

JANUARY 1984 • \$1.50

Stereo Review

How to Deal with Your Audio Dealer

Use an Equalizer For Better Sound

Digital Recordings: 25 Top Compact Discs

Equipment Test Reports

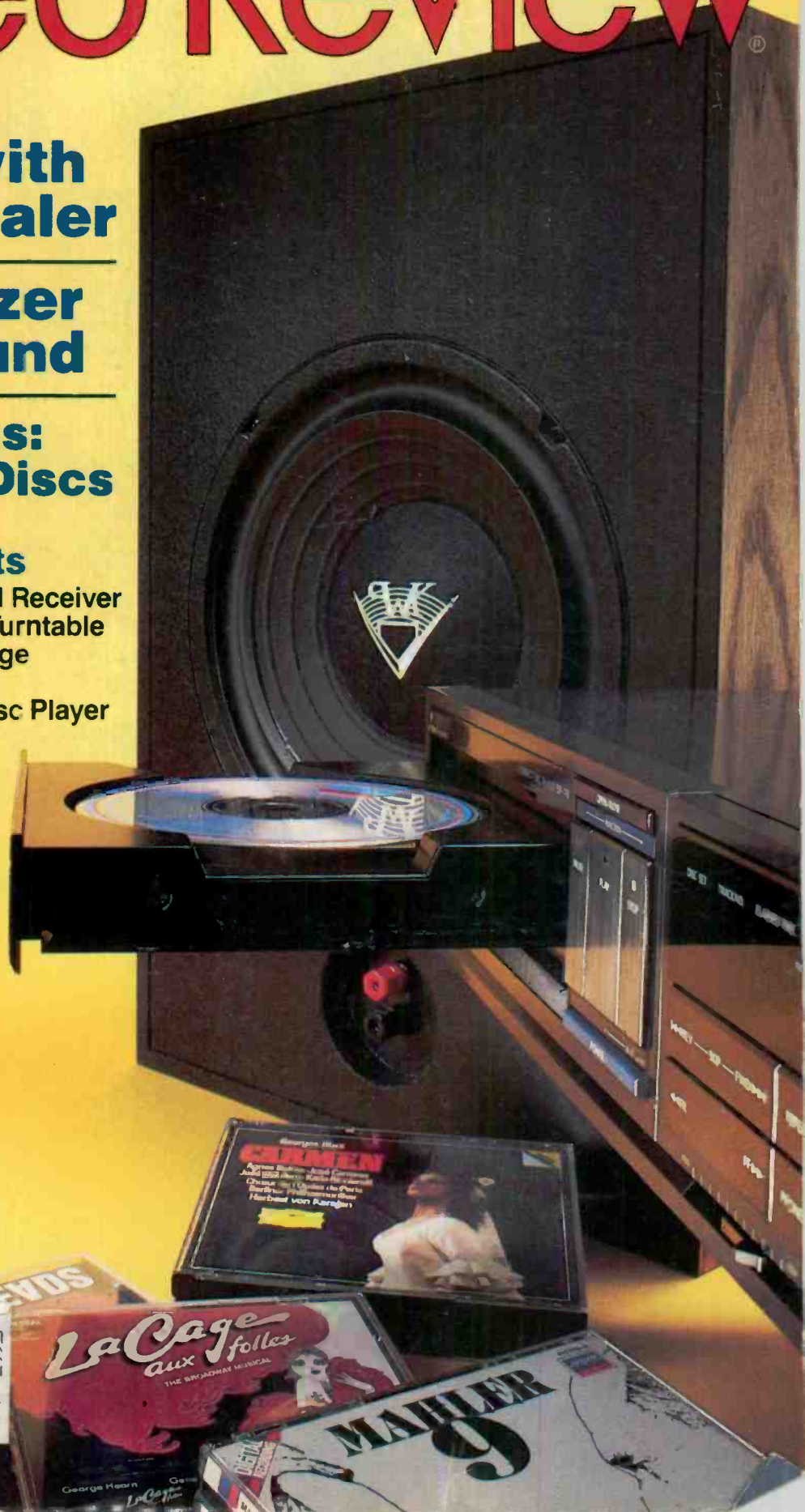
- Harman Kardon hk 590i AM/FM Receiver
- Acoustic Research's New AR Turntable
- Shure ML140HE Phono Cartridge
- Klipsch kg² Speaker System
- Mitsubishi DP-103 Compact Disc Player

Plus

- Yamaha YCT-800 Car Stereo

Disc Specials

- The Rolling Stones
- Sissy Spacek
- Tom T. Hall • Bob Dylan
- Joe Jackson • Jaco Pastorius
- Stephanie Mills
- Debussy's *La Mer*
- Bach's Goldberg Variations



01
 MR DAVID BUCHANAN
 353 CROWN CREST RD
 LEXINGTON KY 40502
 431200 BCH 3353C091 641J JAN86
 *****S-DIGIT 40502
 0

EXHIL

SANSUI, THE LEGEND IN HOME AUDIO, HITS THE ROAD.

Shift into supersound. No other car audio shares the road with Sansui for pure sound, pure status—and pure exhilaration!

Our 36 years of home audio advancement have enabled us to design the most intelligent car audio in the world.

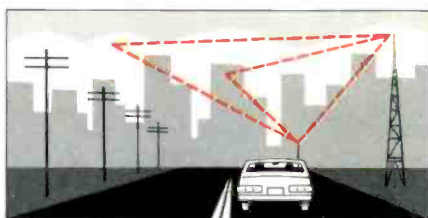
And once you've experienced its performance, you'll feel more at home on the road with Sansui than any other brand.

THE END OF THE ROAD FOR DISTORTION

Distortion? Sansui engineers just wouldn't hear of it. That's why

we've achieved a record low for distortion in a car amplifier.

With our ASRC™ (Automatic Stereo Reception Control), you're home-free from multipath distortion and drift caused by tall buildings, mountains and tunnels—anywhere you drive.



Sansui's computerized ASRC automatically reduces multipath interference and weak signal problems.

HOLD ONTO YOUR SEATS

Computer-age integrated circuitry makes Sansui the new

super-power in car audio. It delivers total power from amps to speakers like no other unit.

Whether you're mellowing out with Sinatra or reaching exit velocity with Hendrix, Sansui sound will exhilarate you most.

KEEP YOUR EYES ON THE ROAD

With advanced ergonomic design and soft-touch, computer-like controls, Sansui car audio lets you keep your ears on the music and your eyes on the road.

Our IC logic-controlled tape transport with tuner/monitor does the work for you. So all you have to do is sit back and enjoy the superior sonic performance.



ARRATE

And 24 station pre-sets (18 FM, 6 AM) give you further assurance that you won't be driven to distraction while driving to your destination.

GET BETTER HANDLING IN THE CORNERS

Sansui's versatile Fle-Axis™ speakers send music straight to your ears, without detouring it off the back window or letting it be absorbed en route.

Powerful strontium magnets give you greater power handling, plus crisp, coloration-free sound, low distortion and flat, wide frequency response.

And waterproof cones for our door speakers assure that acid rain

won't distort your acid rock—or dilute Handel's Water Music.



Sansui's exclusive Fle-Axis tweeter adds better high-frequency dispersion to a line of speakers that can blow all others off the road.

THE ULTIMATE PERFORMANCE PACKAGE

In addition to better sound quality, Sansui gives you all the features found in other units. Plus instrument lighting in a choice of interior-compatible *Hi-Tech Green* or *Luminary Orange* on two of our

top models.

If you believe, like we do, that hi-tech and high-quality are a way of life, then Sansui car audio should be part of yours. Get it and exhilarate for the ultimate pleasure trip.

For the name of your nearest Sansui dealer, call or write: Sansui Electronics Corporation, Lyndhurst, NJ 07071 (201) 460-9710. Carson, CA 90746 (213) 604-7300.

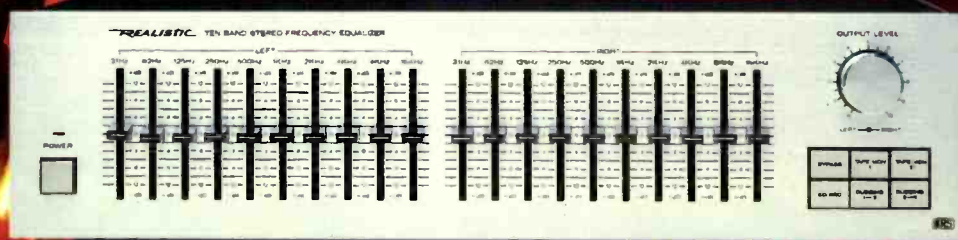


Putting more pleasure in sound

CIRCLE NO. 44 ON READER SERVICE CARD



The Real Sound of Music



Discover It With Radio Shack's New Equalizer / Tape Control Center

Get Your Free 1984 Catalog

184 full-color pages show
what's really new in electronics

Mail to: Radio Shack, Dept. 84-A-094,
300 One Tandy Center, Ft. Worth, TX 76102

Name _____

Address _____ Apt.# _____

City _____

State _____ Zip _____

Price applies at participating
Radio Shack stores and dealers

Our 10-band graphic equalizer takes you about as close as you can get to a live performance, without leaving your living room. Ordinary broadband tone controls simply can't compensate for distortion caused by poor room acoustics. But with twenty narrowband linear boost/cut controls you enjoy total command of your listening environment from 31-16,000 Hz. And you can make your own custom-equalized recordings with the sophisticated built-in dual-tape control system. So, bring your favorite music to the store near you and discover the new dimension of listening this equalizer can make. Only \$119.95, exclusively at Radio Shack.

Radio Shack[®]
A DIVISION OF TANDY CORPORATION

Stereo Review

(ISSN 0039-1220)

JANUARY

VOL. 49, NO. 1

1984

BULLETIN	Christie Barter and Gordon Sell	5
SPEAKING MY PIECE	William Livingstone	6
LETTERS TO THE EDITOR		8
NEW PRODUCTS		13
TAPE TALK	Craig Stark	18
AUDIO QUESTIONS AND ANSWERS	Larry Klein	20
CAR STEREO	Julian D. Hirsch and Christopher Greenleaf	23
TECHNICAL TALK	Julian D. Hirsch	26
EQUIPMENT TEST REPORTS	Hirsch-Houck Laboratories	31
AUDIO/VIDEO NEWS	David Ranada	46
HOW TO USE AN EQUALIZER	Craig Stark	48
HOW TO DEAL WITH YOUR AUDIO DEALER	Steve Booth	53
TWENTY-FIVE TOP COMPACT DISCS	David Ranada	60
BEST RECORDINGS OF THE MONTH		
DEBUSSY: <i>LA MER</i> ; <i>NOCTURNES</i>	David Hall	63
SISSY SPACEK: "HANGIN' UP MY HEART"	Alanna Nash	64
J. S. BACH: GOLDBERG VARIATIONS	Richard Freed	65
JOE JACKSON: "MIKE'S MURDER"	Mark Peel	65
CLASSICAL MUSIC		67
ARTHUR RUBINSTEIN: "IN MEMORIAM"	Richard Freed	68
A CELEBRATION OF VIOLINS	Richard Freed	78
POPULAR MUSIC		79
BOB DYLAN: "INFIDELS"	Steve Simels	80
THE RETURN OF TOM T. HALL	Alanna Nash	84
STEPHANIE MILLS: "MERCILESS"	Phyl Garland	88
THE ROLLING STONES: "UNDER COVER"	Steve Simels	94
JACO PASTORIUS: "INVITATION"	Mark Peel	96
EDITORIAL INDEX: 1983		97
THE BASIC REPERTOIRE	Richard Freed	102
ADVERTISERS' INDEX		102



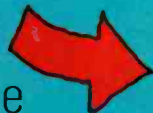
Michael Tilson Thomas—see page 63.

COVER: Design by Borys Patchowsky; photo by Geoff Rosengarten. See pages 37 and 44 for test reports on the Klipsch kg² speaker system and the Mitsubishi DP-103 Compact Disc player.

COPYRIGHT © 1983 BY ZIFF-DAVIS PUBLISHING COMPANY. All rights reserved. Stereo Review, January 1984, Volume 49, Number 1. Published monthly by Ziff-Davis Publishing Company, Editorial and Executive Offices at One Park Avenue, New York, New York 10016; Telephone: 212 725-3500. Richard P. Friese, President; Selwyn Taubman, Treasurer; Bertram A. Abrams, Secretary. Also publishers of Backpacker, Boating, Car and Driver, Computers and Electronics, Creative Computing, Cycle, Flying, Microsystems, PC, Popular Photography, Runner, Skiing, Stereo Buyers Guide, Tape Recording & Buying Guide, and Yachting. One-year subscription rate for the United States and its possessions, \$9.98; Canada, \$10.98. All other countries, one-year subscription rate \$14.98, cash orders only, payable in U.S. currency. Second-class postage paid at Los Angeles, California 90052 and at additional mailing offices. Authorized as second-class mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. POSTMASTER: Forms 3579 and address changes should be sent to Stereo Review, Circulation Department, P.O. Box 2771, Boulder, Colorado 80302. SUBSCRIPTION SERVICE: All subscription correspondence should be addressed to Stereo Review, Circulation Department, P.O. Box 2771, Boulder, Colorado 80302. Please allow at least eight weeks for change of address. Include old address as well as new—enclosing if possible an address label from a recent issue. PERMISSIONS: Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to Elizabeth Amado, Rights and Permissions, Ziff-Davis Publishing Company, One Park Avenue, New York, New York 10016.

Perfect Selection

(When the mood calls for just the right song.)



PROGRAM

AMCS: A

COUNTER: []
REPEAT: []

REPEAT

Onkyo's Instant Song Location

Everyone has a special song for a special moment, as our friend above will tell you. And, Onkyo's new TA-2044 Integra Series cassette deck makes finding that tune easier than ever before.

That's because the TA-2044

number three, locates it and plays it. It can also repeat the song (or any other) as

provides the most advanced Automatic Music Control System (AMCS) you can buy. Not only will it scan to let you identify the next cut, but you can program it to instantly play only the one song you want to hear. If you want to listen to the third song on a seven song tape, all you do is punch up the

often as you wish.

The TA-2044 is a three motor cassette deck that features Auto Space for precise spacing between songs when recording, Dolby B&C, Hard Permalloy head, timer standby, continuous repeat mode, and ten segment LED meter. As with our other new tape decks, the TA-2044 utilizes a full logic, computer controlled design. That means from our low end to our high end, Onkyo cassette decks guarantee the finest recording/playback performance.

So remember, when the mood calls for just the right song, there's only one right cassette deck—the Onkyo TA-2044. But please, don't use your feet.



Nobody knows more about audio than Onkyo.

ONKYO®

200 Williams Drive, Ramsey, NJ 07446

For complete literature on our TA-2044, plus our new TA-2022, TA-2033 and our Integra Series TA-2066 and TA-R77 with Auto Reverse, write directly to Onkyo.

Bulletin

Edited by Christie Barter and Gordon Sell

● **BEST SELLERS:** A survey by PolyGram Records of its initial Compact Disc sales shows that the two top titles were Holst's The Planets, conducted by Herbert von Karajan, and the soundtrack of Chariots of Fire. A close third was the music for the film Fame, followed by discs by Rush, the Boston Pops, and soprano Kiri Te Kanawa.

● **YELLOW PERIL.** Camera and film giant Kodak has reserved a booth at the upcoming Consumer Electronics Show in Las Vegas, and the rumors about it are flying among tape manufacturers and video equipment makers. Speculation centers on a new home movie/video tape format. Kodak has such marketing and distribution clout that current tape and VCR makers might have no choice but to follow.

● **RED TAPE** is decidedly unpopular with Russian audiophiles. The quality of audio cassettes produced by some USSR factories is so poor that Maxell and Sony cassettes are selling for twice the price of Soviet tapes in Moscow and Leningrad. According to Billboard, a music-industry trade magazine, tape factories in the USSR don't produce C-90 or C-120 tape because there are no machines suitable to use them. Let 'em eat ferrichrome.

● **DIGITAL DEMO:** A new CD from Elektra Records, "The Digital Domain: A Demonstration," explores the potential of digital audio technology. The sounds of jet planes, bird song, gongs, and a variety of instruments, as well as the human voice, illustrate the capabilities of the medium. A joint project of Warner Special Products and Stanford University's Center for Computer Research in Music and Acoustics, the disc also includes tests allowing audiophiles to fine-tune their hi-fi systems. It is available in CD format only through record outlets and audio specialty shops. Price: \$18.98.

● **TECH NOTES:** Car radios manufactured by Chrysler Corp. will be equipped to receive Motorola-system AM stereo. Production will begin in 1984....The

UL (Underwriters Laboratories) has canceled plans for loudspeaker safety standards because there would be "no benefit to consumers." The UL speaker standards were to have covered fire and such physical hazards as tipping. ...Mitsubishi plans to introduce a car stereo CD player in the fall of 1984....Clarion is looking at digital tape systems for the car....Expect the first VHS hi-fi systems in the late spring or early summer of this year.

● **ELVIS ON CD:** RCA's latest Compact Disc release includes a three-disc, limited-edition set of Elvis Presley recordings. Called "Elvis the Legend," the boxed set contains sixty classic Elvis songs, twenty per CD. Only 5,000 numbered copies will be made available worldwide. RCA claims that "even Elvis fans without CD players will want to own this set," which lists for \$75. "Elvis' Golden Records," a single CD, is slated for RCA release this month.

● **NEW CONTRACTS:** Conductor Sir Georg Solti has signed an exclusive ten-year contract with London/Decca, continuing an unbroken association begun in 1947. The Chicago Symphony, which Solti has served as music director for almost half that time, signed a new five-year agreement with the record company.... Klaus Tennstedt, who is recording the Mahler symphonies for Angel with the London Philharmonic Orchestra, has been named the principal conductor and music director of the LPO....Bernard Haitink, who is entering his twentieth year as sole permanent conductor of Amsterdam's Concertgebouw Orchestra, will also become Covent Garden's next music director. He will succeed Sir Colin Davis, whose appointment ends in July 1986.

● **A SONG FOR DEAD WARRIORS**, a controversial ballet by San Francisco's Michael Smuin, is being shown on the PBS Network on January 16. The hour-long epic has music by Charles Fox, known for his TV music (ABC's Wide World of Sports), film scores (Paper Chase), and popular song hits (Roberta Flack's Killing Me Softly with His Song).

Speaking My Piece

By William Livingstone



With John Eargle and Porter Smith at JBL

HAPPY 1984

EVERY generation of college students has a few books that are required reading for anyone who wishes to be considered "with it," "in," "hep," "hip," or "cool." When I was in graduate school, you had to have read George Orwell's *1984*, and if you aspired to more than the bare minimum of with-it-ness, you also had to be able to talk about Aldous Huxley's *Brave New World*.

Huxley's book was first published in 1932, and Orwell's came out in 1949. Both are satirical novels that present gloomy views of the future. The two authors assumed that some form of socialist or communist totalitarianism would triumph and that a powerful elite would harness technology and use it to dominate and, in one way or another, dehumanize the rest of the population.

Both books show a world in which religion and family life have been abolished and spiritual and moral values are dispensed with. In *Brave New World* all human conception takes place *in vitro*, and human embryos are developed in bottles. All strong emotions are suppressed by conditioning or drugs, and sexual promiscuity is not only permitted but required.

Like his earlier novel *Animal Farm*, Orwell's *1984* is a biting satire on Soviet Russia, dwelling on the grimness of everyday life there. In *1984* sex is repressed in order to make citizens more neurotically involved with the Party and more enthusiastic about such things as the annual Hate Week. Individual privacy is destroyed through the use of electronic media, and at all times, through giant telescreens, Big Brother Is Watching You.

Now that the real 1984 is here, I've just reread *Brave New World* and *1984*, and I was surprised to find that both hold up well. Huxley's book is funnier than I remembered, and, despite its de-

pressing grimness, *1984* is more touching than I remembered. I read both with a sense of relief.

Thank God, it hasn't happened here. To be sure, our government sometimes expresses itself in Doublethink and Newspeak, but if we leap out of bed in the morning to do pushups or run a few miles, it is because we want to and not because orders are being barked at us through telescreens. Big Brother is not watching us.

In these futurist novels Orwell and Huxley both express concern about mechanical production of artistic works. In *1984* the heroine operates novel-writing machines, and an automatic versificator grinds out sentimental songs.

In *Brave New World*, people who had no mothers but were born out of bottles sing, "There ain't no Bottle in all the world/Like that dear little Bottle of mine." And the hit love song is *Hug Me Till You Drug Me*. It won't surprise me if either turns up on the charts tomorrow, but if we don't like them, we can always turn them off.

