.50. SAMPLE: \$4.50. New High-Bias cassettes: Sample: \$1.25 AUDIO TAPES, Box 9584-T Alexandria, VA 22304. (703) 370-5555. VISA/AMC.

FROM EDISON TO ELVIS (AND BEYOND) LP's, 78's, 45's, etc. Visit or mail in wants The Olde Tyme Music Scene, 915 Main Street, Boonton, NJ 07005 201/335-5040—Tuesday thru Sunday

FREE CASSETTE CATALOG! over 7,000 titles CHEAPEST PRICES ANYWHERE! No Canadian orders Music By Mail, Box 090066, F1 Hamilton Station, Brooklyn, N.Y. 11209-0002

FIND THAT ELUSIVE RECORD/TAPE you've always wanted Current, NATIONWIDE DIRECTORY OF SPECIALTY RECORD OUTLETS has hundreds of listings keyed by specialization and location Send \$6.50 to Ludwig Enterprises, Dept. H, Box 400759, Brooklyn, NY 11240-0759 NYS residents add sales tax

RARE CLASSICAL AND JAZZ 250,000 LP's The Record Collector, 1158 N Highland, Los Angeles, CA 90038 (213) 467-2875

IN PRINT & OUT OF PRINT RECORDS ALL CATEGORIES & nostalgia video tapes Spectacular Catalog! \$2.00 USA \$4.00 Foreign Serendipity Records, 4775 Durham Road, Guilford, CT 06437 USA

JAN DeGAETANI & LUCY SHELTON
Songs of Warren Benson - NEW CD! \$16.98.
Catalog Free. GASPARO RECORDS, P.O.
Box 120069, Nashville, TN 37212. (615) 254-8460.

FREE RECORD, CASSETTE AND COMPACT DISC CATALOG: Features a tremendous selection of remastered LP and cassette values in all musical categories. Compact disc, cassette and LP new releases at discount prices. Many imports and smaller labels offered Prompt delivery Rose Records, Dept. H, 214 South Wabash Avenue, Chicago, IL 60604

SEARCHING FOR OUT-OF-PRINTS? Try for Discontinued Records, 444 South Victory, Burbank, California 91502 (213) 849-4791

LIVE OPERA TAPES, CASSETTES Incredible selection Free Catalogue, Live Opera, Box 3141 Steinway Station, L.I.C., NY 11103

OLD TIME RADIO PROGRAMS Classic broadcasts on high quality tapes Mystery! Adventure! Comedy! Music! Free catalogue Carl Froelich, 2-H Heritage Farm, New Freedom, Pennsylvania 17349

JAZZ VIDEO, RECORDS & BOOKS—Ellington, Condon, Gillespie, etc. Free Lists! Jazzland, Box 366, Dayton, OH 45401

SOUND OF NAKAMICHI REFERENCE CASSETTES Individually duplicated in Real-Time on the finest TDK Metal Tapes from the finest analog and digital masters SOUND OF NAKAMICHI REFERENCE CASSETTES, the only challenge to the Compact Disc. Labels represented TELARC, A&M, DELOS, SHEFFELD LAB, GOOD VIBES, & GRP All titles are available in Dolby B or Dolby C. For a catalog or more information contact PACIFIC CASSETTE LABORATORIES P.O. Box 6248-HF Torrance, CA 90504 (213) 618-9267 Dealer inquiries welcome

WANTED AUDIO FILE ALBUMS! Mobile Fidelity, Nautiles, CBS Master Sound, Japanese, Direct-to-Disc etc. Chad, Box 2043, Salina, KS 67402-2043, 913-825-8609.

22,000 LP ALBUMS & 1450 78 RPM SETS FOR SALE Send Wants Lists Bernstein, Pine Valley Road, Oyster Bay, NY 11771

GOLDEN CREST AND CREST LABELS can now be obtained from CREST MUSIC, INC., 11B South Gold Drive Robbinsville, NJ 08619 (609) 587-1988

FREE CD/RECORD OFFER! FREE CATALOG! "World's Best Brass Catalog" (Fanfare). CRYSTAL RECORDS, Sedro-Woolley, WA 98284.