In the novel *1984* the telescreen cannot be turned off. In the real 1984 what the electronic media offer us is an ever greater variety of program material and formats and ever greater freedom of choice. So far, computers have produced no music worth listening to, but I hope I'm still here when the movies become what Huxley described as "the feelies."

I want us all to be here at the start of the twenty-first century to watch reruns of *2001: A Space Odyssey*. It's got a great score composed not by computer but by human hands in the service of human minds and hearts. As machines are developed to behave more and more like people, I suppose it's up to us people not to behave like machines.

Happy New Year. □

Stereo Review

PUBLISHER
J. SCOTT BRIGGS

EDITOR IN CHIEF
WILLIAM LIVINGSTONE
MANAGING EDITOR
LOUISE GOOCH BOUNDAS
ART DIRECTOR
BORYS PATCHOWSKY

TECHNICAL EDITORS
DAVID RANADA, GORDON SELL

MUSIC EDITOR
CHRISTIE BARTER
POPULAR MUSIC EDITOR
PAULETTE WEISS

ASSISTANT MANAGING EDITOR
DAVID STEIN

EDITORIAL ASSISTANTS
BARBARA AIKEN, MARGARET LIDZ,
ROCCO MATTERA, FRAN ROSENBLATT

DIRECTORY EDITOR
WILLIAM BURTON

LONDON EDITOR
HENRY PLEASANTS

CONTRIBUTING EDITORS
CHRIS ALBERTSON MARK PEEL
RICHARD FREED LINCOLN PERRY
PHYL GARLAND PETER REILLY
CHRIS GREENLEAF EBET ROBERTS
DAVID HALL CHARLES RODRIGUES
JULIAN D. HIRSCH ERIC SALZMAN
GEORGE JELLINEK STEVE SIMELS
LARRY KLEIN CRAIG STARK
STODDARD LINCOLN JOEL VANCE
ALANNA NASH

ADVERTISING DIRECTOR
BRIAN E. McCABE

ASSISTANT TO THE PUBLISHER
JEAN ANDERSON

Editorial and Executive Offices: 212 725-3500
Ziff-Davis Publishing Company
One Park Avenue, New York, New York 10016
National Advertising Manager: Richard J. Halpern
Eastern Advertising Manager: Charles L. P. Watson
Midwestern Office, The Patis Group: 312 679-1100
4761 West Touhy Ave., Lincolnwood, Illinois 60646
Arnold S. Hoffman, Dirk E. Barenbrugge

Western Office: 213 387-2100
3460 Wilshire Boulevard
Los Angeles, California 90010
Western Advertising Manager: Marge Doherty-WilHITE

Japan: Iwai Trading Co., Ltd.
J. S. Yagi
603 Ginza Sky Heights Building
18-13, Ginza 7-Chome
Chuo-Ku, Tokyo, Japan 104
Telephone: (03) 586-0165, 545-3908

Circulation Office
P.O. Box 2771, Boulder, Colorado 80302

EDITORIAL CONTRIBUTIONS must be accompanied by return postage and will be handled with reasonable care; however, publisher assumes no responsibility for the return or safety of art work, photography, or manuscripts.

Member Audit Bureau of Circulations



CONSUMER COMPUTERS & ELECTRONICS
MAGAZINE DIVISION

President: Larry Sporn
Vice President, Publishing Director: J. Scott Briggs
Vice President, Marketing: Jeff Hammond
Vice President, General Manager: Eileen G. Markowitz
Creative Director: Peter J. Blank

ZIFF-DAVIS PUBLISHING COMPANY

President: Richard P. Friese
President, Consumer Magazine Division: Albert S. Traina
Executive Vice President, Marketing
and Circulation: Paul Chook
Senior Vice Presidents: Philip T. Heffernan,
Sidney Holtz, Edward D. Muhlfeld, Philip Sine
Vice Presidents: Baird Davis, George Morrissey
Treasurer: Selwyn Taubman
Secretary: Bertram A. Abrams



A unique solution to a serious turntable problem: Technics turntables with the P-Mount system.

Unfortunately, standard turntable design has left too much to chance in terms of cartridge mounting and performance.

Technics turntables with the patented P-Mount tonearm/cartridge system have changed all that. By providing complete compatibility between tonearm and cartridge to achieve the optimum tonearm resonant frequency: the level at which annoying bass frequency interference is minimized. For the accuracy and fidelity conventional turntables can deny you.

In addition, P-Mount is a plug-in system. You'll get outstanding performance without struggling to install the cartridge. There's nothing to wire. There's no longer a headsell. There's no more fumbling to calibrate overhang or stylus position. Tracking and anti-skating adjustments have been virtually eliminated.

Just plug any P-Mount cartridge into a Technics straight, low mass, high performance tonearm, and tighten one locking screw. With Technics, your records are now virtually immune to the groove wear, poor channel separation and distortion caused by improper cartridge-to-tonearm mounting.

Technics has standardized all key specifications with manufacturers of P-Mount cartridges: cartridge weight, external dimensions, connector shape, stylus position and more. So you can choose from a wide range of cartridges from virtually every manufacturer.

The P-Mount plug-in cartridge system. Just one of the many advances you'll find in the entire line of sophisticated Technics turntables. Including our surprisingly affordable new quartz-locked series.

The turntable revolution continues at Technics.

Technics
The science of sound

CIRCLE NO. 1 ON READER SERVICE CARD

Letters

Pink Floyd

● I must disagree in one respect with Mark Peel's favorable November review of Pink Floyd's "Works." Mr. Peel thought that few people under the age of thirty would be familiar with earlier Pink Floyd releases. On the contrary: "Dark Side of the Moon" has been among the top two hundred sellers since its release, and I have to believe that *many* of us between the ages of twenty and thirty have been exposed to this classic premise album.

DAVID R. LONG
West Jefferson, N.C.

CD-Player Reviews

● Regarding Mike Slater's November letter in which he requests that STEREO REVIEW stop testing Compact Disc players because he either doesn't want or can't afford one—talk about self-centered! I have no desire for a tuner or an open-reel tape deck, but I still enjoy learning about them and still read your test reports.

Moreover, contrary to Mr. Slater's belief, there *are* audible differences between CD player models. I had the chance to try one out at home that, to my ears anyway, had a "boomy" bass and a shrill high end. But since getting the model I chose, I doubt that I've used my "regular" record player more than a few hours.

I anxiously scan every audio publication each month for reviews of CD players and software—and, incidentally, STEREO REVIEW has been sorely lacking in reviews of the discs.

ALFRED W. MYERS
White Plains, N.Y.

Most of the CD's released so far appeared first as LP's, and noteworthy ones have been reviewed in these pages. But for a survey of the best-sounding CD's, see the article on page 59.

"Concert-Hall Realism"

● I agree fully with Julian Hirsch's conclusion, in November's "Technical Talk,"

that home reproduction of "concert-hall sound" is impossible, but it seems to me that he left out an important argument. That is, which concert hall do you want to reproduce? Boston's Symphony Hall? New York's Carnegie Hall? Avery Fisher Hall—or, heaven forfend, Philharmonic Hall before Mr. Fisher paid to have it rebuilt? The high-school auditorium where the local community orchestra plays?

While it may be argued that any "good" concert hall will do, everybody has a favorite hall. More important, most people have a least favorite one and would certainly not like to hear their favorite music reproduced as if in this most-disliked hall.

Still, if someone could reproduce the sound of Boston's Jordan Hall, center orchestra, just in front of the balcony . . .

K. A. BORISKIN
Bellingham, Mass.

● Arthur C. Clarke, co-author of the screenplay for *2001: A Space Odyssey* and author of many science-fiction novels and stories, once formulated a "law" according to which "When a distinguished but elderly scientist says something is possible, he's almost always right; when he says something is impossible, he's almost always wrong."

When Julian D. Hirsch, in his November column, supposedly "explodes" the "myth of concert-hall realism," proclaiming on the basis of nothing more than his theories and authority that "transporting the acoustic environment of the concert hall to our homes is probably no more attainable than



WHAT YOU SEE IS WHAT YOU'LL HEAR.

the science-fiction dream of faster-than-light travel," he's out on a limb and sawing it off.

DON F. HILL
Riverside, Calif.

Elliott Carter

● I find it impossible to reconcile Richard Freed's appraisal of Elliott Carter's *Night Fantasies*, reviewed in November, with the recognition Mr. Carter has received for much earlier and better works. It would be unwise to consider *Night Fantasies* a serious, musical, or interesting contemporary piece; it is simply prolix, an attribute characteristic of much of Carter's work—for instance, the Concerto for Orchestra, the Symphony of Three Orchestras, and the Piano Concerto.

H. R. CROWELL
Newark, N.J.

CD Program Lengths

● Larry Klein's response to a question about Compact Disc playing times in October's "Audio Q. and A." was overly polite. Mr. Klein said that we do not get the full potential seventy-five minutes of music on CD's because of "... disc-manufacturing problems and program-material limitations. ..." I cannot speak about the manufacturing problems, but "program-material limitations" is pure wind. Before buying my CD player, I taped my LP's, and I can assure you that I do not have any tape with

more than three minutes blank on either side. If I, with my limited library, can manage to fill up every recording I make, surely a record company can do as much for theirs.

The few CD's I now have average only forty-five minutes—60 per cent of capacity. Why? The reason is obvious: forty-five minutes is the optimum playing time for an LP. Longer playing times do create manufacturing problems for analog discs as the grooves get closer together. Longer playing times for cassettes mean more tape and increased cost, so it made sense to limit them too. But neither of these excuses serves for CD's. It is just that it's convenient for the record companies, *not* their customers, to have exactly the same program in all three formats. Thus CD buyers are still suffering from the limitations of the LP. At more than \$20 per CD, this is an outrage.

The additional material to fill out a CD would not necessarily have to be new or even digitally recorded. Some unusual piece out of the record company's vaults would be fine. It would cost them nothing except perhaps additional royalty payments to the performers, and many fine works might find their way onto CD's in this manner and in no other. If I don't like the choice, I can easily program it out.

WILLIAM G. NABOR
Mission Viejo, Calif.

● Thank you for David Ranada's interesting article about Compact Discs in November. Now I have another question: Will any

CD's be released with reduced playing times, something like 45-rpm singles?

L. CHORNY
Bronx, N.Y.

We know of no such plans, and it would hardly seem a cost-effective move.

Simels vs. Plant

● In reviews of Led Zeppelin albums and, more recently, of Robert Plant's two solo albums, Steve Simels goes to great pains to say how much he dislikes both Led Zeppelin and Mr. Plant. His October review of Plant's "The Principle of Moments" really points up his prejudice. I don't think Mr. Simels is prepared to give Robert Plant a fair shake no matter what he records.

GREG WINMILL
Brandon, Manitoba

Macrocomponents

● Numerous issues of STEREO REVIEW before 1983 have had pictures of Larry Klein, at the head of his "Audio Q. and A." column, posing with rather large versions of audio and video equipment, but in 1983 only the October issue has such a picture. This raises several serious questions: Why were the Japanese producing such equipment? Why was then-Technical Director (now Contributing Editor) Klein shown posing with it? And why haven't we seen such pictures in recent months?

Information just made known to me indi-



What you'll hear is all of it. Every twang, toot, oom-pah-pah and crack. Kona Audio Tape will get it down and get it right. The first time. Everytime. Because not only is the reproduction absolutely flawless, so is the quality control.

In fact, we're so sure that if for any reason you're not happy with our tape, we'll replace it free of charge.

After over a century of precision coating experience, we've gotten pretty

good at laying down magnetic material with incredible consistency. Free from dropouts, and delivering rich, powerful dynamic range.

Kona offers four types of audio tapes for all types of recording situations. So when you want to hear everything you see, make sure you see your nearest Kona dealer.

KONICA AUDIO • VIDEO DIVISION
KONISHIROKU PHOTO IND. USA, INC.
440 SYLVAN AVE., ENGLEWOOD CLIFFS, N.J. 07632



KONICA AUDIO TAPE.
IT LIVES UP TO YOUR
IMAGINATION.™

CIRCLE NO. 4 ON READER SERVICE CARD

The leader in equalizers still stacks up best with improved specs, more features and a new look.

ADC's new line of Sound Shapers[®] prove that the best just got better. Again. Our stereo frequency equalizers incorporate the superb electronics, reliability, and high performance technology that have made ADC famous. Plus we've improved them with new refinements that offer you more control and a new design that makes them look as good as they function.

Our top-of-the-line SS-315 offers a unity gain of ± 1 dB and the best signal-to-noise ratio in the industry. For the utmost in versatility, the range of each frequency control is an extra wide ± 15 dB, far more than the 12 dB of lesser equalizers. Tape monitoring and two-way dubbing capabilities for two decks are available. LED indicators for each control let you see the selected frequency curve at a glance. The SS-315 includes a built-in real-time spectrum analyzer, pink noise generator and calibrated electret microphone enabling you to attain flat response in minutes. Other features include external noise reduction and sound processor loops to accommodate time delay, subharmonic synthesizer, dynamic range expander or reverb units. There's also a subsonic filter that gets rid of damaging, power-robbing subsonic frequencies.

The other models in our Sound Shaper line offer the same fine ADC quality, with similar features geared to your equalization and budget needs.

If you've been waiting for the right stereo frequency equalizer for your system, don't wait any longer. With ADC Sound Shapers, the odds are stacked in your favor. (And if you're into video, be sure to see and hear what our new ADC Video Sound Shapers can do to improve your video performance.)

*Sound
Shaper*[®]
Frequency
Equalizers

Shaping sound is as easy as **ADC**

ADC Division BSR (USA) Ltd., Blauvelt, N.Y. 10913 (914) 358-6060
© 1983

ates that the Japanese are/were manufacturing these items in order to exploit a vast new market, that of the Yeti or Abominable Snowmen. Granted that this market is somewhat undeveloped, the potential for incredible profits exists. The need for increased-size components is obvious given the physical stature of the Yeti and their unfamiliarity with small, fragile, highly technical objects. The Japanese hoped to bring them into the modern world quite rapidly and make them good consumers.

The Chinese, however, being reluctant to accept most outside influences, initially barred the import of these items for the Yeti (who dwell in Chinese-controlled Mongolia), calling such plans "silly and imperialistic." The Japanese persevered and just last February were granted the right to export macrocomponents into China for the Yeti market. This explains the long absence of photos of Mr. Klein with such equipment and the subsequent appearance of one in October.

Please keep us posted—and keep the photos coming.

THOMAS HENKE
West Lafayette, Ind.

Martha of the Muffins

● Just a quick note about a slight mistake (November, page 102): the *great* vocalist of Martha and the Muffins is Martha *Johnston*, not Martha Davis (who's with the Motels). Personally, I found the group's "Danseparc" to be a great LP!

ED McDOWD
Kalispell, Mt.

On Your Toes

● I was pleased to read that Peter Reilly enjoyed the revival-cast recording of *On Your Toes* (November). He must have been so taken, however, with the "translucent" rendition of *Quiet Night* that he neglected to note that it is sung, on stage and on the recording, by Michael Vita, *not* Lara Teeter.

STEVEN J. PAGGIOLI
New York, N.Y.

Renaissance

● In his November review of "Time-Line" by the group Renaissance, Mark Peel describes the performance as "floundering." While he gives some recognition to the beautiful blend of classical, folk, and rock elements that distinguished the Renaissance of old, he can't seem to accept the group's natural progression to a more modern sound. All of the old musical elements are still there—they've just been arranged differently and added to by a harder and more electronic rock style. Renaissance has accomplished what few groups have ever done: changing to a refreshing new sound while actually increasing the quality of their music.

PIERRE KENYON
DeSoto, Tex.

Correction

● Our November 1983 test report on the Infinity RS6 speaker system incorrectly stated the price. The suggested retail price is \$299 per speaker.



Why this is the tape that sets the standard.

JVC sets the standard for all **VHS** videotapes, no matter who makes them.

That's the way it has been ever since JVC engineers originated the format for VHS videocassette recorders.

That's why we feel a special responsibility for manufacturing our own brand of VHS videotape at the highest possible quality level.

For our HG and Super HG videotapes, the process begins with a polyester-base

film. Using a new binding system, we coat the film with super-fine magnetic particles, which improves the packing density of the coating. Our own unique dispersion process makes the coating more uniform and sharply reduces the occurrence of drop-out.

The result is videotape that provides a continuously stable picture, with clear, pure colors.

Compared with JVC's own reference tape, our new HG tape has a 2.3 dB

higher color S/N ratio; with our new Super HG tape, the improvement is 4.0 dB.

All three grades of JVC videotape, including our Standard formulation, benefit greatly from JVC's extensive pioneering research in VHS tape-to-head dynamics.

So no matter which grade of videotape you prefer, now you know how to pick the brand that sets the standard for all the others.

JVC® JVC JVC JVC JVC JVC JVC JVC

JVC COMPANY OF AMERICA, Magnetic Tape Division, 41 Slater Drive, Elmwood Park, NJ 07407 JVC CANADA INC., Scarborough, Ont.

CIRCLE NO. 7 ON READER SERVICE CARD



Come to where
the flavor is.

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

17 mg "tar," 1.1 mg nicotine av.
per cigarette, FTC Report Mar '83

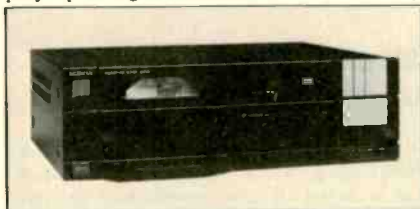
Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

New Products

Latest Audio Equipment and Accessories

Programmable Luxman Compact Disc Player

□ Luxman's DX-104 front-loading Compact Disc player can be programmed to play up to eight selections on a disc in any



order. The programmed track and index numbers can be recalled to confirm what is in the memory. Frequency response is given as 5 to 20,000 Hz \pm 0.3 dB. The DX-104 measures 16 1/2 x 5 3/4 x 13 3/4 inches. Price: \$1,200. Luxman Division, Alpine Electronics, Dept. SR, P.O. Box 2859, Torrance, Calif. 90509.

Circle 120 on reader service card

Seven New ADS Speakers

□ ADS has introduced a line of seven speaker systems that are said to offer improved performance at lower prices than the company's previous models. The systems were designed for smooth, flat response and are said to be capable of reproducing the most demanding digital program material. All the speakers have proprietary Stiffliite woofers, frameless metal grilles, and flush driver mounting to eliminate diffraction effects. Nominal impedance of all models is 8



ohms. Sensitivity specifications range from 87 to 89 dB sound-pressure level measured at 1 meter with a 1-watt input.

The new line ranges from the bookshelf-sized L470 (shown), with a 7-inch woofer and a 1-inch woven soft-dome tweeter, to

the top-of-the-line L1290, which has two 8-inch woofers in cast baskets, a 2-inch mid-range positioned for optimum dispersion at a seated listener's ear level, and a 3/4-inch tweeter. Rated frequency responses range from 50 to 20,000 Hz \pm 3 dB for the L470 to 20 to 23,000 Hz \pm 3 dB for the L1290. Available finishes are walnut veneer or matte-black heavy laminate. Prices per pair range from \$319 for the L470 in either finish to \$1,299 for the L1290 in walnut, \$1,259 in black. ADS, Dept. SR, One Progress Way, Wilmington, Mass. 01887.

Circle 121 on reader service card

Blaupunkt Car Radio Gives Traffic News

□ The Sacramento model car stereo AM/FM/cassette player from Blaupunkt is the company's first self-amplified (7 watts per

channel) electronically tuned model with Automatic Radio Information (ARI) reception capabilities. Currently broadcast by selected FM stations in New York City, Philadelphia, Detroit, and Trenton, New Jersey, and scheduled for operation in Southern California by this spring, ARI



enables motorists to hear important traffic bulletins even if a cassette is playing or the car stereo is shut off.

The Blaupunkt Sacramento combines a stereo radio with an auto-reverse cassette player in a mini-sized chassis. Cassettes are motor-loaded and ejected automatically when the system is turned off. The Sacramento offers electronic station search, six

Carver Receiver Combines Amplifier, Tuner Innovations

□ The new digital-synthesis AM/FM stereo receiver from Carver Corporation combines technological innovations first introduced in the company's power-amplifier and FM-tuner components. The Magnetic Field power-amplifier section provides 130 watts per channel without the need for heavy heat sinks or large power capacitors. The Asymmetrical Charge Coupled FM detector in the tuner section affords a usable sensitivity in stereo of 16.3 dBf (1.78 microvolts) with a 75-ohm antenna. The FM detector is claimed to eliminate the distortion, noise, and hiss caused by weak signals and multipath interference without sacrificing stereo separation.

The receiver has phono, video/digital, auxiliary, and two tape inputs. There are six station presets, each usable for both AM and FM. There is a front-panel switch for dubbing from either of two tape decks to the other. The three tone controls have adjustment ranges of \pm 10 dB at 100 Hz (bass), \pm 6 dB at 1,500 Hz (midrange), and \pm 10 dB at 10,000 Hz (treble). There are front-panel controls

for FM muting, an AM noise filter, and loudness compensation as well as a stereo headphone jack. Displays include power levels for each channel, frequency, and signal strength.

Total harmonic distortion at rated power into 8 ohms is given as 0.05 per cent, intermodulation (IM) distortion as 0.1 per cent (SMPTE); transient IM distortion is said to be below measurable limits. Frequency response of the amplifier section is 20 to 20,000 Hz \pm 0.05 dB. FM tuner specifications (with the charge-coupled detector switched in) include a stereo 50-dB quieting sensitivity of 23.5 dBf (4 microvolts), stereo signal-to-noise ratio (S/N) of 85 dB at 85 dBf input, and channel separation of 30 dB at 100 Hz, 45 dB at 1,000 Hz, and 25 dB at 10,000 Hz. Phono S/N (referred to 5 millivolts) is 80 dB, and preamplifier-section frequency response is 20 to 20,000 Hz \pm 0.5 dB. Price: \$699. Carver Corporation, Dept. SR, 14304 N.E. 193rd Place, Woodinville, Wash. 98072.

Circle 122 on reader service card

New Products

station presets, and a digital time/frequency display. A low-level output jack is provided for attaching an external power amplifier. A power fader, four-way balance control, and four speaker-output plugs enable use with two pairs of speakers. Price: \$399.95. Blaupunkt Division, Robert Bosch Sales Corp., Dept. SR, 2800 South 25th Avenue, Broadview, Ill. 60153.

Circle 123 on reader service card

Audio/Video Furniture From Custom Woodwork

□ The 21-inch Woodmore cabinet (shown) from Custom Woodwork & Design can either be used as part of a modular wall sys-



tem or by itself as a stand for a turntable, TV, tape deck, etc. with space for two more components on the inside. The inner shelf is fully adjustable, and the unit features bronze-tempered glass doors and chrome hardware and casters. It measures 21 x 24 x 19 inches.

The Woodmore entertainment table can also be used either as part of a system or alone to provide storage space for several hundred LP's. Optional features include a pull-out cassette drawer, glass doors, and slide-out shelves. The ET 9000 is hand finished and measures 16 x 47 1/4 x 19 inches. Hand-finished wood doors with shaped or fully adjustable handles are available for all CW&D cabinets.

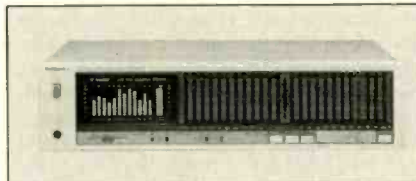
Prices: Woodmore 21-inch cabinet, \$235 in natural or dark oak, \$275 in natural walnut; Woodmore entertainment table, \$320 in natural or dark oak, \$395 in natural walnut; wood doors, \$85 in natural or dark oak.

Custom Woodwork & Design, Dept. SR, 7447 South Sayre Avenue, Bedford Park, Ill. 60638.

Circle 124 on reader service card

Technics Equalizer Has Real-Time Analyzer

□ The SH-8055 graphic equalizer from Technics includes a real-time spectrum analyzer and a pink-noise generator. The twelve-band equalizer has center frequen-



cies at 25, 40, 63, 100, 160, 250, 500, 1,000, 2,000, 4,000, 8,000, and 15,000 Hz. The control range is switchable from ± 12 to ± 3 dB. Each slider has an LED in its knob for easy visibility of the selected equalization curve. Other features include level indicators, volume-level display, and tape-monitoring loops for two decks. The use of band-pass filter circuitry is said to prevent distortion and noise. Rated total harmonic distortion is no more than 0.005 per cent, and the signal-to-noise ratio is at least 108 dB. Price: \$340. Technics, Dept. SR, One Panasonic Way, Secaucus, N.J. 07094.

Circle 125 on reader service card

Feedforward Circuitry in New Sansui Receivers

□ Sansui's new Z-9000X, Z-7000X, Z-5000X (shown), and Z-3000X AM/FM stereo receivers all feature the company's Super Feedforward distortion-reduction circuitry. This system, which combines negative feedback with feedforward in the power-amplifier section, is claimed to reduce total-harmonic, intermodulation, transient-intermodulation, crossover, switching, and "envelope" distortions to a greater degree than systems using only negative feedback can achieve. The four digital quartz-synthesis receivers also all have fluorescent frequency/time displays, automatic or manual tuning, sixteen station presets, preset scanning, and preset station indicators. The built-in digital clocks are connected to a three-event timer.

All four models have peak power meters (with fluorescent indicators in the Z-9000X



and Z-7000X, LED's in the Z-5000X and Z-3000X). Three pairs of speakers can be handled by the Z-9000X, two pairs by the other models. The Z-9000X and Z-7000X have microphone mixing and built-in moving-coil-cartridge pre-preamplifiers. The Z-9000X has a built-in seven-band graphic equalizer and a reverberation amplifier

with adjustable echo decay (from 0 to 3 seconds), and the Z-7000X has a four-band tone-control system.

The Z-9000X's rated output into 8 ohms is 130 watts per channel (rms) from 20 to 20,000 Hz with no more than 0.005 per cent total harmonic distortion (THD). The Z-7000X is rated for 100 watts per channel under the same conditions. The Z-5000X is rated at 70 watts with no more than 0.007 per cent THD, the Z-3000X at 55 watts with no more than 0.008 per cent THD. Phono signal-to-noise ratio (S/N) is 82 dB in the Z-9000X and Z-7000X; auxiliary S/N is better than 95 dB in the Z-5000X and Z-3000X. Prices: Z-9000X, \$960; Z-7000X, \$800; Z-5000X, \$500; Z-3000X, \$400. Sansui Electronics Corp., Dept. SR, 1250 Valley Brook Avenue, Lyndhurst, N.J. 07071.

Circle 126 on reader service card

Hitachi Cassette Deck Adjusts Head Azimuth

□ The D-RV7 auto-reverse cassette deck from Hitachi has a record/playback head that is automatically repositioned for optimal azimuth alignment on both sides of a cassette. The deck uses three computer-controlled motors: one for shifting the head, a



second for driving the capstan, and a third for driving the reel hubs. The auto-reverse mechanism is activated by an infrared sensor that detects the leader at the end of a cassette side.

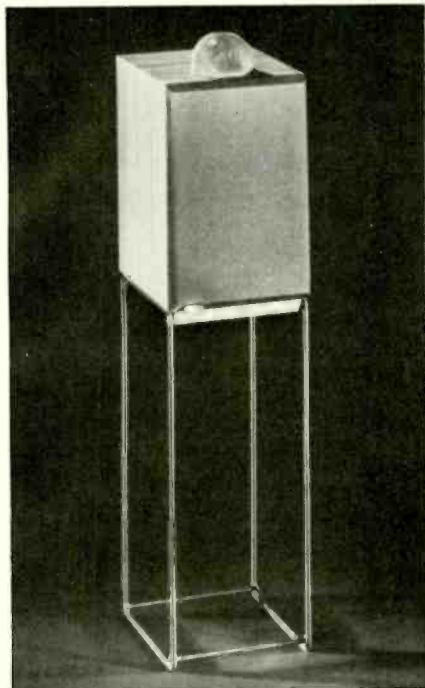
The D-RV7 can be programmed to play selections in any order on either side of a tape. A multiple-repeat function allows indefinite playback of a section between any two points on a tape, even if they are on different sides. The deck can also be programmed to sample the first few seconds of each track. Wow-and-flutter is specified as 0.04 per cent (wrms), frequency response as 20 to 19,000 Hz with metal tape, and signal-to-noise ratio as 68 dB with Dolby-B and 74 dB with Dolby-C. Price: \$229. Hitachi Sales Corp. of America, Dept. SR, 401 West Artesia Boulevard, Compton, Calif. 90220.

Circle 127 on reader service card

Time-Aligned Drivers In Small B&W Speaker

□ The woofer and tweeter of B&W's DM17 Limited speaker system are time aligned to each other so that, aided by a computer-optimized fourth-order crossover, they are said to produce a perfectly coherent and symmetrical wavefront. The 150-millimeter woofer, vertically aligned with the tweeter, has a Bextrene thermoplastic cone that is heavily damped with polyvinyl acetate compounds. The 26-millimeter dome tweeter on top of the enclosure is

made from woven polyester filaments. The cabinet measures 16 inches high, 8¾ inches wide, and 10½ inches deep; it is constructed from 12-millimeter-thick high-density particle board laminated with 6-millimeter bi-



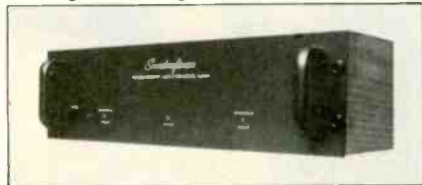
tuminous pads. There is a 19-millimeter-thick front baffle to ensure an almost totally inert enclosure with low resonance. Available finishes are walnut or black-ash veneer. The speaker weighs about 20 pounds.

Each pair of DMI7 Limited speakers is computer matched within ± 0.5 dB. The rated on-axis anechoic frequency response at 2 meters is 85 to 20,000 Hz ± 2 dB. Sensitivity is rated at 85 dB sound-pressure level (SPL) with a 1-watt, 300-Hz sine-wave input measured at 1 meter. Minimum recommended amplifier power is 40 watts; there is no upper limit because an electronic overload-protection circuit limits the SPL to 106 dB (1,000-Hz input measured at 1 meter). Price: \$790 per pair; optional stands (shown), \$60 per pair. Anglo-American Audio, Dept. SR, P.O. Box 653, Buffalo, N.Y. 14241.

Circle 128 on reader service card

New MOSFET Amplifier From Soundcraftsmen

□ The A2801 power amplifier, from Soundcraftsmen, intended to meet the high current demands of Compact Disc players, is designed for high dynamic headroom as



well as high continuous power. Rated at 140 watts per channel into 8 ohms and 205 watts into 4 ohms, the A2801 will operate continuously into as little as 2 ohms without triggering the protective circuitry, which does not use current limiting. Separate

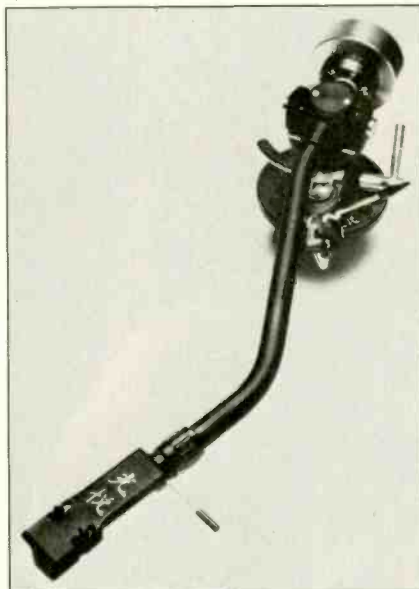
front-panel indicators for each channel light up when a distorted waveform is detected, and a third LED indicates when the protection circuitry has been activated.

Speaker connectors are heavy-duty five-way binding posts. The A2801 can be rack mounted and has large carrying handles. Oak- or walnut-veneer side panels are optional. Price: \$549. Soundcraftsmen, Dept. SR, 2200 South Ritchey, Santa Ana, Calif. 92705.

Circle 129 on reader service card

Koetsu Tone Arm Needs No Antiskating Gear

□ The SA-1100D Mark II tone arm from Koetsu features a tri-pivot lateral balance system—a three-point gimbal-suspension system employing both center and side sup-



ports—that is said to eliminate the need for an antiskating mechanism. A vertical balance system that supports the total weight of the tone arm and its bracket on a single center pivot is said to reduce vertical vibrations to below audible levels. To minimize resonance, the fulcrum is placed at a level slightly above the tone arm's center, and for smoother operation the needle side pivots ride in friction-reducing housings containing five ball bearings. For precise arm movement, the special alloy used in the pivots is polished to extremely close tolerances. Price: \$700. D & K Imports, Inc., Dept. SR, 146 East Post Road, White Plains, N.Y. 10601.

Circle 130 on reader service card

Lower-Priced Technics Compact Disc Player

□ The Technics SL-P7, one of the company's "second-generation" digital Compact Disc players, contains many of the same features as the higher-priced SL-P8. The SL-P7 is also a front-loading design with a motor-driven slide-out disc compartment. Its SEARCH/INDEX keys can be used either for fine cueing with audible playback at three times normal speed or for coarse cue-

ing at thirty times normal speed without audible playback, and they can also be used to access index points on specially coded discs. Other controls include SKIP keys to jump ahead or back to the previous or next selection, a REPEAT key for repeating one selection or a whole disc, PAUSE/STOP, and PLAY. A fluorescent digital display shows the total



number of tracks, total playing time, the track being played, elapsed time, and index-point data.

Unlike the SL-P8, the SL-P7 lacks a remote-control unit, thirty-two-selection programmed playback, and a headphone output. Both units use the three new integrated circuits Technics developed for digital decoding. They also incorporate the proprietary Technics Ultra Super Decoding Algorithm, said to improve error correction and error concealment. Price: \$700.

Circle 131 on reader service card

Alpine's Auto-Reverse AM/FM/Cassette Players

□ Two new in-dash AM/FM/cassette players from Alpine Electronics, the Models 7155 (shown) and 7154, feature automatic tape reverse and automatic dimming of the six station-presets buttons and the cassette loading-slot light. The cassette sections of each unit feature cobalt heads for frequency response up to 16,000 Hz in both directions and have music sensors to cue up the beginning of the next or the previous selection. Other features include selectable metal/chrome equalization, a digital clock, and separate bass and treble controls.

In addition, the Model 7155 has an on/

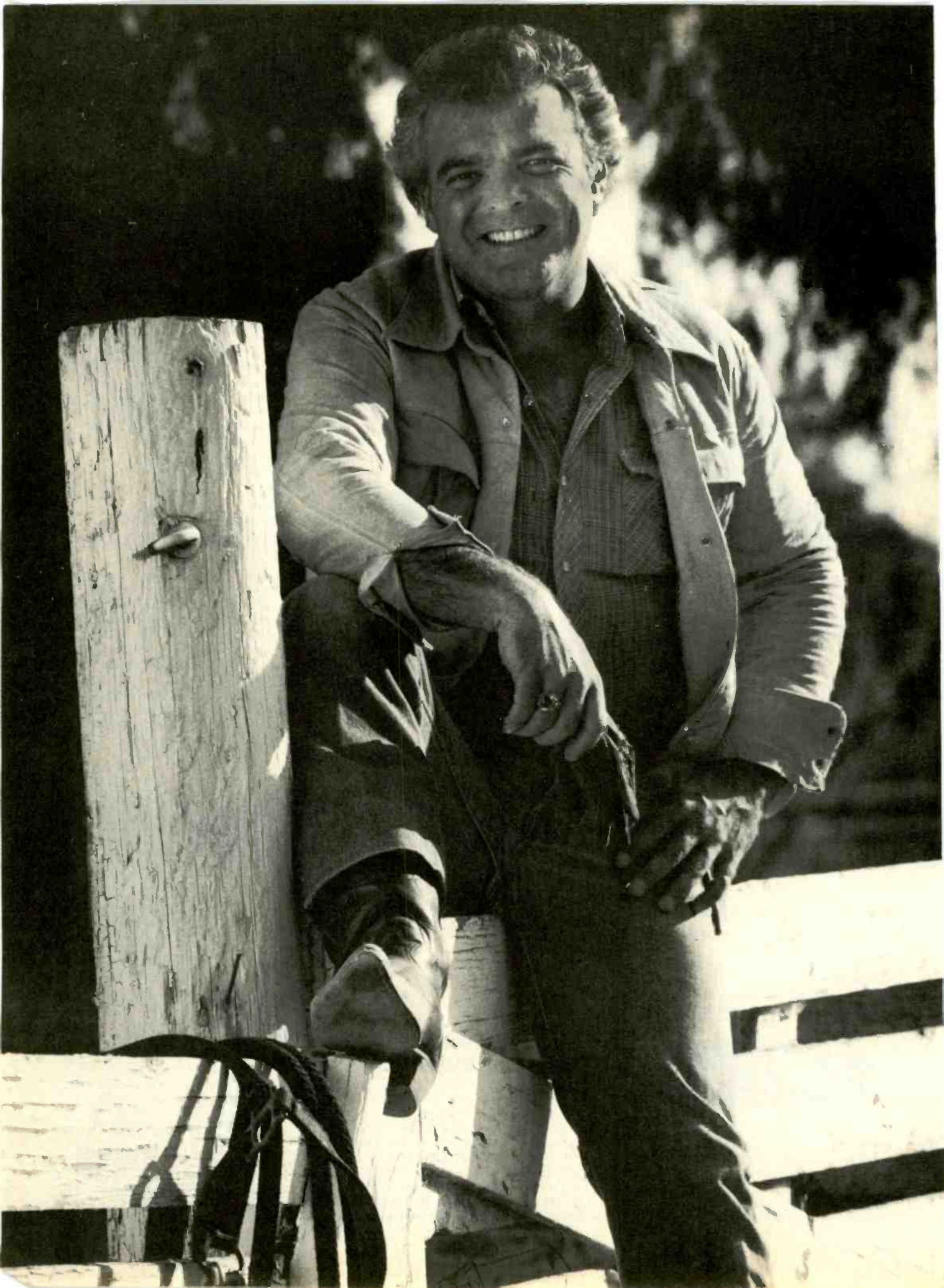


off switch for output to a subwoofer; in the on position, frequencies below 80 Hz go to the subwoofer, and in the off position all frequencies go to all speakers. Model 7155 also offers both Dolby-B and Dolby-C noise reduction and has a special noise suppressor for FM. Prices: Model 7155, \$399.95; Model 7154, \$349.95. Alpine Electronics of America, Dept. SR, P.O. Box 2859, Torrance, Calif. 90509.

Circle 132 on reader service card

NOTE: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturers, who will respond directly to reader requests for further information.

Domestic inflation and fluctuations in the value of the dollar overseas affect the price of merchandise imported into this country. Please be aware that prices quoted in this issue are therefore subject to change.





“EVERY ALPINE/LUXMAN PRODUCT COMES WITH A VERY SPECIAL FEATURE: AN ALPINE/LUXMAN DEALER.”

—Reese Haggott,
Executive VP/General Manager
Alpine Electronics of America

Anyone who knows audio will tell you there's something special about the way Alpine Car Audio and Luxman High Fidelity products perform. And in the way they look. And even a difference in the way their controls feel when you touch them.

But that's just part of what makes us unique.

The other difference is in the special people who sell, install and service our products.

You see, Alpine Car Audio and Luxman High Fidelity components are available only at a select number of dealers: Audio specialists, whose performance standards are as selective as those which we set for ourselves.

So it isn't enough to be knowledgeable about electronics. Every one of our dealers is also hand-picked for the way he works with people.

Which is why your Alpine/Luxman dealer will go out of his way to treat you like a valued client, instead of a customer.

And why he'll work with you to

help design the Alpine Car or Luxman High Fidelity System that's exactly right for your particular listening environment.

And why he'll also go to the time and effort to install your system so that it performs to your expectations.

And why he'll make himself available to answer any question along the way.

If you have a question or an idea you'd like to share, please get in touch with me at 1-800-421-2284.

The way we look at it, we want you to feel good about Alpine/Luxman products.

And those of us who bring them to you.



ALPINE / LUXMAN
AUDIO SPECIALISTS

For the Alpine/Luxman dealer nearest you, call: 1-800-421-1395. In California call: 1-800-262-4150.
Alpine/Luxman Electronics of America, 19145 Gramercy Place, Torrance, CA 90501

Tape Talk

By Craig Stark



Play or Store?

Q. *To reduce print-through and tape sticking I play each of my cassettes every six months whether I listen to them or not. Several people (you included) have said, however, that each playing removes some high-frequency information because the tape is squeezed between the capstan and the pinch-roller. Which is more harmful to the sound on the tape, long-term storage or regular playing? My tapes are stored "tail out," protected from temperature extremes and direct sunlight, and left in their plastic cases to keep dust out. Also, the heads on my recorder are kept clean and demagnetized.*

GARY R. CHASE
Redding, Calif.

A. If I were as meticulous about my tapes as you evidently are, I'd stop worrying about very small high-frequency losses that will be spread over many years! Those losses will probably even amount to less than those affecting your own high-frequency hearing abilities as you age.