THIS IS IT! THE ORIGINAL SOUNDTRACK FROM THE Addams Family In full stereo Brand new freshly stamped from the original master and packaged in the original album cover To order this collector's item, mail \$10.00* (check or money order) plus \$2.00 for shipping and handling (\$4.00 for Canadian and foreign orders) to REC AL RECORDS, SUITE 146, 324 MAIN AVENUE, NORWALK, CT 06851 *Connecticut residents please add 7.5% sales tax

VIDEO TRANSFER

OVERSEAS VIDEOTAPES CONVERTED AMERICAN DIGITALLY. Viceversa Also duplication Multi-system Videorecorders discounted 1-800-626-8776, (718) 507-5800 APPLE LABS

Look What's New!

High Fidelity's CAR AUDIO

1988

Featuring: Lab & road tests
 Buyers guides
 Expert Advice
 New & future products
 ... and more

On Sale: May 3, 1988
 Call: 1-800-ABC-MAGS
 212-887-8458

VISA, MASTERCARD, DISCOVER,
 AMERICAN EXPRESS CARDS WELCOME



120 W. 31 St. (bet. 6th & 7th Ave.)
 N.Y., N.Y. 10001
CALL TOLL FREE 800-223-7323
 IN N.Y. STATE CALL 212-947-5290

RECEIVERS

YAMAHA
 RX-300 37 Watt P/C 228.00
 RX-700 75 Watt P/C w/Remote 399.95
 RX-900 85 Watt P/C w/Remote 540.00
 RX-1100 125 Watt P/C w/Remote 700.00

HARMON KARDON
 hk-795I 75 Watt 670.00
 hk-495I 45 Watt 389.90
 hk-385I 35 Watt 270.00

PIONEER **DENON**
 VSX-5000 CALL DRA-25 230.00
 VSX-4000 CALL DRA-35 250.00
 VSX-3000 CALL DRA-55 320.00

JVC
 RX-950 530.00 RX-750 420.00
 RX-450 230.00 RX-350 250.00

TAPE DECKS

NAKAMICHI
 CR-1A 349.00 CR-2A 415.00
 BX-125 410.00 RX-505 CALL

YAMAHA **DENON**
 KXW-500 388.90 DRM-10HX 245.00
 K-540 299.90 DRM-14HX 310.00
 KXW-900 440.00 DRM-12HX 279.00

HARMON KARDON
 TD-202 335.00 CD-491 790.00
 TD-302 379.00

CD PLAYERS

DENON **YAMAHA**
 DCD-1500H 549.00 CDX-1100 860.00
 DCD-800 310.00 CDX-900 CALL
 DCD-600 CALL CDX-700 349.00

PIONEER
 PDM-70 CALL PDM-600 CALL
 PDM-50 CALL PD-4050 CALL

SEPARATES

YAMAHA AMPS.
 AX-400U 55 Watt P/C 200.00
 AX-700U 110 Watt Class A 369.90
 AX-900U 170 Watt Class A 479.90

ADCOM
 GFA-555 200 Watt Amp 589.90
 GFA-545 100 Watt Amp 429.90
 GFP-555 Pre-Amp 420.00
 GFT-555 Tuner 259.00

PORTABLE CD PLAYERS

SONY D-10 Disc Player 249.95
 SONY D-3 Disc Player 169.90
 SONY DT-3 AM/FM Disc Player 199.90
 TOSHIBA XR-9437 Disc Player 249.90
 PANASONIC SLNP-P10 Disc Player 229.90

VIDEO SPECIALS

JVC HR-S7000U Super-VHS Hi-Fi 849.90
 ZENITH VRD-700U Super-VHS Hi-Fi 839.90
 RCA VPT-695HF Super-VHS Hi-Fi CALL
 RCA-640HF Super-VHS Hi-Fi CALL
 RCA-CPR-350 S-VHS Camcorder CALL
 CANON HF-800 Hi-Fi CALL
 PANASONIC PV-4780 VHS Hi-Fi 799.90
 PANASONIC PV-M2027 Combo VCR/TV CALL
 MAGNAVOX 9244 S-VHS Camcorder CALL
 MAGNAVOX 9260 S-VHSc Camcorder CALL

WRITE FOR
FREE
VIDEO CATALOG
 INCLUDES
 CAMERAS
 DARKROOM
 COMPUTERS
 ELECTRONICS
 & TELEPHONES

Licensed By Dept. of Consumer Affairs #800193
 Shipping & Handling Extra
 Call For Exact Quote
 Not Responsible For Typographical Errors

(Continued from page 65)

"I Need a Man" and "I Need You" explore desperation in amusing rock and nightmare folk. CD and LP have the same tracks and precise sound; the former does offer extra photos. *Ken Richardson*

GLADYS KNIGHT & THE PIPS:

All Our Love.

⊙ MCA 42004.

With six different production teams struggling to keep the prefab glitz in check, *All Our Love* shouldn't cohere as well as it does, but then again Gladys Knight's great overlooked gift is her ability to find unlikely resonances in everyday schlock. Except for the shapeless "Say What You Mean," every song here glows under her lavish vocal attention, especially the way her patient phrasing works against the Pips' choral singing on "Let Me Be the One," "It's Gonna Take All Our Love," and "Overnight Success." And though the emphasis on slow-to-mid tempos befits the graceful aging of one of r&b's most reliable vets, two side-opening funky metaphors provide some welcome locomotion: "Complete Recovery" and the hit "Love Overboard." *Mark Moses*

ROBYN HITCHCOCK & THE EGYPTIANS:
Globe of Frogs.

⊙ A&M SP 5182.

With *Globe of Frogs*, Robyn Hitchcock continues to vent his vivid cartoon vision of humans as absurd animals who search for the sublime, though stuck in the slime. Musically, the album mates the simplicity of *Black Snake Diamond Role* with the glossy production of *Element of Light*, which makes for a happy wedding indeed. Whether it's jangly silliness ("Balloon Man"), savage sexuality ("Sleeping with Your Devil Mask"), or bittersweet nihilism ("Flesh Number One"), Hitchcock lines his tunes with more hooks than a coat rack. The most exotic songs (like "Chinese Bones" and the title track) lay tiny eggs under your skin and infect you later. Either way, the album is unshakable. One complaint: At 36 minutes, it's too short.

Andrew Nash

MICHELE ROSEWOMAN: Quintessence.

⊙ Enja 5039-22. (Muse.)

Michele Rosewoman is a highly talented pianist with Afro-Cuban roots whose playing is as visceral as her writing is abstract. She favors carefully engineered, angular themes with irregular phrasing—probably not all that easy to play, but her outstanding young musicians do a bang-up job of following each road. The end product is too offbeat to be mainstream yet quite easy to listen to: futuristic bebop mutations, gnomish Monk-like meanderings, meditations on African deities. Rosewoman will shake you up. *Joe Blum*



VAN MORRISON: In Ireland.

⊗ Hendring HEN 2-061. (Jem.)

As you'd expect from one of the least image-conscious stars in all of pop, *Van Morrison in Ireland* looks a bit slapdash, from the obligatory on-location shots of the band on the bus to the often hazily lit photography. Filmed in Belfast and Dublin in 1979 after the release of 1978's unremarkable *Wavelength*, the hour-long videotape nonetheless captures the always arresting singer and a big, loose-limbed band working through surprisingly detailed versions of some of Morrison's most indelible material: "Moondance," "Gloria," the reluctant catharsis of "Cyprus Avenue." Just as impressive, the dark stabs of Morrison's singing and the rich weave of horns and violin make some of the minor compositions stand up to their betters. Special treat: John Lee Hooker's "Don't Look Back," dragged back from Morrison's days with Them, given the sweet, melancholy edge of a lost '50s ballad. *Mark Moses*

THE POGUES:

If I Should Fall from Grace with God.