"Exercising" a tape by playing it every six months or so is a good idea since it relieves internal stresses that may have built up because of slight changes in the plastic materials of both tape and shell. Rewinding a tape just before playing it lowers print-through, at least temporarily, which is one reason professionals store their tapes "tail out" (played but not rewound). But because cassettes are usually recorded on both sides and because print-through tends to be a greater problem for open-reel tapes, tail-out storage is less important for cassettes. What is important is to store tapes of any kind (video as well as audio) in a played condition, not a fast-wound condition. This is because high-speed winding can cause uneven tensions within the tape pack and often leaves a number of dangerously exposed tape edges.

The gradual deterioration in high-frequency response caused by repeated playings is less predictable than I would wish. On the one hand, as far back as 1967 those in charge of the Ampex Corporation's open-reel test-tape production reported that "a test tape which has been carefully handled and played 50 times will have a loss of 0.5 to

2 dB at 0.5 mil wavelength (15 kHz at 7.5 ips). For 100 plays, the loss may be about 3.5 dB at short wavelengths [high frequencies]" (*Journal of the Audio Engineering Society*, April 1967). At a 7½-ips speed, 15 kHz is the equivalent, in terms of wavelength, of 3,750 Hz at the 17/8-ips cassette speed, and higher frequencies on cassettes would be even more fugitive. Some tape-deck manufacturers' factory setup instructions call for replacement of high-frequency calibrated alignment tapes after only ten to twenty-five playings.

Yet with today's cassette tapes these "magnetostrictive" high-end losses (which arise, as you indicate, from pressing the tape around a small radius) are nowhere near as great as earlier data would predict. Improved magnetic particles—smaller in size and better shaped—are one reason today's slow-speed tapes hold their high frequencies better than their predecessors did. Magnetostrictive and even simple storage losses are still a serious consideration when it comes to videotapes, whose high-frequency requirements extend far above those of audio cassettes, but 18-kHz losses on my BASF IEC-standard test tapes have yet to become apparent after twenty-five to fifty playings. With less carefully made and handled tapes, however, some treble losses must be expected from both playing and storage, though how much of a loss and how long it will take to show up are not currently predictable.

Dubbing Car Cassettes

Q. *I have several questions about making copies of my cassettes for my car system. What specs are the most important in a deck to be used for the dubbing? Should I use the better deck for recording the copies or for playing the originals? Is Dolby-C important, even though my current deck doesn't have it, and should I use Dolby-B for the copies?*

GEORGE R. MADDEN, JR.
Williamstown, N.J.

A. Two general considerations should be borne in mind when you think about dubbing cassettes for a car system. First, all analog copying processes involve a loss in

quality (especially in wow-and-flutter and in signal-to-noise ratio), and these losses are more likely to be evident when dubbing from another cassette than if the source were an LP, open-reel tape, digital Compact Disc, or FM broadcast. This is because the noise and the wow/flutter spectra of two cassettes are likely to be very similar and thus will reinforce each other. But, with a few exceptions, the audio performance of automobile tape players is low enough that copying losses are likely to be the least of your worries!

Because most auto players have rapidly diminishing response beyond about 10 kHz, high-end response is not the most important specification if you're dubbing for the car, though it is, of course, very important in copying for a home hi-fi system. Wow-and-flutter figures for car systems tend to be about twice as high as for home players (sometimes nearly unlistenable high for my wow-sensitive ears), so you should keep this spec as low as you can afford in the copying deck. Noise build-up in the copy is inevitable, so you should obviously add as little as possible. For home dubbing this probably means recording the copy using Dolby-C or dbx; for the car, however, this is impractical since while most of today's car players have Dolby-B, very few offer Dolby-C or dbx. So don't use Dolby-C or dbx for your copies unless your car player is one of those equipped for them (outboard dbx decoders are available, however).

As for which machine to use as the player and which as the recorder, I'd use the higher-quality deck for recording unless you have reason to believe that the other deck is especially poor in playback performance.

Worn Heads

Q. *I recently acquired a used open-reel tape deck about one and a half years old. Already, however, there is a noticeable "groove" across the head faces from tape wear. While I haven't observed any obvious degradation in sound quality, can you tell me: How much wear is tolerable? Whether a worn head will damage tapes? And whether, at \$20 for each of the three heads, it's worth having them relapped rather than buying new ones?*

THOMAS SHERWOOD
SJAFB, N.C.

A. In judging when to replace open-reel heads I've always followed a rather literal "rule of thumb." If you can catch your fingernail on the edge of the wear groove, the time to act has come. Worn heads can indeed damage the edges of the tape, since tape width is never absolutely constant. Edge damage will lead to erratic high-frequency performance, especially in the left channel.

Relapping heads (smoothing and repolishing them with abrasives) is always a chancy business with consumer decks since the head faces are not as deep as those in professional recorders. Based on my experience, at least, the odds are about two to one that you'll get away with relapping a consumer head *once*; after that, forget even trying. Since I don't know what new heads would cost from your deck's manufacturer, I don't know whether I'd take the risk. □

AUDIOPHILE FILE™ XL-S

GREATER DYNAMIC RANGE

Maxell XL I-S and XL II-S are the ultimate ferric oxide cassette tapes. Precision engineered to bring you a significant improvement in dynamic range.

XL I-S provides exceptionally smooth linear performance characteristics with high resolution of sound and lower distortion.

While XL II-S has a greater saturation resistance in higher frequencies resulting in an excellent signal to noise ratio.

How did we achieve this?

IMPROVED EPITAXIAL PARTICLES.

Maxell engineers have managed to improve the Epitaxial magnetic particles used on both tapes.

By developing a crystallization process that produces a more compact, smoother cobalt ferrite layer on the gamma ferric oxide core, they've been able to pack the particles more densely and with greater uniformity on the tape surface.

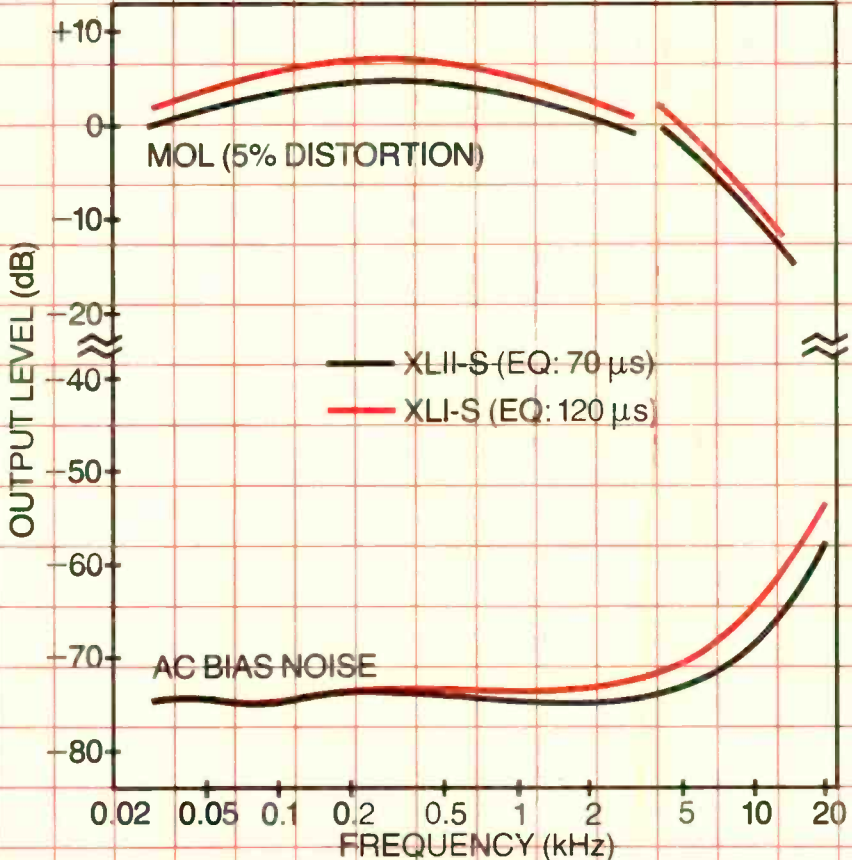
This increases maximum output level and reduces AC bias noise which in turn expands the dynamic range.

IMPROVED EPITAXIAL PARTICLE CHARACTERISTICS:

- MORE UNIFORM COBALT-FERRITE LAYER
- SMOOTHER PARTICLE SURFACE

GAMMA-FERRIC OXIDE 470Å

COATING THICKNESS: 10-11A (1A = 1/10,000,000 mm)



So you get a better signal to noise ratio, greater resolution of sound and higher output levels.

Of course, greater dynamic range isn't the only reason to buy Maxell high bias XL II-S or our normal bias equivalent XL I-S.

Both tapes have more precise tape travel and greatly reduced distortion levels.

You'll see both these improvements covered in detail in future Audiophile

Files. In the meantime, we suggest you listen to them.

For technical specification sheets on the XL-S series, write to:

Audiophile File, Maxell Corporation of America, 60 Oxford Drive, Moonachie, New Jersey 07074.



IT'S WORTH IT.

© 1983 Maxell Corporation of America, 60 Oxford Drive, Moonachie, N.J. 07074.
CIRCLE NO. 27 ON READER SERVICE CARD

Perreux Q. and A.

New Zealand

Q. Why are Perreux audio components made in New Zealand?

A. Because the commute to anywhere else would have been murder on Peter Perreux.

Highest Quality

Q. Why does Perreux design and manufacture the world's highest quality audio components?

A. Somebody had to.

Pure Gold Circuit Board

Q. Why is the Perreux circuit board plated with 99.9% pure gold?

A. Because there wasn't much of a cost advantage in using only 99% pure gold.

Solid Aluminum Knobs

Q. Who cares that Perreux's knobs are machined from solid aluminum?

A. Perreux cares, that's the difference between us and them.

Impressed Friends

Q. Will my friends be impressed if I own a Perreux?

A. If your friends are impressed with lots of knobs and a front panel that lights up, frankly no. But now it's our turn to ask a question. If your friends think that's quality, are you impressed with your friends?

Serious Advertising

Q. Why isn't this ad serious?

A. We can explain this with a Stereo Review quote about Perreux—"This 'no-holds-barred' approach to doing a first rate design and manufacturing job is uncommon in all walks of life these days..." You see, when you manufacture one of the highest quality products in the world you can afford to have a sense of humor.



Perreux International
875 Merrick Avenue
Westbury, New York 11590
Tel. (516) 683-3000

CIRCLE NO. 3 ON READER SERVICE CARD

Audio Q. and A.

By Larry
Klein



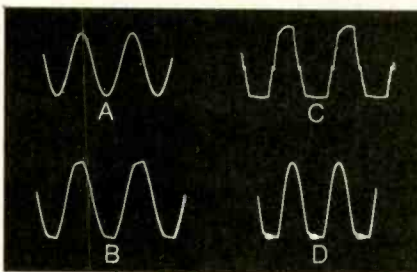
Waveform Aberrations

Q. I'm curious about some of the problems affecting amplifier waveforms that I read about in test reports. Can you tell me more about clipping, crossover distortion, and ringing?

CORNELL PROVEY
Morton Grove, Ill.

A. First of all, practically any problem an amplifier is likely to have is going to affect its handling of signal waveforms. If it didn't, it wouldn't be a "problem."

The four oscilloscope traces shown below were photographed some years ago when I was doing some work on an experimental



amplifier. They show a normal sine wave (A), symmetrical clipping (B), severe clipping and crossover distortion (C), and asymmetrical clipping with ringing (D). Clipping occurs when the signal demands more from an amplifier than it is able to provide; when the amplifier has reached its limit it is unable to reproduce the peaks of the waveforms and simply clips them off.

Crossover distortion occurs when the part of the circuit responsible for handling the positive portion of the waveform doesn't quite dovetail with the negative-handling part of the circuit. The little jog ("glitch" in engineering jargon) in the middle of the sine wave is a visual representation of the crossover distortion. It occurs, logically enough, at the point where the signal crosses over from one part of the circuit to the other.

Ringing is a form of spurious oscillation that reflects some instability in an amplifier's design. Despite its name, ringing isn't always audible, but it does indicate that all is not as it should be. In the case shown in

(D), the clipping of the negative part of the sine wave triggered the oscillation.

Speaker Wires

Q. I am planning on installing permanent in-wall speaker cables the next time I update my audio system. One pair of speakers will be in the den and a second pair will be in the back parlor. The cables will be fished down one wall, run through the basement joists, and then run up through the appropriate walls. The cables will terminate in outlet boxes with cover-plate jacks. I plan to use 12-2 (12-gauge, two-conductor) Romex for the wiring since its insulation is obviously much longer lasting than that of zip cord. Would there be any advantage in using 12-3 Romex and connecting the third, ground wire to the metal outlet boxes?

PETER M. NEELY
Lawrence, Kan.

A. I think your plan is a good one except for its possible "overkill" aspect. For many years I used 12-gauge wire in my built-in speaker-test switching setups in various New York City apartments. But instead of heavy-duty two- or three-conductor Romex solid wire I used single-conductor stranded wire. It has the same low resistance as Romex but is both thinner and far more flexible. This was an important consideration when I needed to run five or six parallel lengths of it around corners and under carpets.

The 12-gauge stranded wire is very strong and inexpensive, and it comes with red, black, or white insulation to assist in keeping your phasing polarities consistent. The two leads can be either tightly twisted or run with wide spacing between them, depending on what you believe about the effects of inductance and capacitance in speaker leads. I think installation is easier if the leads are simply run adjacent to each other. Twisting the leads on very long runs may introduce sufficient capacitance to disturb some amplifier output circuits.

If you have your heart set on using Romex I see no reason not to except for the convenience aspect. I can't think of any grounding reason to use three-conductor

Romex, but future upgrades of your system (perhaps bi-amplification?) might benefit from a couple of extra conductors in the cable. I recently saw four-conductor Romex on sale, and you might consider it. Unused conductors can always be paralleled for further resistance reduction on long runs.

Truncated Speakers

Q. I have noticed that my car speakers seem to be putting out most of their power from their rear and feeding it into the trunk. I have put a lot of money into my car stereo system to hear my 6 x 9-inch speakers from inside the car, not from inside the trunk. What can I do to solve this problem?

RANDY SYKES
Garland, Tex.

A. I don't think you have a problem. I assume that your rear speakers are full-range two- or three-way drivers rather than just 6 x 9-inch woofers. Because of the way two- and three-way speakers are constructed, almost all of their midrange and tweeter energy radiates forward. The woofer, however, radiates equally well from its front and rear. With your trunk open and listening outside the car, you mostly hear the woofer's rear radiation—which, because of its heavy bass, seems to embody most of the "power." In truth, though, it is likely that the bass is just as heavy inside the car, but its relative audible contribution there is balanced by the output of the midrange and tweeter drivers.

You might be able to demonstrate this for yourself by turning your amplifier's treble control (and the midrange control, if there is one) to full cut. You should then hear the same bass-energy balance in the car and in the trunk. Woofers in a home enclosure perform in exactly the same way, but you seldom get to listen to a home woofer from inside its cabinet.

Power Draw

Q. Does it make any difference in electric consumption and utility costs if the a.c. outlets on the rear panel of my receiver and tuner, rather than the wall sockets, are used as the power sources for my tuner, open-reel recorder, cassette deck, etc.?

BOBBY SPARKMAN
Houston, Tex.

A. No, since the total current consumption remains the same. The only possible problem is overload of the timer switch by excessive current draw through it. This is not likely to occur unless you are switching very large—or class-A—power amplifiers. To be safe, compare the maximum current or wattage rating of the timer switch with the total of the current or wattage ratings of the equipment it is switching.

Because the number of questions we receive each month is greater than we can reply to individually, only those letters selected for use in this column can be answered. Sorry!

SOLUTION.

Dear Bob Carver,

I bought a tuner four weeks before you introduced your TX-11 tuner. Now that I've read the AUDIC, STEREO REVIEW and HIGH FIDELITY reviews and have heard a demo at my audio dealer, I could kick myself. Couldn't you please put that special FM noise reduction circuit into an add-on unit? By the way, I have the C-4000 with Sonic Holography and your M-1 5t and I love them.

"Pleading in Suburbia"

Dear Bob Carver,

I am satisfied with my present receiver except when I try to listen to FM. The stations in this city are fantastic but the noise from multipath interference makes stereo listening almost impossible for me. However, several friends in my building have your TX-11 tuner and they get beautiful stereo FM reception. Is it possible for you to build your special FM circuit as a separate device so receiver owners can benefit from your technology, too?

"Hoping in Manhattan"

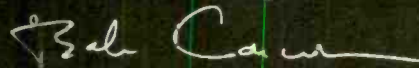
Dear "Pleading" and "Hoping."

I just did it! The Carver TX1-11, Asymmetrical Charge-Coupled FM Decoder designed to be used in the stereo mode of any FM tuner or receiver, will give you a 20 dB improvement of the stereo quieting (that's 10 times quieter!) and a 10 dB improvement in multipath noise reduction. And you'll still have fully separated stereo FM reception with space, depth and ambience.

Both my TX-11 and TX1-11 use the Asymmetrical Charge-Coupled FM Decoder circuitry which very significantly reduces the multipath noise and distant station hiss to which FM stereo is extremely vulnerable.

To get virtually noise-free stereo FM, simply connect the TX1-11 between your tuner and pre-amp or through the tape monitor/external processor loop of your existing system.

Good listening!



Bob Carver



TX1-11

CARVER

For information, please write to: Carver Corporation
P.O. Box 664, Woodinville, WA 98072

POWERFUL

MUSICAL

ACCURATE

Distributed in Canada by Evolution Audio, Ltd.

1984 Business Activity Planner

Imagine! A complete Appointment Book, Financial Record Keeping System, Travel Information Guide, Health and Fitness Aid and Directory... All in one book!

No matter how organized and successful you are today, our Planner will make you even better in the future... or your money back!



IT'S A GREAT GIFT IDEA, TOO!

IT'S AN APPOINTMENT BOOK! SEE-A-WEEK CALENDAR

■ A full week... at a glance! Time planning becomes easy when your appointments, meetings, luncheon and dinner engagements and special activities are in front of you.

HALF-HOUR TIME SCHEDULING

■ Convenient scheduling... seven days a week.

THINGS TO DO TODAY

■ Keep track of important follow-ups, telephone calls and correspondence.

SEVEN SNAP-LOCK RINGS

■ The seven ring format insures that your pages won't pull out... unless you want them to!

BEAUTIFUL, SOFT, LEATHER-LIKE BINDER

■ Padded front and back, your 9½ x 11½ Planner is comfortable to carry. You can take it with you wherever you go. The sturdy, permanent bookmark always keeps you in the right week and the two inside pockets enable you to keep all your important papers in your 1984 Activity Planner.

YOUR CHOICE OF IMPRINTS

■ Order the 1984 Business Activity Planner for everyone in your office... and select the cover imprint for

each person! Available with Business Activity Planner, Chairman of the Board Activity Planner, Executive Woman Activity Planner, or Executive Activity Planner.

IT'S MUCH MORE!

■ Each Section is Index-Tabbed for Instant Retrieval of Information.

FINANCIAL RECORD KEEPER

- 12 Income and Expense Reports
- 1984 Business Tax Calendar
- Executive Compensation Checklist
- Personal Investment Portfolio

HEALTH AND FITNESS AID

- Fat - Cholesterol - Calorie Charts
- Value of Various Exercises

- Substitution Chart for Better Health
- First Aid Tips

TRAVEL INFORMATION

- Average Temperatures for Most Major Cities
- Rank and Population of the Top 100 U.S. Cities
- Traveling Distances
- Toll-Free Telephone Numbers for Major Airlines, Auto Rentals, Hotels, Motels and much more!

MISCELLANEOUS

This section is filled with valuable information including Principal Holidays, French and California Wine Vintage Charts and more.

DIRECTORY

Places all emergency and important telephone numbers at your fingertips.

ZIFF-DAVIS ACTIVITY PLANNER PO Box 16-2354, Miami, FL 33116
Please send me the following 1984 Activity Planners at \$38.95* each plus \$5 per copy postage and handling. Outside U.S.A. add \$10 per copy postage and handling.

Specify quantity for each cover imprint ordered:

	QUANTITY DISCOUNTS (on total number of Planners)		
___ Business Activity Planner(s)			
___ Chairman of the Board Activity Planner(s)	6-20	10% off	(\$4 P&H each)
___ Executive Woman Activity Planner(s)	21-50	15% off	(\$3 P&H each)
___ Executive Activity Planner(s)	51-or more	20% off	(\$2 P&H each)

Payment enclosed. American Express Visa MasterCard Purchase Order enclosed.

Card No. _____ Exp. Date _____

Signature _____ SR01

Name _____

Company _____ (please print)

Address _____

City/State/Zip _____

*Florida residents add 5% sales tax.
SATISFACTION GUARANTEED or return
within 10 days for a prompt refund!