⊙ Island 90872-1.

DE DANNAN: Ballroom.

⊙ Green Linnet SIF 3040.

The Pogues' first two albums, released in '84 and '85, were a breath of fresh air in a limp folk scene that threatened to go the way of New Age. On their third album, Shane MacGowan is still writing urban chanteys that sound like instant Celtic standards, but the band's punk/folk attack is starting to incorporate more dramatic flourishes and quieter, acoustic leanings. More problematic is Steve Lillywhite's busy barroom production, which frequently threatens to overpower the melodies. And even with the Pogues, the beauty of this music lies in its simplicity—proven here by the saloon-song-flavored "Fairytale of New York" and by "Thousands Are Sailing," an embittered tale of

Irish immigrants that makes *The Joshua Tree* sound knock-kneed by comparison.

Next to the Pogues, Dublin's De Dannan are starting to sound like the stately old Chieftains. *Ballroom* has the familiar blend of mournful ballads with calm jigs and reels. Dolores Keane isn't as stirring as earlier singer Maura O'Connell, but she displays her mettle on the likes of this album's unrequited-love song, "Teddy O'Neill." And the fact that Frankie Gavin's fiddle and Martin O'Connor's remarkably buoyant accordion are still up-front demonstrates that De Dannan never forget they're a party band. So even if *Ballroom* doesn't approach the group's milestone 1981 LP, *The Star Spangled Molly*, it shows that, unlike the Chieftains, they can still kick out the jams. *David Browne*

RICK SPRINGFIELD: Rock of Life.

⊙ RCA 6620-1.

Yes, Rick Springfield. Don't laugh: This is a pretty good record. "There comes a time when the boy must leave/And the man has to enter," and he does, with a daring single ("Rock of Life"), a provocative subject ("Honeymoon in Beirut"), and mature riffs, melodies, and guitars all over the place. Plus a fine cover of the Small Faces' "(If You Think You're) Groovy." Lyrics are sometimes juvenile, and a few songs are carbon copies, but when Springfield sings in the title cut, "I was caught with my guard down/When the world came knocking," roaring out the last word with shock and rage, you know he's determined to break ground, to make the rock of his life. They used to laugh at John Cougar, too, before he went to Mellencamp.

Ken Richardson

METAMORA: Morning Walk.

⊙ Windham Hill WH 1068.

Metamora performs distinctive European-style folk tunes with a refined, natural earthiness. Malcolm Dalglish's hammer dulcimer sparkles throughout, and the fiddling of Pete Sutherland and Gary Larsen is always just resonant and raw enough to give it the distance of timelessness. Piano, guitar, woodwinds, and concertina complete the arrangements, with subtle dashes of synthesizer that add bass depth. The trio's original compositions are so well grounded that the traditional Norwegian and Belgian numbers blend in seamlessly. The digital recording reveals every iota of the performance. *Richard Price*

VARIOUS ARTISTS: No Age.

⊙ SST 102 (2).

Leave it to SST—the Southern California indie label founded by Black Flag and once home of Hüsker Dü—to spoof the musical wallpaper of the '80s. But this double-album compilation of 19 instrumentals by 15 artists is a parody in title

FORMAT KEY

- ⊙ LP/EP
- ⊗ Videocassette
- ⊠ Cassette
- ⊕ Videodisc
- ⊙ Compact Disc

only. From the crafty art rock of Elliott Sharp, Glenn Phillips, and Scott Colby to the crude guitar thrashings of Blind Idiot God and Universal Congress Of, it's packed with crisp, inventive music-making. That may not sound like the SST of old, but don't worry: *No Age* has nothing to do with suave musicianship or tasty licks. Instead, Lawndale takes surf music into the Persian Gulf, Pell Mell is Duane Eddy on acid, and Black Flag sans lead singer Henry Rollins becomes a careening metal band. On their own full-length albums, some of these bands sound overindulgent; taken in small doses, it's easier to appreciate their brand of inspired noise.

David Browne

TRAFFIC: Live at Santa Monica.

RCA/Columbia Pictures Home Video
 Ⓜ 60729.

Probably released for the wrong reasons (Steve Winwood is hot in the '80s), this video is a find nonetheless. Performing eight stretched-out songs in just over an hour, this early '70s sextet is Traffic at its jazziest ("The Low Spark of High Heeled Boys," "Light Up or Leave Me Alone"), but a folk side is also amply displayed ("John Barleycorn," "Forty Thousand Headmen"). Most interesting to watch are long-haired Winwood, unassumingly skilled on every guitar and keyboard in sight, and mood-setting flute/sax man Chris Wood (who died in 1986). The band's unique sound stands up well: Occasional feedback and inevitable psychedelic camera tricks (for the meandering coda to "Glad") aren't bad enough to detract from this fascinating bit of history.

Andrew Nash

LIZA MINNELLI: At Carnegie Hall.

Ⓜ Telarc CD 85502 (2).

This is about as subtle as a Macy's Thanksgiving Day Parade—but so full of brassy good cheer that it's hard to resist. Liza Minnelli isn't exactly an imaginative singer: She avoids jazz improv like the plague and rarely succeeds in any ballad that approaches complicated reflection. Yet this album glories in what she herself calls her "socko-batho-pow," an actor's attitude that inspires her to joyously punch out phrases. Recorded live after a well-publicized stint at the Betty Ford clinic, the Broadway repertoire is all about survival; even at forty-two, Minnelli still seems that scrap of a kid hanging on by the skin of her teeth. But put her next to the big ones ("Alexander's Ragtime Band," "Some People") and she can belt anyone off the block. What becomes the legend most, however, is her finale: With a voice that could topple Trump Tower, she does for "New York, New York" what Whitney Houston does for Diet Coke: sells it hook, line, and sinker. Pamela Bloom

INVASION OF THE MINI REVIEWS

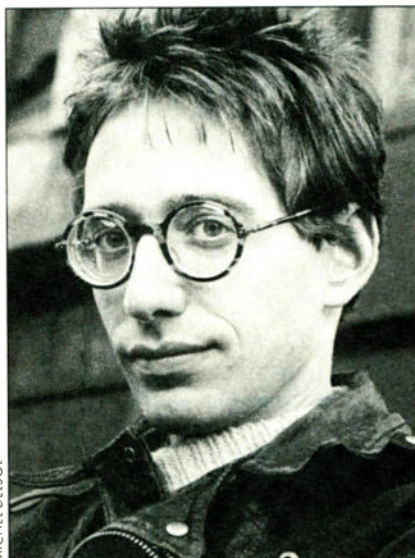
JOHN ZORN: Spillane.

Ⓜ Elektra Nonesuch 79172-2.

WAYNE HORVITZ: This New Generation.

Ⓜ Elektra Musician 60759-2.

John Zorn and Wayne Horvitz are two of the many young genre-straddling composers whose work encompasses a wide enough variety of attitudes and components to frustrate any mini-review writer. Zorn, on *Spillane*'s title piece, assembles a disjunctive montage, alternating fictitious music—snippets that seem to be in quotes,



MICHEL DELSOL

Zorn: disjunctive, detached, and fascinating

like "honky-tonk," "cocktail jazz," "film noir score"—with more impressionistic takes on the Spillane oeuvre. It's a fascinating mix, though the constant interruptions act as a distancing device; a similar method becomes more amenable on a 12-section blues feature for guitarist Albert Collins, "Two-Lane Highway." Horvitz shares with Zorn a certain ironic detachment, but where Zorn means to jump-start your brain, Horvitz aims to wallpaper it. His 15 pieces are mostly simple, even wistful melodies dressed in *neuvo* textures and scintillating rhythms. Richard C. Walls

LYLE LOVETT: Pontiac.