FOR FASTER SERVICE CALL TOLL FREE
800-327-1969
(In Fla. and Canada call (305) 595-8744)

Car Stereo

By Christopher Greenleaf and Julian D. Hirsch



YAMAHA YCT-800

THE Yamaha YCT-800 is an in-dash car stereo with a digital-synthesis AM/FM tuner and an auto-reverse cassette player. It has separate line-level outputs for front and rear speakers using short cables terminated in phono jacks. For our road tests we used it with Yamaha's YPA-800 power amplifier.

The operating functions of the YCT-800 are controlled by an efficient combination of knobs, ring controls, and pushbuttons. The knob and ring controls on the left of the panel switch the unit on and off, adjust the volume, control the left-right and front-rear speaker balance, reverse the tape-play direction, and return the cassette to the play mode from fast-forward or rewind. The right-hand controls adjust the loudness compensation and the bass and treble tone, switch the tuning mode from automatic to manual, and open the memory for storage of six AM and six FM station presets.

Next to the cassette slot is an eject button, and above it is a rocking bar switch for either tuning the radio or fast winding a tape. Above this bar is a display panel with LCD indicators for all of the unit's functions and operating settings. To its right are the six rectangular station-preset buttons, and below these are six smaller control buttons. One of these engages the Yamaha Music Search system (YMS), which can be used either to find the next recorded selection on a tape, in either direction, or to repeat one selection indefinitely. The tape-scan function successively samples the first 10 seconds of each selection on a tape. The SPATIAL EXPAND button engages an enhancer circuit that extends the breadth of the stereo image. The MONO/MTL button either sets the tuner for mono reception or the cassette player for 70-microsecond chrome/metal tape playback equalization. Another button selects Dolby-B noise reduction in the tape mode or switches between local and distant sensitivity in the tuner mode. The last button selects AM or FM.

Tape direction reverses automatically at the end of a side during normal playback, scanning, or either fast-wind mode; it can

be reversed manually by pressing the left-hand knob. There is a sensing circuit that automatically advances the tape to the beginning of the next selection, or to the end of the side, if there is a quiet section of more than 16 seconds. A unique Maintenance Monitor circuit keeps track of the total hours of tape play. One LCD indicator lights after twenty hours have elapsed, and a second glows after forty hours. When the user has cleaned and demagnetized the tape heads and capstans, the monitor can be returned to its zero setting.

The motorized tape-loading system draws a cassette into playing position; unlike most such systems, it loads the cassette with the exposed tape to the left. The tape bay is slightly recessed in the panel, and a hinged, spring-loaded flap shelters the tape opening from some of the airborne dust and dirt inevitably present in a car. The cassette automatically ejects when the YCT-800 is turned off. If the car's ignition is switched off without turning off the cassette player,

the pinch-roller disengages; when power is restored the cassette is ejected. Disconnecting the car's battery erases the unit's station-preset memories.

The YCT-800's adjustable loudness control, similar to that on Yamaha's home stereo components, is quite different from the way most manufacturers approach this function. It is not an on/off control but a continuous one. Turned fully clockwise, the knob sets the unit for a nominally flat frequency response. Turning it the other way gradually attenuates the midrange, centered at 1,000 Hz, until at its maximum there is a midrange dip of 20 dB. The result is, of course, a decrease in overall volume, which can be compensated for by use of the volume control. The bass and treble controls affect regions well away from the midrange, so the three controls together give much flexibility in modifying tonal balance.

The instruction manual is brief but clearly written and useful. Price of the YCT-800 is \$600. Yamaha Electronics Corp., USA, Dept. SR, 6660 Orangethorpe Avenue, Buena Park, Calif. 90620.

Lab Tests

Testing the YCT-800 was relatively straightforward. All of the figures in microvolts given here and in the accompanying table are based on the 75-ohm input impedance of the FM tuner section. The usable sensitivity in mono was 12.8 dBf (1.2 microvolts, or μV), with 50-dB quieting occurring at 15 dBf (1.5 μV). The stereo threshold—when the stereo indicator light came on—was 12 dBf (1.1 μV), and 50-dB quieting in stereo was 32 dBf (11 μV). The stereo separation was good. Automatic channel blending began at about 40 dBf (30 μV), and at 25 dBf (5 μV) the midrange separation was only 5.5 dB.

Other FM-tuner performance measurements included a capture ratio of 8.8 dB (a rather poor figure, but it seemed that the measurement was being influenced by the action of the tuner's various signal-level-controlled circuits, making it somewhat uncertain). The AM rejection was an excellent 68 dB at 65 dBf. The selectivity was good, 68.5 dB for alternate-channel (400-kHz) spacing and 8 dB with adjacent-channel

Hirsch-Houck Labs Measurements

FM mono usable sensitivity (75-ohm

input): 12.8 dBf (1.2 μV)

Mono 50-dB quieting sensitivity (75-ohm

input): 15 dBf (1.5 μV)

Stereo 50-dB quieting sensitivity

(75-ohm input): 32 dBf (11 μV)

Tuner signal-to-noise ratio at 65 dBf:

mono, 68.5 dB; stereo, 66 dB

Tuner distortion at 65 dBf: mono, 0.21

per cent; stereo, 0.3 per cent

FM frequency response (−3-dB limits):

20 to 17,500 Hz

Stereo separation at 100, 1,000, and

10,000 Hz: 38.5, 40, and 30 dB

Capture ratio at 65 dBf: 8.8 dB

AM rejection at 65 dBf: 68 dB

Alternate-channel selectivity: 68.5 dB

Adjacent-channel selectivity: 8 dB

Image rejection: 62 dB

AM frequency response (−6-dB limits):

26 to 2,800 Hz

Tape-playback frequency response

(standard BASF test tapes, −3-dB limits): 120- μs EQ—31.5 to 18,000 Hz forward, 31.5 to 4,200 Hz reverse; 70- μs EQ—31.5 to 18,000 Hz forward, 31.5 to 6,500 Hz reverse.

Tape signal-to-noise ratio (referred to 250 nWb/m at 315 Hz): 120- μs EQ—51 dB unweighted; 63 dB with Dolby-B CCIR/ARM weighting.

Flutter (at both start and end of cassette): 0.15 per cent CCIR weighted peak; 0.09 per cent JIS weighted peak

Tape speed accuracy: +1.25 per cent at start, +1.2 per cent at end

Fast rewind time for C-60 cassette: 98 seconds

Tone-control range: ± 11.5 dB at 100 Hz; +11.5, −12 dB at 10,000 Hz

Preamp output at clipping (into IHF load at 1,000 Hz): 1.9 volts

(200-kHz) spacing. The image rejection was a good 62 dB.

The tone controls had their rated characteristics, with maximum ranges at 100 and 10,000 Hz of about ± 12 dB. The loudness compensation was good, with an 18-dB control range and a maximum relative bass boost of 10 dB. The maximum audio output at the clipping point was 1.9 volts.

The tape transport worked silently and smoothly. Flutter level and speed were essentially the same at both the beginning and end of a cassette. The tape-playback frequency response in the forward direction was excellent. Measured using the new BASF standard test tapes, it was within ± 1.5 dB from 31.5 to 17,000 Hz with either 70- or 120-microsecond equalization. In the reverse direction, however, the highs were greatly attenuated, indicative of an azimuth-alignment error, possibly due to tape skewing (there was evidence of poor tape-to-head contact in reverse, which resulted in fluctuations in level at test frequencies above about 8,000 Hz). But as we've said before about auto-reverse players, you can always turn the tape over by hand.

Overall, the Yamaha YCT-800 is one of the more versatile auto radios we have tested, and it is all the more impressive because of its operating simplicity. Its appearance is not at all intimidating, although, as with all such units, careful reading of the instruction manual is a must if one is to use it to the fullest. Everything worked well, though we found it disconcerting when trying to measure tape noise levels to find the blank-skip feature shifting the player into high speed at inopportune moments!

We were struck by how closely the YCT-800's operating features (and performance) resembled those of a moderately priced home stereo receiver. Most of the FM performance characteristics of the YCT-800 would do justice to a typical home receiver, and the tape transport is comparable to many home decks. In a package of this size, that is no mean achievement. —J.H.

Road Tests

Several trips over our New York area test route and a weekend trip of several hundred miles subjected the Yamaha YCT-800 to a fair sampling of what any car audio component is likely to encounter during its tenure in a dashboard.

Unlike many contemporary car stereos, the YCT-800 has excellent AM performance. Stations I normally receive marginally or only intermittently came through clearly, and I noticed no interference from adjacent stations.

On FM I got clean, sharp signals from city stations well beyond where I can ordinarily receive them. Instead of hunting for another station, I could keep my favorite one tuned in for a dozen or even two dozen miles further from town. As the signal strength weakened, the tuner's noise-control circuitry reduced the stereo separation smoothly and gradually until it reached a mono condition; then a high-cut filter switched in and finally a soft-muting circuit to reduce the really bad hash. The blending seemed to begin at higher signal levels than with other tuners I have tested, though its operation was unobtrusive. Multipath noise

tended to be much less jarring than I am used to hearing from car stereos, but there was also somewhat more of it in my favorite high-interference test areas.

The cassette player loads and plays cassettes quite gently. It easily handled my "worst-case" C-120 test cassette, an old, cheap, off-brand product with tight hubs. Transports that can play this tape with no audible problems and without damage can play anything! The transport mechanism also appeared to be stable and resistant to shock. I noticed an occasional warble driving over the usual stretch of granite-block back streets in Brooklyn, but there was no audible flutter or loss of tape-to-head contact. The forward tape playback sounded exceptionally clean, but in reverse there was some dulling on tapes with considerable high-frequency content.

The tape controls are close together and too easy to activate. When reaching to with-

"Most of the FM performance characteristics of the YCT-800 would do justice to a typical home receiver."

draw a cassette I often pressed the MONO/MTL or the SPATIAL EXPAND button accidentally. And pushing in the fader ring to adjust it almost invariably changed the tuner setting or started fast winding of the tape. The cassette-eject button was also prone to such hair-trigger response, though to a lesser degree. The most irksome thing about using the tape player, however, was the automatic blank-skip function, which cannot be defeated. On classical music with a wide dynamic range, the low-level signals are read by the sensor as unrecorded passages. If they last for 16 seconds, the player skips to the next part of the tape that's loud enough to be perceived as a selection—sometimes just a little further on in the same track! (This would not be a problem with most popular-music tapes since these tend to be recorded at more constant levels.) The cueing was always accurate after a blank skip or when I used the YMS selection search or scan functions.

The tone and loudness controls offer plenty of versatility, and I did not miss an equalizer. Playing the midrange (loudness) off against the ends (bass, treble) enabled me to tailor the sound to my car and to correct any perceived tape equalization problems quickly and easily. The continuously variable loudness compensation gives the user much more control than the usual on/off switch. The on/off spatial-expansion circuit was more blatant in its effect but did succeed in giving breadth to the imaging. Since the effect also changed the equalization, it was not equally enjoyable with all recorded instruments, but that's what the tone controls are there to fix. In some cases I even got a better tonal balance with the expansion on.

I thoroughly enjoyed the performance of the YCT-800. The Maintenance Monitor is a great idea, and the few vexing characteristics of the unit do not greatly detract from this obviously fine car stereo from an innovative company. —C.G.

A UNIQUE OPPORTUNITY TO JOIN THE WORLD'S FIRST DIGITAL AUDIO CLUB.

For those who want to attain an intimate understanding of the remarkable technology behind Sony's compact disc players, Sony introduces the Digital Audio Club—a source of information about digital audio from the company most qualified to provide it.

Join the club now, and you'll receive our quarterly newsletter, "The Sony Pulse"; *The Sony Book of Digital Audio Technology* (with more than 300 pages of facts and details); a 30" x 40" compact disc poster; extensive information about Sony digital audio products; and a CD software catalog. You'll even receive a digitally-recorded CD sampler.

To join, simply mail the coupon below, along with a check or money order for \$15 (which covers postage and handling), to Sony Digital Audio Club, P.O. Box 161, Lowell, MA 01853. But do it soon, because quantities are limited.

Name _____
Address _____
City _____
State _____ Zip _____

Sony Digital Audio Club
P.O. Box 161, Lowell, MA 01853
Please allow 4-6 weeks for delivery.



SONY
THE LEADER IN DIGITAL AUDIO™

SONY UNVEILS WORLD'S FIRST COMPACT DISC PLAYER

Exp
Hi

TOKYO, Oct. 1, 1982—In one of the most eagerly anticipated events in the history of high fidelity, Sony engineers today introduced the world's first digital audio compact disc player. A dramatic departure from conventional audio technology, the new player uses a laser beam and several microprocess-

may
to sei
State C
the proc
his option
duly seen
Th
ho

ENTER THE WORLD OF DIGITAL AUDIO WITH THE COMPANY PRESENT AT THE CREATION.

In the beginning, there was analog sound. And through the generations, its supremacy remained largely uncontested.

Then Sony engineers created the CDP-101 digital audio compact disc player—"the most fundamental change in audio technology in more than eighty years."*

For the first time, audiophiles could enjoy the total freedom from distortion that was previously exclusive to concert halls. An incredible dynamic range. And nearly indestructible software.

Predictably, the Sony CDP-101 spawned a host of imitators. But while these other versions seemed to spring up virtually overnight, the process of creating the CDP-101 was considerably more deliberate.

Along the way to the CDP-101,

for example, Sony invented digital audio processing.

Sony established the industry standards that are most directly responsible for the remarkable sound of the compact disc: the 16-bit linear quantization system, and the CIRC error-correction code.

And Sony developed the world's widest range of professional digital audio equipment. Including the digital mastering system used in the mastering of every compact disc made today.

The benefits of Sony's long head start in digital audio are, of course, manifest in the CDP-101. Such as filters that provide excellent frequency response without compromising the attenuation of ultrasonic noise. The same digital-to-analog converter used in the legendary PCM-F1. The fastest

track access and greatest immunity to shock in the industry.** As well as convenient horizontal loading and supplied wireless remote control.

So if you're confused by the current deluge of compact disc players, your choice is actually much clearer than you think.

You can buy one of the players inspired by Sony.

Or you can buy the inspiration itself.

SONY.

THE LEADER IN DIGITAL AUDIO.™



© 1983 Sony Corp. of America. 1 Sony Drive, Park Ridge, New Jersey 07656. Sony is a registered trademark of the Sony Corporation. *Quoted from *High Fidelity*. **Reported in *Stereo Review*.

CIRCLE NO. 26 ON READER SERVICE CARD

Technical Talk

By Julian D. Hirsch



How Audible Is Distortion?

WE all know that audio distortion is a bad thing, that it needs to be eliminated or at least minimized if we are to enjoy the full benefits of today's advanced hi-fi technology. I have no argument with that—favoring distortion (at least outside of certain rock-music circles) must surely be equivalent to denouncing the flag and motherhood! Still, this is a less than ideal world, and compromise is an inherent part of life. And so we must learn to live with a certain amount of distortion, which, like death and taxes, will always be with us.

There is literally an infinity of possible distortions of an audio signal, but, fortunately, not all of them produce the same audible effects even if they are usually expressed in the same format (usually "x per cent" or the mathematically equivalent "-y dB"). One broad distinction is between *linear* and *nonlinear* distortions, of which we'll consider only the latter in this article. (Examples of linear distortions are nonuniform frequency response and the various forms of phase distortion.)

Nonlinearity in a music system or component means that the output signal does not vary in exact proportion to changes in the input signal level (that is, the input and output waveforms are not identical in shape). For example, in a linear system or component, doubling the amplitude of the input signal should precisely double the output level. If the latter goes up by a factor of 1.99 or 2.01, the system is nonlinear, and we could express this nonlinearity as a distortion of "0.5 per cent" or as 1 part in 200. (Filters—such as tone controls—also alter

output waveforms, but they do so in a mathematically linear fashion and thus, at least theoretically, do not generate nonlinear distortion.)

Strangely enough, while minute quantities of some nonlinear distortions may be unpleasantly audible, others measuring hundreds of times greater may be quite imperceptible to the listener. It is misleading and incorrect to conclude that, say, 0.1 per cent distortion is less audible than 1 per cent distortion or that an amplifier with 0.002 per cent distortion is necessarily "better" than one having 1 per cent distortion at the same power output. Either of those assumptions *might* be correct, but it is much more likely that there would be no significant correlation between the distortion figures and the sound of the system.

One important type of nonlinear distortion is *harmonic distortion*, usually measured with a sine-wave input signal, which consists of only a single frequency. Any departure from an ideal sine-wave shape in the output waveform is equivalent to the addition of one or more frequencies at multiples of the original, or "fundamental," frequency. These *harmonics* can be measured in any of several ways, and their amplitude is expressed as a percentage of the amplitude of the fundamental frequency. If (as usually happens) there are several different harmonics present, their combined magnitude (called *total harmonic distortion* or *THD*) can be computed by squaring the amplitude of each one, adding all the squared values, and taking the square root of the total.

The lower-order *even* harmonics (particularly the second, at twice the fundamental frequency) can affect the timbre of the sound but are rarely harsh or unpleasant even when present at a considerable level. Low-order *odd* harmonics are less acceptable, but moderate amounts of third-harmonic distortion are not likely to offend most listeners. Certain types of distortion mechanisms, however, create *high-order harmonics* (such as the ninth, the eleventh, and so on), and these have been shown to be audible and unpleasant in extremely low amounts under *some* conditions. The audibility of any form of distortion depends greatly on the nature of the test signal. A minute amount (as little as 0.05 per cent) of almost any high-order harmonic added to the usual 1,000-Hz sine-wave signal may be audible as a separate, higher-pitched component of the sound. But if the test signal consists of two or more different signal frequencies, as in certain *intermodulation* (or *IM*) distortion measurements, the distortion level may have to be many times greater before it can be detected by ear. And if the program is complex (music or speech), it is often impossible to hear surprisingly high amounts of distortion—up to 6 per cent or more—because the sound of the distortion is psychoacoustically *masked* by the program signal.

Furthermore, individual people differ widely in their ability to detect various types of distortion as well as in their tolerance for a distortion once it has been detected. For example, low-order harmonic distortion may merely change the sound of

Tested This Month

Acoustic Research's New AR Turntable • Shure ML140HE Phono Cartridge
Klipsch kg² Speaker System • Harman Kardon hk 590i AM/FM Receiver
Mitsubishi DP-103 Compact Disc Player

A FURTHER INDUCEMENT TO OWN THE SONY OF COMPACT DISC PLAYERS: FREE COMPACT DISCS.

YOUR FIVE FAVORITE CD TITLES:

(And five alternatives.)

1. _____
2. _____
3. _____
4. _____
5. _____

The new Sony Compact Disc Players deliver sound that's almost immeasurably beyond anything you've ever heard.

And now through January 31, 1984, when you purchase a Compact Disc Player from Sony, the people who developed the Compact Disc player, Sony will deliver to you five free compact discs (a retail value of around \$100) courtesy of the CBS family of labels (Columbia, Epic, and Masterworks), Warner Bros., Elektra/Asylum, Telarc, and Atlantic.

Your Sony CD dealer has the catalog of available titles. Just fill in your favorite choices on this

coupon, along with 5 alternatives, and send it with proof of purchase and your warranty/registration card to the address below marked "Free CD Offer." Allow 4-5 weeks for delivery, and the discs that are part of "the most fundamental change in audio technology in more than eighty years" (High Fidelity), will arrive at your door.

Offer limited to purchase of one Sony Compact Disc Player per household. Offer available only in limited areas within the continental U.S.A. Void where prohibited by law.

All coupons must be postmarked by February 28, 1984.

YOUR NAME, ADDRESS, ETC.

Name _____ SR01
 Address _____
 City _____
 State _____ Zip _____

**CBS
W/E/A
TELARC**



Free CD Offer, P.O. Box 163, Lowell, MA 01853.

an instrument slightly, certainly less than might result from the performer's using a different make of violin or clarinet. This effect might be clearly perceptible or even disturbing to the performer or to a fellow musician yet be of no importance whatever to other listeners, even those with considerable musical sophistication.

I am not trying to suggest that nonlinear distortions can be ignored in judging or enjoying a music system. Certain types are intolerable to almost everyone. For example, sharp discontinuities in the waveform caused by amplifier clipping, excessive crossover distortion in an amplifier's output stages, or (for me, worst of all) a mistracking phono cartridge produce large amounts of very high-order harmonics, usually the odd ones, which are the most objectionable. A rather small amount of ninth- or eleventh-harmonic distortion is likely to produce a negative reaction from any listener who appreciates good sound. As in any aspect of listening to music, it is not possible to be dogmatic about the exact audibility threshold of such distortion. In general, distortion frequencies that are not also present in the program material and thus cannot be masked by the music are the ones most likely to be audible and irritating.