Ⓜ MCA 42028.

As with labelmate Nanci Griffith, Lyle Lovett hails from Texas and sings in a supple twang. Also like Griffith, Lovett is

hardly the honky-tonker his publicity claims: With his unassuming manner and milquetoast arrangements, he's a singer/songwriter with country aspirations, making him an heir to Steve Goodman, Jesse Winchester, and other '70s folkies. There's nothing wrong with that; on his second LP, Lovett can spin a decent yarn ("Pontiac," about an off-kilter World War II vet) or sing purty ballads ("I Loved You Yesterday"). But truth in advertising it's not, and the polite production is new traditionalism at its blandest. David Browne

MARY CHAPIN CARPENTER:

Hometown Girl.

Ⓜ Columbia BFC 40758.

Washington, D.C., is hardly more of a hangout for cowboys than the aptly named "What's-that-smell," New Jersey, whence cowgirl Mary Chapin Carpenter purports to hail. But it's been a convivial home for her brand of lengthy story songs, charged with the best of new country. From road tales to suburban and small-town love songs, Carpenter's warm alto floods her own ballads and hook-filled tunes with reverence and passion. This LP is certainly a debut, with its rite-of-passage material and reworking of the traveling-singer's autobiography. But Carpenter is saved from sounding like similar folk-to-country crossovers by the lyrical, self-deflating characterizations that breathe realism into her interpretations of even overworked themes. Leslie Berman

JOE WILLIAMS: Every Night.

Ⓜ Verve 833 236-2.

Joe Williams has a big voice and a big heart, and when conditions are right, his singing is like a great big smile. Conditions are right with this entry in Verve's "Live at Vine St." series: A raconteur who speaks directly to his audience, Williams is at his best in live performance, and the hip arrangements by accompanist nonpareil Norman Simmons set him off to great advantage (as does Henry Johnson's solid guitar). Williams is an authentic blues singer who pays tribute to Joe Turner and Jimmy Rushing, yet he also deals authoritatively with jazz standards and ballads: Eubie Blake's "A Dollar for a Dime" and, on CD only, Duke Ellington's "Don't You Know I Care." Joe Blum

DANIEL PONCE: Arawe.

Ⓜ Antilles/New Directions 90631-2.

Cuban-born Daniel Ponce is the kind of percussionist who has more sensitivity in his fingertips than some *congueros* have in their whole hand. In his second release, you can hear his contrapuntal commitment to texture, timbre, and space, yet he never drops his *clave*, preferring to play with passionate intelligence between the cracks. Written in collaboration with key-

boardist Steve Sandberg, *Arawe* trades in the bruntest of Afro-Cuban beats, at the same time staking ground in pop, jazz-funk, and disco. Even more than a display for Ponce, the album generously features soloists who let loose like they've been waiting lifelong to play: guitarist Vernon Reid, saxophonist Rolando Briceño, and Yomo Toro, whose steel-stringed cuatro adds a Middle Eastern flavor to the hot-crossed brass. *Pamela Bloom*

MANHATTAN TRANSFER: Brasil.

Ⓞ *Atlantic 81803-1.*
As always, this is a well-produced showcase for Manhattan Transfer's stellar four-part harmonies. But *Brasil* is also a welcome departure after ten LPs filled with doo-wop, vocalese, and jazzy pop: Cast against writers, arrangers, and musicians from Brazil, the quartet's patented slickness sounds more spontaneous. The group is seductive and mysterious on Gilberto Gil's "Hear the Voices" and Ivan Lins's "Metropolis," playful and funky on Djean's "The Zoo Blues" and "Soul Food to Go." And though fluent in Portuguese on "Capim," the group wisely favors English translations—better to convey the convictions of, say, "The Jungle Pioneer," Milton Nascimento's plea to save the forests.

Kate Walter



SQUEEZE: Squeeze Play: The Videos.

Ⓞ *A&M Video 1716.*
Living in the urban jungle amidst the bloodthirsty graft-seekers, I don't have my MTV (blessed be), so except for bits of the surreal, persistence-of-video "Hourglass," I had not seen a Squeeze videoclip before viewing this collection of 13 titles covering the years 1978–87. More often than not, these are performance clips, with little or no conceptual content. That is not to say there isn't some subtle humor, like "Up the Junction" being performed in a kitchen or "Another Nail in My Heart" showing Jules Holland pushing a piano through the streets, only to arrive on the set in time for the closing arpeggio. Early experiments, such as the grainy, distorted "Is That Love," left me wondering, "Is that art?" Then again, two live entries, "Pull-

ing Mussels from the Shell" and "Messed Around," prove the band is as animated in concert as it is wooden in the studio footage. Except for those live tracks and "Hourglass," most of *Squeeze Play* is better heard and not seen. *Hank Bordowitz*

LENI STERN: The Next Day.

Ⓞ *Passport Jazz PJCD 88035.*

BILLY COBHAM: Picture This.

Ⓞ *GRP GRD 9551.*

The time when one instantly knew what was meant by the word "fusion" has passed: The genre has subdivided and extended itself enough that the term is due for a little refinement, if not a rest. Leni Stern, for example, plays fusion-by-association, being an electric guitarist recording for a label that specializes in the stuff. In fact, *The Next Day* is a straightahead jazz set with acoustic rhythm and tenor sax, Stern's tart, single-note style swinging against a low-key mood. Drummer Billy Cobham foils expectations, too, painting with a wider range of colors than on his past LPs and avoiding many of those fusion arrangement clichés he helped popularize. Both CDs have fine sound, with the particularly lucid quality of the Cobham allowing the listener to wallow in the happy burbles of his well-thought-out, undemanding music. *Richard C. Walls*

A D V E R T I S I N G I N D E X

Many advertisers will send you additional product literature free of charge. Write them care of Dept. 5/88, unless otherwise noted, at the address below. If no address appears, literature is available only through dealers. Bold-face numbers by company names are page numbers for ads in this issue.

Advent (2)

4138 North United Parkway
Schiller Park, IL 60176
1/800 323-0221
ATTN Dept. HF 5/88

B&W Loudspeakers (12)

Misobanke Int'l Inc.
P.O. Box 653
Buffalo, NY 14240
416 297 0595
ATTN Dept. HF 5 88

Carver Corporation (20, 21)

P.O. Box 1237
Lynnwood, WA 98046
206 775-1202
ATTN Dept. HF 5/88

Executive Photo (68)

120 W 31 Street
New York, NY 10001-3805
212 947 5290
ATTN Dept. HF 5 88

Illinois Audio (28)

12 E Delaware Place
Chicago, IL 60617
1-800-621-8042
In IL 312 664-0020
ATTN Dept. HF 5 88

J&R Music World (58, 59)

23 Park Row
New York, NY 10038-2302
212 732-8600
ATTN Dept. HF 5 88

Pioneer Electronics (Cov II, 1)

2265 E 220th Street
Long Beach, CA 90810
213 835-6177
ATTN Dept. HF 5 88

Polk Audio (10, 11)

5601 Metro Drive
Baltimore, MD 21215
ATTN Dept. HF 5 88

Proton (33)

737 West Artesia Boulevard
Compton, CA 90220
213 638-5151
ATTN Dept. HF 5 88

Shure Brothers (16)

222 Hartrey Avenue
Evanston, IL 60202
312 866-2200
ATTN Dept. HF 5 88

Sony Corporation (9)

Sony Drive
Park Ridge, NJ 07656
201 930-6000
ATTN Dept. HF 5 88

Toshiba America, Inc. (8)

82 Totowa Road
Wayne, NJ 07470
201/628-8000
ATTN: Dept. HF 5 88

Wisconsin Discount Stereo (56)

2417 W. Badger Road
Madison, WI 53713
1-800-356-9514 or
608 271-6889
ATTN: Dept. HF 5 88

Yamaha Electronics Corp. (Cov 4)

6660 Orangethorpe Avenue
Buena Park, CA 90620
714 522-9105
ATTN: Dept. HF 5 88

For people who love music as much as they love their car.