In view of all this, it is hard to justify the emphasis placed by some amplifier manufacturers on reducing their products' distortion to nearly unmeasurable levels (under 0.001 per cent at normal listening levels in many current amplifiers and receivers). An amplifier is but one part of a music system, and it is by far the most nearly perfect one in its reproducing characteristics and thus

the least likely to contribute audible distortion under normal conditions. (I am not concerned here with the sonic subtleties attributed to some amplifiers—which are probably due to frequency-response behavior—but with objective and measurable nonlinearities.) Only a true clipping overload is likely to produce a significant amount of harsh, high-order harmonic output from an amplifier, and even that may not be audible unless its duration is exces-

sive. Record playback always produces distortion percentages of some tenths of a per cent at low signal levels and of several per cent at high levels—in contrast with the amplifier's probable maximum of 0.05 per cent at any level below clipping.

The loudspeaker, as most of us realize, is also not an ideal transducer. The nonlinear distortion of a well-designed speaker system can be quite low under most conditions (above 100 Hz it may be only a small frac-

“ . . . most of the common ratings for nonlinear distortion in an electronic component have little to do with how that product might sound . . . ”

sive. Brief moments of clipping can easily pass unnoticed, being masked by the program that produces them.

Still, our reproduced music does not always sound as clean as we would wish it to be, so *something* must be distorting it audibly. And so it is. The playback signal from an analog phonograph record contains enormous amounts of distortion, almost never less than ten times the distortion created by even a mediocre amplifier and more likely hundreds or thousands of times greater at high signal levels. This is the case even with the finest direct-to-disc or digitally mastered LP played on the best turntable with the most highly regarded pickup on the

tion of a per cent at normal listening levels), yet it is inevitably many times greater than any distortion contributed by the amplifier. And this ignores the speaker's inherent problem of trying to achieve the desired acoustic response in the room, as compared with the amplifier's comparatively simple task of increasing the level of, or amplifying, an electrical signal without adding any distortion.

The conclusion I am approaching is that simple nonlinear distortions (harmonic and intermodulation) are by no means as serious a detriment to ideal sound reproduction in the home as many of us believe. Returning for a moment to the phono cartridge and the loudspeaker, we find that each of these transducers can not only introduce small, relatively inaudible amounts of nonlinear distortion but can also create huge amounts of very obvious and unmusical distortion when pushed beyond their limits. These effects—whether from cartridge mistracking, excessive excursion of a speaker cone or voice coil, or even the buzz of a resonating or loose speaker grille assembly—are truly grating and unacceptable even to someone with no previous exposure to a good music system. And since these distortions are not intrinsic in the normal operation of the component but result from a defect or incorrect operation, they are not specified by the manufacturer or anyone else.

To sum up, most of the common ratings for nonlinear distortion in an electronic audio component have little or nothing to do with how that product might sound in your system. They usually describe effects whose audible contribution is minuscule compared with those of the record-player/record combination and the speaker system. And, in my opinion, even those two sources of nonlinear distortion are almost trivial compared with the *linear* distortions that precede and follow them in the music-reproduction chain: those that derive from the original recording environment, the microphone setup, and the mixdown, as well as from your own listening room. But that is another matter, which we will have to deal with in a future column. □



"I feel like a rat doing this to you, Vogel, but you know how tough the competition is out there, and I'm not letting you out until you come up with a state-of-the-art speaker!"

Test Reports start on page 31

7 mg. "tar", 1.1 mg. nicotine av. per cigarette by FTC method.

Winston. America's Best.



Join the first team.
Reach for Winston.

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

Buff Stuff from TDK.



You, the audiophile, are the toughest critic we know when it comes to sound performance. You're very selective in deciding the perfect equipment for your recording and listening needs.

And you're just as selective in choosing your recording tape. TDK knows that. So we developed a line of high performance audio cassettes that meet your critical requirements.

We call it the TDK Professional Reference Series.

You're probably using TDK SA-X high bias cassettes now because of their superior performance characteristics. In addition, TDK has developed normal bias AD-X which uses TDK's famous Avilyn particle formulation and delivers a wider dynamic range with far less distortion than ever before. Plus, TDK's unique metal bias MA-R cassette which features high-energy performance in a one-of-a-kind unibody

die-cast metal frame.

The TDK Professional Reference Series...it'll sound impressive to your ears. So share the pleasure with your friends; they'll appreciate it.

 **TDK**[®]
THE MACHINE FOR YOUR MACHINE

Equipment Test Reports

Hirsch-Houck Laboratories: Julian D. Hirsch and Craig Stark

Acoustic Research's New AR Turntable



Photos by Roy Schneider

ABOUT a quarter of a century ago, Acoustic Research developed a turntable whose simplicity, outstanding performance, and low price earned it a unique place in the hi-fi marketplace—and something close to classic status among knowledgeable phonophiles. Aware of the degradation of sound quality caused by acoustic feedback, AR's founder, Edgar Villchur, designed a turntable (actually a complete record player, since it was available only with an AR tone arm) that was virtually immune to external mechanical excitation.

In addition, the AR turntable essentially eliminated audible rumble by using a very small, low-torque twenty-four-pole a.c. motor (similar to those in electric clocks), which turned at only 300 rpm instead of the 1,800 rpm of the four-pole induction or synchronous motors commonly used at the time. The motor's fundamental vibration frequency was thus lowered from the very audible 30 Hz of the higher-speed motors to an inaudible 5 Hz. Since the torque of the AR turntable's motor was relatively low, its platter mass was kept correspondingly small, and it was driven via a light rubber belt. Speeds were changed (between 33 $\frac{1}{3}$

and 45 rpm) by removing the platter and *manually* shifting the belt to a different-diameter pulley.

The original AR turntable was upgraded several times before being withdrawn from the market a few years ago, but there has evidently been sufficient demand to warrant designing and manufacturing a new model with the same basic virtues. The *new* AR turntable that we tested for this report is, in many important respects, almost identical to its respected ancestor. Its styling is much handsomer, however, and it is available either with an AR tone arm or with a "blank" mounting board that can accommodate any of a number of high-quality tone arms from other manufacturers. This option disposes of one of the more persistent and valid criticisms of the earlier model, which paired a superb turntable with a rather old-fashioned and hard-to-replace tone arm.

The key to the remarkable acoustic isolation of both the old and new AR turntables is the rigid coupling of the tone arm to the platter by a T-shaped cast-metal plate. This entire arm-and-platter assembly is then suspended on damped springs from the turntable's

motorboard and base. The extremely soft three-point suspension (we would estimate its resonant frequency as about 2 or 3 Hz) makes it possible for the base or dust cover to vibrate with rather large amplitudes at audio and infrasonic frequencies without transmitting this motion to the arm or platter. And even if the arm and platter *do* move as a result of external vibration, they do so as a single unit and therefore do not affect the output from the cartridge.

The cast-aluminum outer platter of the AR turntable weighs about 2 $\frac{1}{2}$ pounds, and the total weight of the platter is given as 3.9 pounds in the specifications. The record mat is a thin disc of felt-like material. The new AR tone arm is a straight tubular design with a low-mass removable headshell. The counterweight, which is moved from a balanced condition to set the tracking force, carries a scale calibrated from 0 to 3 grams in steps of 0.5 gram. A similarly calibrated antiskating dial is mounted on the arm base near the arm-lift (cueing) lever, the downward action of which is viscous damped. Attached to the arm base is a clip that serves as an arm rest or retainer.

The base of the AR turntable is made of

oiled walnut and is supported on small rubber feet (which do not serve any isolating function and merely protect the supporting surface). A rocker switch on the top of the base controls the power to the motor, and a small pilot light on the front surface glows when it is on. A hinged clear-plastic dust cover remains open when fully raised (but not at intermediate angles). The turntable's dimensions are 18³/₁₆ inches wide, 15¹/₄ inches deep, and 7 inches high with the cover closed (a 17-inch vertical clearance is needed to open the cover). It weighs 18 pounds. Price: with the AR tone arm, \$429.99; without the arm (but including a blank tone-arm mounting plate), \$299.99. Acoustic Research, Dept. SR, 10 American Drive, Norwood, Mass. 02062.

● **Laboratory Measurements.** We installed a Shure V15 Type V cartridge in the AR tone arm for our tests. The measured capacitance of the arm and signal-cable wiring was about 80 picofarads per channel (the nominal rating is 85 pF) with a very low interchannel capacitance of 2 pF. We set the stylus overhang with the aid of the plastic jig furnished with the turntable, and the resulting tracking error was less than 0.33 degree per inch (barely measurable). After the arm was balanced, the actual vertical tracking force was about 0.1 gram higher than the scale setting (this is a function of how accurately the arm is balanced when the player is first set up).

The effective arm mass (exclusive of the cartridge) was a relatively low 9 grams. It is rated at 13 grams, but different measuring techniques can easily account for the difference. With the rather compliant V15 cartridge the arm system resonated at an ideal frequency, 10 Hz. The antiskating dial had to be set about 0.5 gram higher than the tracking force for optimum correction. Be-

cause of the floating suspension, considerable care was necessary to avoid jarring the arm when using the cueing lever, but after some practice we were able to use it effectively. The antiskating torque caused about 5 seconds of a record to be repeated each time the arm was lowered, and the descent took 4 to 5 seconds.

The turntable speed was about 0.3 per cent fast, and its flutter was a very low 0.055 per cent weighted rms (JIS) or ±0.08 per cent weighted peak (DIN). The measured flutter was largely a result of test-record eccentricities, and its components were principally below 10 Hz. As with the original AR turntable, rumble was very low, measuring -40 dB unweighted (-46 dB in the lateral plane) and -64 dB with ARLL weighting. The rumble had a broad, random frequency spectrum, and the measurement may have been limited by our particular test setup and the inherent rumble of our silent-groove test records.

● **Comment.** Anyone who saw the old AR turntable being demonstrated cannot forget how it could be pounded with a hammer (actually, a soft mallet) without skipping or even adding an audible thump to the music. The new AR turntable is, if anything, even better than the old one in this respect. We were able to strike it as hard as we wished with a fist or open palm with absolutely no audible effect on the program. The isolation system should make the turntable highly resistant to base-conducted vibration, and we expected it to excel in this test. Even so, we were not prepared for a measured immunity to external vibration that was 20 to 40 dB better than that of any other turntable we have tested in the past couple of years. (Because of changes in our test setup, a close comparison to still earlier units is not feasible.) It is safe to say that the new AR turn-

table is, by a comfortable margin, the best-isolated record player we have ever used or tested. The only significant transmission took place below 20 Hz, with a minor response at 50 Hz. Anyone who has had problems with acoustic feedback need look no further than the new AR turntable for a solution.

As we noted earlier, one of the few valid criticisms of the old AR turntable concerned the tone arm it included, which was lacking in refinement even by the standards of that time. The tone arm available with the new AR turntable is a very good one that is thoroughly compatible with the turntable and with almost any cartridge one might wish to use. For more demanding audiophiles, however, the blank-mounting-board option permits using the turntable with almost any other arm available.

Our only criticism of the new AR turntable concerns the considerable delicacy needed to handle its arm-cueing lever and the fact that the arm rest lacks any locking device. It is only too easy to knock the arm from its rest clip accidentally, and in the interest of stylus longevity we soon developed the habit of keeping the lift lever up at all times when not playing a record.

The new AR turntable appeals powerfully to our sense of good design. It is almost purely functional yet very attractively and tastefully styled. A simpler record player could hardly be imagined, and, like its predecessor, it should give many years of service with no more maintenance than a periodic belt replacement. And in terms of acoustic isolation, even pounding the base with a hammer (not really a recommended practice, of course) is unlikely to do more than mar the handsome finish.

—Julian D. Hirsch

Circle 140 on reader service card

Shure ML140HE Phono Cartridge



THE ML140HE is one of a new series of Shure cartridges incorporating many of the innovations originally introduced in Shure's V15 series in newly designed cartridge bodies. Replacing the traditionally chunky, block-like Shure cartridge shape is a slim, tapered body whose total weight of 4.5 grams is about 2 grams lower than that of the company's older models. The coil and core assembly, rigidly encapsulated in plastic, features interlocking laminated pole pieces and coil leads terminated in gold-plated pins.

The user-replaceable stylus assembly includes the integral hinged Dynamic Stabilizer first introduced in the V15 Type IV and later incorporated in other Shure cartridges. In normal operation, its conducting carbon-fiber brush rides in the groove to remove dust and debris and to drain away any accumulated static charges on the vinyl surface. The pivots of the hinged assembly contain a viscous damping material, so that the stabilizer actually damps vertical arm/cartridge resonances and improves the ability of the pickup to track warped records. The

entire stabilizer can be swung up out of the way if one does not wish to use it; in its fully lowered position it also serves as a stylus guard.

The ML140HE has a Side-Guard feature that raises the stylus into the cartridge if it is accidentally scrubbed from side to side, thus minimizing the possibility of stylus damage. The stylus itself is a nude-mounted diamond with a hyperelliptical tip (0.2 x 1.5 mils) that has been specially polished to reduce record wear. The cantilever (like that of the V15 Type V) is a hollow beryllium

Why Your First Compact Disc Player Should Be A Second Generation Mitsubishi.

No wow. No flutter. Dynamic range over 90dB. Plus complete freedom from dust, dirt, surface noise, rumble and speaker feedback.

The truth is, the basic technology of the digital audio disc is so vastly superior to analog sound, that deciding on a player becomes very tricky indeed.

That is, until you check the record.

YOU DON'T BECOME A DIGITAL AUDIO EXPERT OVERNIGHT.

Most companies now introducing digital audio players were just recently introduced to digital audio themselves.

Mitsubishi has been at the leading edge of digital audio research since the beginning. Moreover, much of the second generation technology found in the Mitsubishi DP-103 compact disc player you see here is a direct result of that experience.

For example, the DP-103 employs a three-beam optical pickup in place of the conventional single beam. These two insurance beams constantly correct for imperfections in the disc, ensuring stable, error-free tracking.

The retaining springs for the laser optics pickup, which are susceptible to vibration, have been replaced by Mitsubishi's exclusive linear-sliding cylinder—in effect eliminating a problem before you've had one.

These second-generation refinements also allow simplified servo circuitry which results in fewer parts, less to go wrong.

The play, fast forward, fast reverse, skip, and repeat functions are yours all at the touch of a button. With track number and elapsed time visually displayed. And when you've experienced the music that emerges in its full power and range, every nuance etched in magnificent relief, you'll know you've heard the future.

Like stereo componentry that preceded it, the compact disc player of the future will offer improved technology at a lower price.

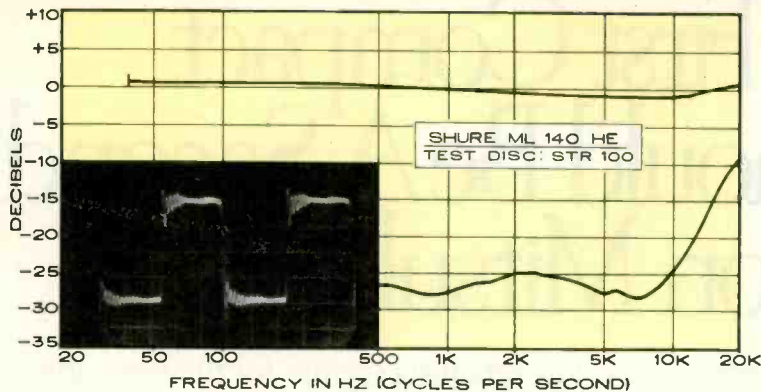
Just like the Mitsubishi DP-103 does. Today.

 **MITSUBISHI**

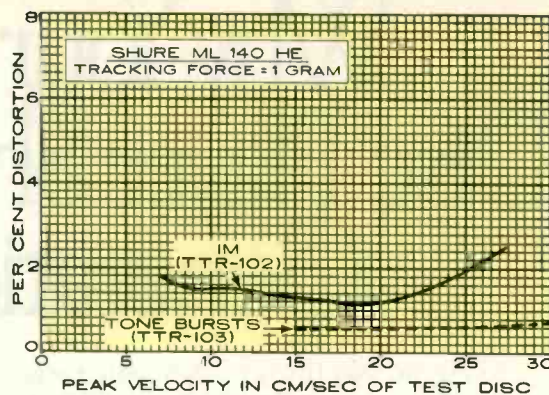
Even If You Can't Have The Best Of Everything,
You Can Have The Best Of Something.

Mitsubishi Electric Sales America, Inc., 3030 E. Victoria St., Rancho Dominguez, CA 90221.





In the graph at left, the upper curve represents the frequency response of the cartridge. The distance (measured in decibels) between it and the lower curve is the average separation between the two channels (anything above 15 dB is adequate). The inset oscilloscope photo shows the cartridge's response to a recorded 1,000-Hz square wave, which indicates resonances and overall frequency response (see text). At right is the cartridge's response



to the intermodulation-distortion (IM) and 10.8-kHz tone-burst test bands of the TTR-102 and TTR-103 test records. These high velocities provide a severe test of a phono cartridge's performance. The intermodulation-distortion readings for any given cartridge can vary widely, depending on the particular test record used. The actual distortion figure measured is not as important as the maximum velocity tracked before a sudden increase in distortion occurs.

tube, which is said by Shure to provide a very high ratio of stiffness to density. Actual transduction of stylus motion to electrical output is done by a tiny magnet at the pivoted end of the cantilever, near the open ends of the pole pieces.

The ML140HE has a rated output of 4 millivolts per channel at 5 cm/s peak groove velocity, with a channel separation of at least 25 dB at 1,000 Hz and 15 dB at 10,000 Hz. The channel outputs are balanced within 2 dB. Optimum tracking force is 1 gram (1.25 grams maximum), but to compensate for the weight of the stabilizer the arm's vertical force must be set 0.5 gram higher. Price: \$190. Shure Brothers, Inc., Dept. SR, 222 Hartrey Avenue, Evanston, Ill. 60204.

● **Laboratory Measurements.** The total effective mass of the ML140HE cartridge and the test arm was 15 grams, and the system's 10-Hz resonant frequency was in the ideal range. In order to measure this frequency (using the Shure ERA V "Audio Obstacle Course" test record), it was necessary to swing the Dynamic Stabilizer up so that it did not contact the record. With the stabilizer in use, the vertical resonance of

the arm/cartridge system was so fully damped no arm movement could be seen.

The output at a 3.54-cm/s groove velocity at 1,000 Hz was 4.1 millivolts per channel, with the channel levels matched within 0.1 dB. The cartridge tracked the Fairchild 101 test record (30 cm/s at 1,000 Hz) at 0.75 gram, the Cook 60 (32 Hz) at 1 gram, and the 70-micrometer level of the 300-Hz tones on the German HiFi #2 record at 1 gram; at the rated maximum force of 1.25 grams, it tracked the 80-micrometer level of the HiFi #2 record. The cartridge's frequency response was affected only slightly by changing the load capacitance from 150 to 385 picofarads. This increased its output in the 5,000- to 15,000-Hz range and decreased it between 15,000 and 20,000 Hz by a maximum of slightly more than 1 dB.

We used a load of 225 picofarads for our measurements, and the response was within +0.5, -1 dB from 40 to 20,000 Hz, both channels yielding identical response curves. The channel separation was 25 to 30 dB from 500 to 10,000 Hz, 13 dB at 15,000 Hz, and 10 dB at 20,000 Hz. The intermodulation distortion was measured with Shure's TTR-102 test record; readings were between 1.2 and 1.8 per cent from 7 to 24

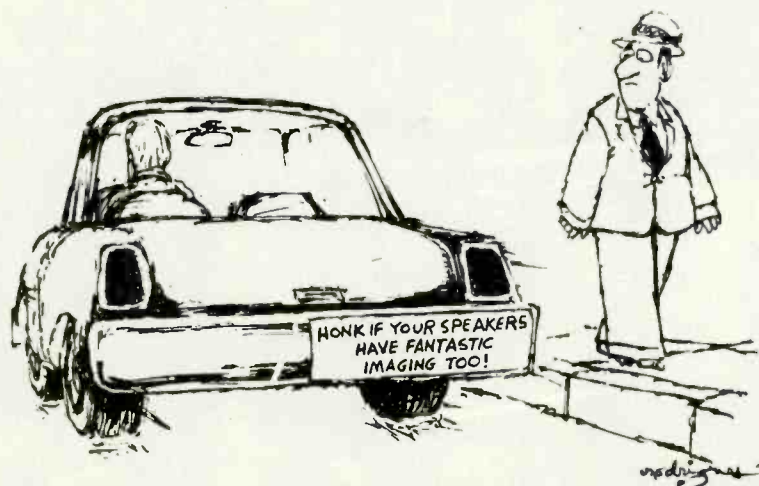
cm/s and 2.5 per cent at 27 cm/s. High-frequency tracking distortion, measured with the 10.8-kHz tone bursts of the Shure TTR-103 test record, was 0.6 to 0.7 per cent from 15 to 30 cm/s. Using the CBS STR 112 test record, the square-wave response showed a slight overshoot (about 15 per cent) on the 1,000-Hz waveform followed by lower-level ringing at about 40,000 Hz; the ringing is on the record and only shows up with a cartridge that can track this high. With the ERA IV "Audio Obstacle Course" record, it showed traces of mistracking only on the maximum level of the flute section. The ERA V record revealed a trace of mistracking on Level 6 (the maximum), indicating that the "trackability" of the ML140HE is well above average.

● **Comment.** The Shure ML140HE embodies almost every feature of the top-of-the-line V15 Type V (with only slightly lower-rated trackability) at a substantially lower price. While perhaps no one of its features could be said to give the cartridge a decisive competitive advantage, all of its characteristics add up to make it a rather impressive product.

The proof of a cartridge is in the listening, and in our listening tests the ML140HE did a first-rate job with a variety of records. It was unfailingly smooth and clean sounding, it tracked warped records in a superior fashion when used in a low-mass tone arm, and it was almost totally noncritical with respect to its loading by the amplifier and cable capacitance.

Although we could not directly measure the ML140HE's frequency response above the audio range, it is plain from its square-wave response that the low-mass stylus system and the numerous design improvements in the fixed magnetic system give it the sort of extended high-frequency response once associated only with moving-coil designs. It is an excellent cartridge in every respect.

—Julian D. Hirsch



Circle 141 on reader service card

(Continued on page 37)

WHO DARES CALL THIS CAR STEREO?



If you think this is just another car stereo, please reserve judgment until you've read about what's underneath the lights, buttons, and knobs.

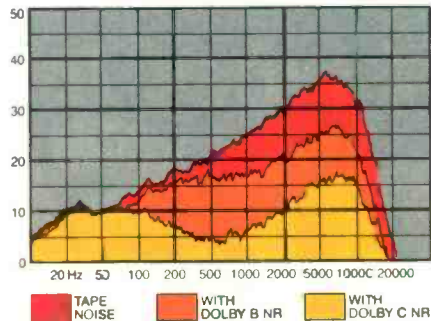
All of it is designed to make listening to mobile audio more thrilling than ever before.

Let's talk specs

Nothing better illustrates the revolutionary advancements of our FTX 180 better than its specifications.

First we started with a remarkable new technology: Dolby "C".* Sanyo's FTX 180 is the first car stereo that can actually remove up to 20dB of tape hiss and background noise... all without sacrificing one iota of music.

Next, we designed an all-new power amplifier circuit that pumps out 15 watts per channel with only 0.3% total harmonic distortion. That means you can turn



up the volume and get the thunderous lows and crystalline highs that the original musicians intended you to hear... with no audible distortion!

Then we combined our FM Optimizer circuit with a 12-station frequency synthesized tuner. The result: it not only locks onto the exact frequency you want, but is virtually impervious to annoying noise.

Let's talk features

Here are just a few: 1) automatic tape searching; 2) LCD digital

station frequency/time readout; 3) switchable Dolby B/C; 4) metal tape compatibility; 5) ultra-long life S.S.P. tape head; 6) special bass equalizer with triple turn-over controls; 7) full auto-reverse; 8) fader control for balancing 4-speaker setups; 9) standby switch, so you can listen to radio while fast-winding a tape.

We refer to the FTX 180 and the other Sanyo FTX Series models as "mobile studio sound systems".

Admittedly, that's a pretty lofty description. But once you hear one in your car, you won't dare call it anything less.



SANYO

CIRCLE NO. 12 ON READER SERVICE CARD

KING: 17 mg. "tar", 1.3 mg. nicotine, 100's: 17 mg. "tar",
1.4 mg. nicotine, av. per cigarette by FTC method.

You've got what it takes.
Salem Spirit

*Share the spirit.
Share the refreshment.*

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.





Klipsch kg² Speaker System

THE Klipsch kg² (pronounced "kay-gee two") is a compact two-way speaker system with a passive radiator to extend the bass response of its woofer. The 8-inch woofer has a 2½-inch-diameter voice coil and a polypropylene cone. The crossover from the woofer to the 1-inch hard-dome tweeter is at 1,800 Hz, and the tweeter is front-loaded by a short horn with a 2½-inch mouth diameter.

The passive cone, about 10 inches in diameter, is on the rear surface of the enclosure. According to Klipsch, it becomes operational below about 70 Hz and is most effective when the speaker is placed about ½ to 1 inch from the wall; in that position the low-bass output emerges from the narrow slot created around three sides of the speaker cabinet. The instructions suggest, however, that users experiment with different locations (including corner placement for maximum bass) and note that the speaker can be mounted horizontally or vertically.

The rated frequency response of the kg² is 45 to 20,000 Hz ± 3 dB on axis (down 6 dB at 35 Hz). The system's low-frequency cut-off is at 35 Hz, and, since the woofer is essentially unloaded below that frequency, Klipsch recommends that the speaker be used with an amplifier that has a good infrasonic filter to prevent overdriving it with signals below the audible range. A 1-ampere fuse in the speaker line is also suggested as a safety precaution. The angular coverage of the kg², between its -6-dB response points, is about 100 degrees in both the horizontal and vertical planes. The system has a nominal 4-ohm impedance (2 ohms minimum) and a rated sensitivity of 90.5 dB sound-pressure level at 1 meter with a 1-watt input of band-limited pink noise. It can handle 65 watts of pink noise for 8 hours without damage and is recommended for use with amplifiers that are rat-

ed between 10 and 120 watts per channel.

The enclosure of the Klipsch kg² is 18⅞ inches high, 13¼ inches wide, and 11½ inches deep. It is available with oiled oak or walnut veneers; the snap-retained grille is covered in black or brown cloth. Weight is about 23½ pounds. Price: \$420 per pair. Klipsch & Associates, Inc., Dept. SR, P.O. Box 688, Hope, Ark. 71801.

● **Laboratory Measurements.** Before making any measurements on the Klipsch kg² speakers, we tried several different mounting positions to determine their effect on the sound. Floor mounting, either with or without short stands, was not as satisfying as a typical "bookshelf" installation about 28 inches from the floor and an inch or so from the wall, so we conducted our listening tests and room-response measurements with the speakers in the latter mounting position. For quasi-anechoic response measurements with our IQS FFT analyzer, we placed one speaker on a stand about 24 inches high.

The averaged room response of the kg² was exceptionally smooth, varying only 6 dB overall from 140 to 20,000 Hz. The close-miked woofer response was summed with the separately measured passive-cone response (corrected for the different sizes of the diaphragms). The resulting low-frequency response was flat within 5 dB overall from 50 to 1,600 Hz. The bass driver's output was down 3 dB at the 1,800-Hz crossover frequency and dropped steeply above that point. In the low bass, the passive radiator's output was dominant below about 55 Hz and remained strong down to 35 Hz (where it was about 7 dB below its maximum, between 100 and 200 Hz).

The bass curve and the room curve overlapped through more than an octave, making possible an unambiguous composite frequency-response curve. Referred to the av-

erage midrange output in the 500- to 1,000-Hz octave, the maximum output was +5 dB in the vicinity of 200 Hz and down 3 dB at 35 Hz. After a 2.5-dB total variation between 550 and 13,000 Hz, it rose to +3 dB at 17,000 Hz. Overall, the +5-, -3-dB response between 35 and 20,000 Hz would be considered excellent for any speaker.

The FFT analyzer confirmed the excellent performance of the kg², although it differed in details from the room response. A small dip in the quasi-anechoic response at 2,000 Hz was probably due to a floor reflection, and the output fell off at 6 dB per octave above 13,000 Hz. Our curve was gratifyingly similar in most respects to an anechoic response plot made by Klipsch on the same unit. Clearly, we were both measuring the same essential properties of the speaker. Our response curves measured on axis and 45 degree off axis differed at frequencies above 3,000 or 4,000 Hz, with a typical difference of 12 dB in the range of 10,000 to 20,000 Hz. The phase response of the system was notably linear, resulting in a group-delay variation of less than 0.2 millisecond between 2,000 and 20,000 Hz.

The impedance of the kg² system reached a minimum of 4 ohms at about 200 Hz and a maximum of about 25 ohms at 68 Hz. Over most of the audio range the impedance was between 8 and 20 ohms, making the speaker's 4-ohm rating both valid and conservative. The sensitivity of the system was 90 dB SPL at 1 meter with an input of 2.83 volts of midrange pink noise. At this moderately loud level, the bass distortion of the system was very low, increasing from 0.8 per cent at 100 Hz to 3.2 per cent at 35 Hz. At 30 Hz, however, the speaker was obviously being overdriven by this input, emitting a rasping distortion. This result emphasizes the importance of the manufacturer's

(Continued on page 41)

**INTRODUCING DIGITAL
ES COMPONENTS
FROM THE PEOPLE WHO
BROUGHT YOU THE
DIGITAL PLAYER,
DIGITAL DISC,
DIGITAL REVERBERATOR,
DIGITAL PROCESSOR,
DIGITAL MIXER,
DIGITAL RECORDER,
DIGITAL EDITOR,
DIGITAL DISC MASTERING**

When the history of music is written, the chapter on digital will read like a list of accomplishments from just one company—Sony.

And now, to meet the stringent demands of their digital creations, Sony engineers have developed an

entirely new line of high-fidelity components. The ES Series.

To handle the phenomenal dynamic range of the new CDP-701ES compact disc player and PCM-701 ES digital audio processor, ES features what *Stereo Review* calls a "truly exceptional" inte-

grated amp. One that offers "the highest dynamic headroom of any amplifier we have yet measured."

The Sony-patented Accurate Pistonic Motion (APM) speaker design has been engineered to handle prodigious quantities of



power without distortion.

Even the tuner's Direct Comparator has been designed to complement the improved FM broadcast signals that result from digital source material.

Furthermore, because no innovation, no matter how

remarkable, should force you to discard your present music collection, ES also includes a LaserAmorphous™ 3-head cassette deck and linear tracking Biotracer turntable—these are worthy challengers to anything on the market today.

To find out more information on the Sony ES Series and the name of your nearest ES dealer, call Sony toll-free at 1-800-222-SONY.

SONY.

THE LEADER IN DIGITAL AUDIO.™

© 1983 Sony Corp. of America. Sony and LaserAmorphous are trademarks of the Sony Corporation.

CIRCLE NO. 17 ON READER SERVICE CARD

TURBO COLT

DON'T STEP ON THE GAS UNLESS YOU MEAN IT.

Purpose: to put pavement-scorching performance within reach of every driver who can handle it.

Car in point: Turbo Colt, imported for Dodge and Plymouth, built by Mitsubishi Motors Corp.

0 to 50 in 5.78 seconds. Now, while you're re-reading Turbo Colt's acceleration number in wide-eyed amazement, let us remind you that there's much more to Turbo Colt than a turbocharger. Turbo Colt is equipped to give you all the fun, the great handling, and the looks that should go along with its kind of acceleration. It rolls on Michelin XVS 165/70 HR 13's, with non-linear,

high-control springs, solid front and rear stabilizer bars (.79" up front, .57" out back), heavy duty transmission and clutch, and front gas-filled shocks. Front air dam, rear spoiler, tachometer, halogen headlamps and a sport braking system are all standard.

Check out the rest of Turbo Colt's stats and go grab hold of one at your Dodge or Plymouth dealer.

TURBO COLT: VITAL STATISTICS

ACCELERATION: Zero to 50 mph... 5.78 seconds

ENGINE: 1.6 liter turbo-charged, electronically-

controlled injected 4-cyl. MCA-Jet

TURBO BOOST: 7.5 lbs. psi

POWER: 102 bhp @ 5500 rpm

POWER TO WEIGHT

RATIO: 19.77 lbs per hp

TORQUE: 122 lbs-ft. @

3,000 rpm

TRANSMISSION: 4x2

Twin Stick



"Now that's a purpose!"



IMPORTS WITH A PURPOSE.



Dodge



Plymouth

BUCKLE UP FOR SAFETY

recommendation that the driving amplifier have a good infrasonic filter.

● **Comment.** Our first experience with a Klipsch speaker—the famous Klipschorn—was in 1947, and it made an unforgettable impression. For many years, the Klipsch name was associated only with large, expensive speakers, beginning with the corner Klipschorn and later including large direct-radiator systems as well. When we learned of the inexpensive Klipsch kg², we could not help but wonder how it would compare with its larger relatives.

Well, though we were not able to make a side-by-side comparison, it was apparent

that the kg² rates a place in the Klipsch family tree purely on its own merits. The speaker sounds very smooth and well balanced, with only a moderate extra warmth imparted by its slightly elevated mid-bass output. The deep bass (35 to 50 Hz) was most impressive, especially in comparison with almost any other speaker of comparable size we have heard lately. During our sine-wave tests, the output was strong enough to rattle light fixtures and anything else not securely anchored. Although the angular coverage of the system at high frequencies is completely adequate, a change in high-frequency output can be heard easily if you walk past the speaker while it is

reproducing a pink-noise signal. What we heard in this test seemed quite consistent with the directivity measurements we made with the FFT analyzer (and is not necessarily in conflict with the ratings, established under very different conditions).

The “bottom line” on the Klipsch kg² is that it is a compact, relatively efficient, attractively finished, and inexpensive speaker that also sounds very good. We listened to it for extended periods without feeling any urge to switch to other speakers, a sure sign that its sound was as good as our measurements later confirmed. —Julian D. Hirsch

Circle 142 on reader service card



Harman Kardon hk 590i AM/FM Receiver

ACCORDING to Harman Kardon, the hk 590i AM/FM stereo receiver was designed with an eye more to its ultimate sound quality than to numerically impressive specifications. The moderately powered unit's amplifier section, therefore, uses relatively little negative feedback. While negative feedback is a common technique to reduce overall amplifier distortion, its excessive use has been blamed for causing various types of dynamic distortions.

The power-amplifier section has a high instantaneous current capability, enabling it to deliver as much as 35 amperes of instantaneous signal current into a low-impedance or reactive speaker load. Its normal continuous-power rating is 45 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.08 per cent distortion. The rated frequency response at the -3-dB points is 1 to 120,000 Hz.

The hk 590i uses digital-synthesis quartz-locked tuning for both AM and FM bands, with pushbutton presets for up to eight FM and eight AM stations. The memory circuits retain their information for up to three weeks even if the receiver is unplugged from an a.c. power source. The pale-gold satin-finish front panel contains a number of pushbuttons, including the station-preset selectors and tuning-mode selectors (AUTO

and MANUAL). There are two pushbars for scanning up or down in frequency. In AUTO tuning, scanning continues until the tuner encounters a signal strong enough to unmute it; in MANUAL the tuning steps up or down by one interval (0.1 MHz for FM, 10 kHz for AM) each time a tuning bar is pressed.

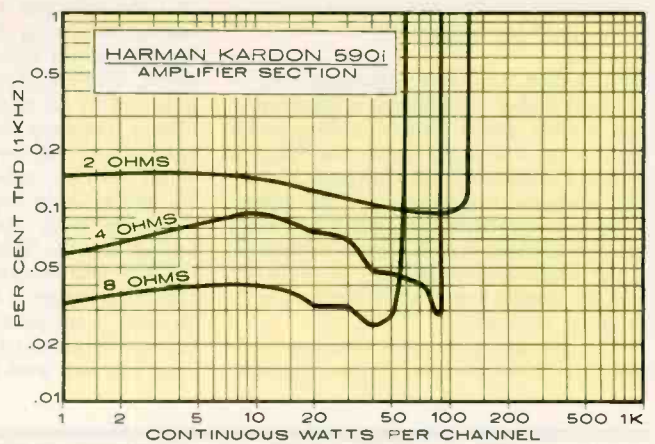
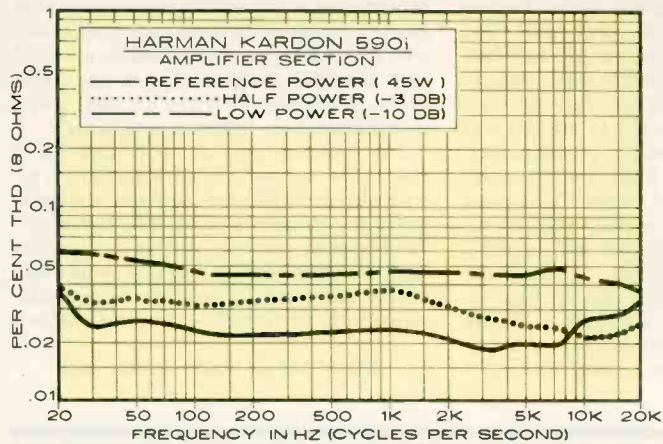
Small buttons are used to select the tone-control turnover frequencies (200 or 400 Hz for bass and 2,000 or 6,000 Hz for treble), bypass the tone controls entirely, separately activate the two sets of speaker outputs, and switch in the SUBSONIC FILTER (6-dB-per-octave cut below 15 Hz) and the loudness compensation. The AUDIO MODE button parallels the two channels for mono listening, the MUTING button switches off the FM interstation muting, and the TAPE COPY button connects two tape decks for dubbing from one to the other. Larger buttons control power, tape monitoring (connecting the output from either of two decks, or from the regular source, to the amplifiers), and input program selection (FUNCTION). The last group includes buttons for phono, AUX/DAD (for a digital disc player), AM, and FM.

A window across the top of the panel contains the numerical frequency display and LED's that show the status of the tape-monitor and function switches. Five small

green LED's light up in sequence to show relative tuner signal strength; other lights show that a station has been tuned in and whether it is transmitting in stereo. On the lower portion of the panel are three small knobs for tone and balance adjustment, a large volume knob, and a headphone jack.

The rear apron of the hk 590i contains heavy-duty speaker binding posts, the various signal input and output jacks, and binding posts for a 300-ohm FM antenna and for the supplied detachable AM loop antenna. There is also a 75-ohm FM-antenna coaxial connector. A screwdriver-adjusted control varies the FM-muting threshold level. There are three a.c. convenience outlets, two of them switched. The hk 590i is 17½ inches wide, 14¾ inches deep, and 5¼ inches high. It weighs 17 pounds, 10 ounces. Price: \$525. Harman Kardon, Inc., Dept. SR, 240 Crossways Park West, Woodbury, N.Y. 11797.

● **Laboratory Measurements.** One hour of preconditioning at one-third rated power left the top of the receiver only moderately warm, and, except when driving very low-impedance loads at high power levels, it never became uncomfortable to the touch during our tests. With both channels driving 8-ohm loads at 1,000 Hz, the power out-



put at clipping was 60.5 watts per channel, for a clipping headroom of 1.3 dB. Although the hk 590i is not specifically rated for load impedances other than 8 ohms, its high-current capability was demonstrated most impressively by its 1,000-Hz power output at clipping of 92.2 watts per channel into 4 ohms and 134.5 watts into 2 ohms (both channels operating). When we used the 20-millisecond tone-burst test signal of the dynamic-power test, the maximum output was 71, 112, and 170 watts into loads of 8, 4, and 2 ohms, respectively. The dynamic headroom of the amplifier was, therefore, just under 2 dB. Encouraged by this unusually good behavior, we tried paralleling a 4-ohm resistance with the 2-ohm load, giving a net load of only 1.3 ohms, and found that the tone-burst output clipped at 273 watts per channel—not bad for a “45-watt” receiver! At no time during our tests was the hk 590i shut down by its internal protective system, and it showed no ill effects from this extreme treatment, a “torture test” that few other amplifiers in our experience would have been able to survive, let alone perform properly under.

The 1,000-Hz distortion with 8-ohm loads was under 0.05 per cent from 0.1 to 55 watts output. Lower load impedances increased the distortion slightly. Into 4 ohms it was between 0.04 and 0.1 per cent from less than 1 to 85 watts, and into 2 ohms it was between 0.1 and 0.15 per cent for all power outputs up to more than 130 watts.

Distortion was nearly independent of frequency, with 8-ohm readings between 0.02 and 0.03 per cent from 20 to 20,000 Hz at the rated 45 watts output. At reduced power levels, the distortion was slightly higher, but even at 4.5 watts it never exceeded 0.05 per cent across the audio range.