If you love music, you won't settle for the inaccurate, inadequate sound of so many factory-installed systems. And if you love your car, you want to enhance it. You'd never do anything to compromise its looks or reduce its resale value. Like re-work the entire dashboard just to install a receiver. Or put up with a trunk that looks like an electronics store.



A DENON RECEIVER MATCHES THE DASH SO WELL, IT LOOKS LIKE ORIGINAL EQUIPMENT.

At Denon, we feel the same way. That's why Denon speakers fit most cars without tedious modifications. Denon amps make even sophisticated multi-channel systems simple. Denon receivers all have DIN-E chassis so they install with a minimum of disruption. You can mount them permanently or pull them out to protect both your system and your car from Midnite Auto Inc. For a modest additional cost, the receiver lights can even be matched to



THE DCR-5520, LIKE ALL DENON RECEIVERS, HAS CONTROLS YOU CAN IDENTIFY BY TOUCH.

the color of your dashboard lights. So instead of clashing with your car's interior, a Denon system integrates seamlessly.

Of course, we never forget that superior performance is the only attribute that makes high-end car audio worth the money.

That's why we endow our car audio with such advanced technologies as the Denon Optimum Reception System to tailor FM tuning to the reception conditions. Or our Dynamic Expansion to restore

that most car stereos seemed to have been designed by people who took the bus to work. Well, Denon's designers fortunately drive to the office. The DCR-7600's controls fall into logically related groups: Tape functions along the bottom, tuner and to the left of the display and tape slot, tuner and along the right edge of the display.

In terms of sheer sound quality, Denon car audio fully lives up to the standards set by Denon record production, Denon pro studio recorders and



THE DENON DCA-3500 INCLUDES FRONT AND REAR STEREO AMPS, AN ELECTRONIC CROSSOVER AND A SUBWOOFER AMP - WITH ROOM LEFT OVER FOR LUGGAGE.

depth and vibrancy to compressed broadcasts and pre-recorded cassettes.

Dual Azimuth Heads assure that both sides of a tape are played with extended frequency response. Non-NFB and Non-Switching Class A Amplification substantially reduce distortion. And a special Denon circuit eliminates the interference that often occurs when an amplifier is mounted in the trunk.

"...it's human engineering is about the best I have yet run across. Learning how to use it takes less than a minute."

Audio's Ivan Berger on the DCR-7600

Denon home high fidelity. Which means, no matter what you drive, you've finally found car stereo as good as your car.

DENON

DESIGN INTEGRITY



CD Video Disc



5" Compact Disc



8" Laser Disc



12" Laser Disc

Yamaha introduces four wheel drive.



The new Yamaha CDV-1000 breaks new ground in home audio-video entertainment.

It starts with those four discs up there. Together, they represent the highest quality source material on the market today.

And the CDV-1000 plays each and every one of them flawlessly. So now you can watch rock concerts and movies on 8" and 12" laser discs. Listen to a symphony on a regular compact disc. Or watch your favorite music videos on the new 5" CD Video discs.

The CD Video disc is a combination of audio and video. So when you play one on the CDV-1000, you not only get an incredible 425-line horizontal resolution of the video, but also the clear, clean audio that can only come from digital technology.

Of course, we wanted to keep the CDV-1000 simple

and easy to use. That's why we gave it fast access. And a super-tracking tilt servo laser head for accurate tracking.

All of which makes the CDV-1000 an incredibly versatile, high performance component. And one that no home theatre environment should be without. Just ask your Yamaha audio dealer for a demonstration.

Then hear, and see, for yourself what we're driving at.



YAMAHA®

YAMAHA DIGITAL HOME THEATRE

Yamaha Electronics Corporation, P.O. Box 6660, Buena Park, CA 90622.