The amplifier's slew factor exceeded 25, it was perfectly stable with complex simulated loudspeaker loads, and all of its intermodulation (IM) distortion products with mixed input signals of 18,000 and 19,000 Hz were below -85 dB. With the 200- and 6,000-Hz turnover frequencies, the highly effective tone controls were able to vary the response significantly at the extremes of the audible range with no effect on the mid-range. With the 400- and 2,000-Hz turnover frequencies they essentially duplicated the performance of conventional tone controls. The loudness compensation boosted both low and high frequencies moderately, and the SUBSONIC FILTER began to roll off the response below 50 Hz, to -3 dB at 20 Hz. The RIAA phono equalization was accurate within ±0.5 dB from 20 to 20,000 Hz, and it was not affected significantly by cartridge inductance.

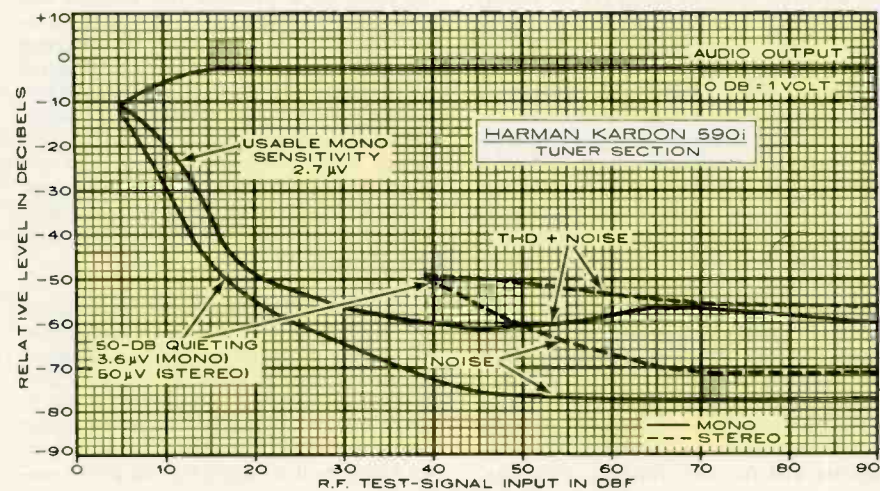
Through the high-level (AUX/DAD) input, only 18 millivolts (mV) were needed for a reference output of 1 watt, and the phono sensitivity was 0.29 mV for 1 watt. The respective A-weighted noise levels for the two inputs were -79 and -78 dB referred to 1 watt. The phono-input impedance was

50,000 ohms in parallel with 140 picofarads. It overloaded at inputs between 170 and 200 mV, depending on frequency.

The FM-tuner section had a usable sensitivity in mono of 13.8 dBf (2.7 microvolts, or μV). The stereo threshold was 39.2 dBf (50 μV), which corresponded to its stereo 50-dB quieting sensitivity. The mono 30-dB quieting sensitivity was 16.3 dBf (7 μV). The noise level was -77 dB in mono and -70 dB in stereo, and the respective distortions (at 65 dBf, or 1,000 μV) were 0.155 and 0.18 per cent. The FM frequency response was flat within ±0.5 dB from 30 to 15,000 Hz, and the channel separation was an almost constant 36 dB over that range (decreasing to 33 dB at 15,000 Hz).

The capture ratio was 1.2 dB at 65 dBf, and the AM rejection was 52 dB at 45 dBf (100 μV). The image rejection was an excellent 89 dB. Alternate-channel selectivity was above average at 71 dB (although it was highly asymmetrical about the center frequency of the tuner), and adjacent-channel selectivity was about 8 dB. The muting threshold was adjustable between approximately 27 dBf (12 μV) and 45 dBf (100 μV). The 19-kHz pilot-carrier leakage into the audio was at a -60-dB level, and the power-line hum was a very low -77 dB. The frequency response of the AM tuner section was typical: down 6 dB at 22 and 2,200 Hz.

● **Comment.** The Harman Kardon hk 590i is distinctly different from the many receivers offered by other manufacturers. This difference is not a matter of cosmetics, although the receiver's styling is also sufficiently unusual to set it apart from the competition. For many years, one could assume that a moderate-power receiver or integrated amplifier would do a perfectly competent job of driving resistive loads on the test bench (and often challenge the measurement abilities of the finest laboratory instruments). But it was almost axiomatic that low load impedances (even, in many cases, 4 ohms) would severely limit the output of the amplifier and sometimes produce harsh distortions when its current-limiting circuits were triggered. It is not even unusual for an amplifier to be damaged, or at least to have its fuses blown, by such operation. Such behavior has not been limited to integrated amplifiers or receivers; even some powerful and expensive separate pow-





In Search of a Live Performance.

From a conductor breathing to a cannon firing, the Bose® 901® Series V Direct/Reflecting® Speaker System reproduces the full dynamic range of a live performance. But dynamic range is only the beginning. The culmination of 25 years' research, the Series V system maximizes the potential of the world's most demanding recordings. To fully appreciate its spacious, lifelike sound, audition the Series V system with a Digital Audio Disc, and experience the thrill of a live performance.

Bose will help you invest in live performance for your home. Fill out the coupon below, and Bose will send you a free brochure, a list of authorized dealers, and details on a \$100 Digital Audio Rebate.

Return to:
Bose Corporation
Dept. SR-901D, P.O. Box 200
Cathedral Station
Boston, MA 02118

Name _____
Address _____
City _____ State _____ Zip _____

Direct/Reflecting is a registered trademark of Bose Corporation. © Copyright 1993 Bose Corporation. All rights reserved. Printed in U.S.A. Bose Corporation, The Martin Luther King Memorial, Massachusetts, U.S.A. 01701.
Bose Corporation is available through your local authorized dealer and the AAFES Mail Order Catalog. This advertisement is neither sponsored by nor part of a sales or promotional program of the U.S. Army.

BOSE
Better sound through research.

er amplifiers have proved to be anemic performers when loads of 2 ohms or so were connected to their outputs.

This effect has audio significance because many popular loudspeakers can demand enormous signal currents from an amplifier under certain conditions that can be encountered in home use as well as in the laboratory. Investigations by Harman Kardon's consultant Matti Ojala and others have shown that an effective load impedance as low as 1 ohm could be presented to an amplifier by some ostensibly "8-ohm" speakers. Obviously, Harman Kardon has taken these findings to heart, and the hk 590i is a superb example of a product designed to cope with the worst-case signal and load conditions one might encounter in a home music system. I can think of no other amplifier, past or present, that is capable of delivering a dynamic output of six times

its rated 8-ohm power to a load of less than 2 ohms.

Apparently this has been achieved without sacrificing reliability or any other performance qualities. The other amplifier parameters of the hk 590i, including distortion, noise, and stability, are also excellent, if not quite as impressive as its high-current capability. The FM tuner, likewise, is good where it really matters—in respect to interference rejection, noise, and distortion. In operation, the hk 590i is a smooth, silent performer, free of unexpected noises under any conditions of operation. Even the tiny LED signal-strength indicators switch on and off instantly, with none of the usual uncertainty or vagueness, and the five lights span most of the range of signal strengths one is likely to encounter, making them truly useful indicators.

It is almost superfluous to say that the hk

590i sounded as good as its measurements suggested. It can be played far louder than most comparably rated receivers or amplifiers without signs of strain. It is not always easy to wax enthusiastic about a new stereo receiver, no matter how good it may be. In fact, it is sometimes too easy to conclude that most comparably rated receivers are pretty much equal. Nevertheless, the hk 590i strikes us as being somewhat "more equal" than most in the ways that really count. We could not help wondering what a more powerful, scaled-up version of the 590i might be like—perhaps a kilowatt of dynamic power into 1 or 2 ohms? At any rate, the hk 590i is surely a step in the right direction as we enter the age of the digital disc and other extended-dynamic-range program sources. —Julian D. Hirsch

Circle 143 on reader service card



Mitsubishi DP-103 Compact Disc Player

ALTHOUGH less than a year has elapsed since the digital Compact Disc (CD) made its appearance in the U.S., a second generation of players is already reaching the marketplace. The Mitsubishi DP-103 is one of that group, following the Mitsubishi DP-101, which we reported on last July. Most of the first group of CD players were large, heavy, and replete with many programming features. They were also expensive, typically selling for \$1,000 or more. The DP-103, at \$650, is the least expensive CD player we have tested.

Although the "compact" nomenclature actually applies to the disc and only by extension to the player, there has been a certain incongruity in the disparate dimensions of the hardware and software portions of this new medium. The DP-103, however, merits the adjective "compact" in its own right, with a volume (and weight) just over

half that of the first-generation Mitsubishi player. Although it lacks the complex programming features of the DP-101, the DP-103 is exceptionally easy to operate.

The DP-103 is a low-profile, front-loading machine with a horizontal drawer that glides open silently to receive the disc at the touch of the OPEN/CLOSE bar and closes just as silently with another touch of the same control. When the drawer closes, the disc turns briefly and then stops, after which the digital display at the upper right of the front panel shows the number of distinct tracks on the disc and their total playing time in minutes and seconds. To the left of this display, a DISK SET indicator light shows that the disc has been loaded and is ready for playing. Between the OPEN/CLOSE bar at the top center of the panel and the power switch at the bottom are three flat plate switches marked PAUSE, PLAY, and STOP.

Normally, touching PLAY begins the record from Track 1, and the time indicator shows the playing time in the current track. The disc is played to its end, after which the player shuts down. The PAUSE and STOP controls have the same functions as similar controls on tape decks and other CD players.

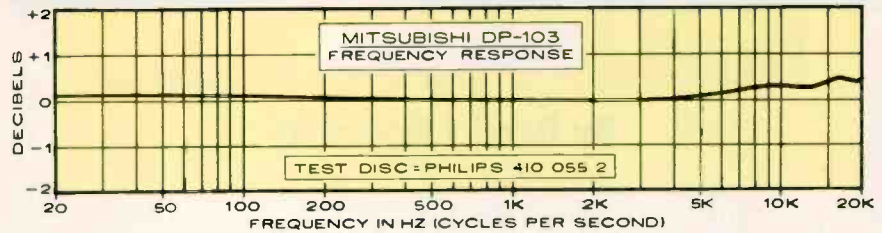
Below the digital display are two large, flat plates that are pivoted at their centers. A touch on the appropriate end of the upper one (SKIP) either advances the laser pickup to the beginning of the next track or slews it back to the beginning of the current track. Repeated operations of this control can cue the pickup to the start of any track on the disc, with the display showing the number of the track about to be heard. Below the SKIP control is a FF/FR (fast forward/fast reverse) pushplate. Pressing one end of it causes scanning to advance in the corre-

sponding direction, slowly for the first 3 seconds, then at a very fast speed. The program can be heard during the fast scan at its normal pitch but greatly accelerated in tempo.

Next to the scan controls is a REPEAT button; pressing it causes the entire disc to be repeated indefinitely until the button is pressed a second time (it is not possible to set the machine to repeat only a single track). An indicator light next to the digital display shows that the repeat function has been engaged. Below the REPEAT button is a headphone jack, and below that there is a horizontal-slider headphone level control. The rear apron of the DP-103 contains the two audio-output jacks. The player measures 13 3/4 x 4 x 12 3/8 inches and weighs about 14 1/2 pounds. Mitsubishi Electric Sales America, Inc., Dept. SR, 3030 East Victoria, Rancho Dominguez, Calif. 90221.

● **Laboratory Measurements.** The output voltage from a 0-dB (maximum level) 1,000-Hz recorded signal was 1.95 volts (the nominal rating is 2 volts). The maximum headphone output was 5.6 volts into a 600-ohm load and 0.58 volt into 8 ohms (the player is rated to deliver 20 milliwatts per channel to 8-ohm headphones). We listened through 600-ohm phones and found the volume more than adequate.

The DP-103's frequency response was flat within +0.5, -0 dB from 20 to 20,000 Hz, with a slight rise occurring above 5,000 Hz. The stereo channel separation was 114 dB at 1,000 Hz and 95 to 96 dB at 20,000 Hz. The output noise level during playback of the silent "infinity zero" test-record track was -96 dB unweighted and -103 dB with A-weighting (both referred to a 0-dB signal level). The total harmonic distortion at 1,000 Hz was 0.003 per cent at 0 and



-20 dB (the lowest level at which we could measure it), falling to about 0.0015 per cent between those limits. The inter-modulation distortion was 0.006 per cent at 0 dB and 0.009 per cent at -20 dB. We also measured the phase difference between the left and right channels, playing mono test signals between 100 and 20,000 Hz. The phase angle below 1,000 Hz was under 5 degrees, increasing to 30 degrees at 7,000 Hz, 60 degrees at 15,000 Hz, and 90 degrees at 20,000 Hz. These measurements indicate that the DP-103 utilizes a single digital-to-analog converter circuit whose output is rapidly switched (multiplexed) between the two output channels. There are no apparent audible effects from this.

The effectiveness of the error-correcting system of the DP-103 was tested with the calibrated "defects" on the Philips TS4 test record. Any CD player should be able to track data interruptions of up to 400 micrometers on the information-carrying signal surface of the disc or 300 micrometers of an outer-surface blemish, and it should also be able to cope with the simulated fingerprint. The DP-103 was able to play the 700-micrometer signal-surface defect and the 600-micrometer outer-surface defect; this is very good performance (more extended interruptions cause a "stuttering" or hang-up of the laser tracking system when

it fails to follow the spiral pattern of pits on the record). The simulated fingerprint had no effect on the reproduction.

Related to defect-tracking ability is the ability of the player to withstand a physical shock that might cause the pickup to "lose" the recorded pattern. The DP-103 was fairly sensitive to impact blows on its top and front but almost totally resistant to side blows. We would grade it C and A, respectively, in those directions. The pickup servo was able to cue up the second of two tracks on the Philips TS4 sampler record that have no silent gap between them without losing even part of a syllable of the vocal portion that begins the second track. Not every player can pass this unusually demanding test.

● **Comment.** The Mitsubishi DP-103 was exceptionally easy to use as well as being totally silent and bug-free in its operation. In general, skipping from one track to another took about 1 or 2 seconds, and advancing from Track 1 to Track 15 of one of our records required only about 6 seconds. The FF/FR function was very convenient because of the simultaneous audible program output and digital time display. Brief touches on these controls allowed accurate cueing to a particular moment within a track, and sustained pressure caused the laser to fairly fly through the contents of the disc.

We did not mind the lack of programming facilities in this machine, which more than compensated for their absence by placing no upper limit on the number of tracks that could easily be accessed. It was as easy (and nearly as fast) to get to Track 39 of one of our test records as to Track 1, a feature that we greatly appreciated during our tests.

The evolutionary trends in CD-player development were predictable given the extraordinary flexibility built into many of the first-generation products. Now, more than ever, the consumer is being given a choice between size/price and operating features, which is all to the good. It is also reassuring to find that the actual playing performance of this second-generation player is even better than that of its predecessors. It is worth repeating that all properly operating CD players sound essentially alike (the differences between them are so minor as to be negligible). But there are some real differences in how well they work under less than ideal conditions (particularly when playing dirty or damaged discs) and in their ease of operation. In both these respects the Mitsubishi DP-103 is an excellent performer, and its very reasonable price only makes it more attractive. —Julian D. Hirsch

Mitsubishi DP-103 Operating Features and Hirsch-Houck Labs Test Results

Manual Features

Skip to next track? Yes
 Skip back to previous track? Yes
 Skip to start of current track? Yes
 Scan/search? Yes
 Program audible during scan/search? Yes
 Repeat track/side? No/Yes
 Repeat phrase? No
 Cue by track number? Yes
 Cue by index number? No
 Cue by time? No

Programming Features

No programmable playback facilities.

Lab Measurements

Maximum output level: 1.95 volts
Headphone output: 8 ohms, 0.58 volts; 600 ohms, 5.6 volts
Total harmonic distortion at 1,000 Hz: 0.003 per cent referred to 0 dB; 0.0014 per cent referred to -10 dB; 0.0032 per cent referred to -20 dB
Intermodulation distortion: 0.006 per cent referred to 0 dB; 0.009 per cent referred to -20 dB
Signal-to-noise ratio: 96 dB unweighted, 103 dB A-weighted
Channel separation: 114 dB at 1,000 Hz; 95 dB at 20,000 Hz
Frequency response: +0.5, -0 dB from 20 to 20,000 Hz
Cueing time: 6 seconds

Other Lab Tests

Impact resistance: top, C; side, A
Cueing accuracy: A
Defect tracking (figures are size of largest defect successfully tracked): signal-surface damage, 700 micrometers; painted dots, 600 micrometers; simulated fingerprint, pass

Circle 144 on reader service card

Audio/Video News

By David Ranada

DIGITAL AUDIO DEVELOPMENTS

FROM music synthesizers to computer-aided design of audio components, from studio master recorders to the home digital Compact Disc system, digital audio in its various manifestations dominated the latest annual convention of the Audio Engineering Society. This has been the case for the last couple of years, of course, but this time there were reports on several engineering developments that promise important changes in the way we listen to music at home.

Perhaps the most startling of these came from Philips, inventors of both the LaserVision video-disc system and (with Sony) the Compact Disc digital-audio system. It now appears that it is possible to encode two channels of digital-audio sound on a LaserVision video disc in addition to the picture and the analog stereo soundtracks. Even more significant is Philips' announcement that the exact same digital-audio encoding system used for the Compact Disc can be used to encode digital LaserVision soundtracks. All a LaserVision player needs to play back digitally encoded soundtracks is the additional CD-decoder and digital-to-analog-converter integrated circuitry—the laser-tracking circuits essential to a CD player are already contained in LaserVision players.

This is important news to the video-music industry since it means that music-oriented video productions can be recorded on video discs with the same sound quality available from the audio-only Compact Disc system. This development, which may take more than a year to reach the stage of commercial hardware and software, does *not* imply that combination LaserVision/CD players will become common items, nor does it mean that the CD has suddenly become obsolete. The Compact Disc is a music-oriented medium intended eventually to supersede analog music-oriented media such as the LP disc and the tape cassette. A LaserVision video disc with digitally encoded soundtracks is perhaps best thought of as a totally new, high-quality entertainment medium.

Considerable work on digital signal processing was also presented at the convention, mainly efforts to replace standard analog studio equipment (mixers, equalizers, reverberators) with cost-effective digital-audio devices. The most fascinating work of this type, from the standpoint of future developments as opposed to current results, was described by Roger Lagadec of Studer (maker of Revox tape recorders). He discussed the company's efforts to improve the sound of existing analog recordings through all-digital reprocessing. The goal of Lagadec's work is to take "decent" older record-

ings and to improve their signal-to-noise ratios by a perceptible amount "so as to make them better suited for new media such as the Compact Disc."

Lagadec also announced an even more ambitious goal: "To take recordings of evident cultural value but objectionable technical quality and attempt to restore what occurred in front of the microphone." Should these efforts continue to yield good results—and the examples Lagadec played were most impressive—music lovers will eventually be able to hear historic recordings of the pre-digital and pre-stereo eras truly remastered for the Compact Disc (instead of just being digitally copied for the new medium).

Those still intensely worried about the "sound" of digital recordings should start paying more attention to the sound of analog tape recorders, at least according to the results reported by one researcher. Laurie Fincham of KEF has found that while the

generated clicks, so conclusive evidence on this controversial subject is not yet in. My own feeling is that if a difference *is* audible when switching a sharp-cutoff low-pass filter with a high cutoff frequency, it probably stems from the filter's not-quite-flat frequency response at lower frequencies. The musical import of such small errors (± 0.2 dB) is nil, of course.

There were several papers about digital-audio cassette recorders, but the interesting news in this field comes instead from private conversations I had with a couple of Japanese engineers. They told me that when a digital-audio-cassette standard is issued, it will actually be *two* standards, one for a fixed-head recorder much like today's analog cassette recorders and the other for a rotary-head recorder based on helical-scan video-cassette technology. Such standards may be issued by the middle of this year, with products to follow as soon as production lines can get rolling.

And in regard to the fears that record companies have about digital-cassette recordists' ability to make an exact copy of a Compact Disc, I was told that the Compact Disc data stream contains a copy-prohibition "flag" signal that could prevent a flag-detecting digital-cassette machine from recording the audio data. Such codes will probably be ineffectual in preventing copying, however, since a suitable circuit for outwitting them would cost no more than \$15 in parts and could be soldered together in half an hour. The problem remains.

An announcement that I hope will become important was made jointly by Stu-

... through all-digital reprocessing . . . music lovers will eventually be able to hear historic recordings of the pre-digital and pre-stereo eras truly remastered for the Compact Disc"

low-frequency phase distortion characteristic of analog (but not digital) tape recorders is distinctly audible and "imparts a 'boomy' characteristic to the sound," phase-corrected low-frequency playback is "noticeably free from the 'chesty' sound so often present on recorded male speech."

Anti-digitalists often point to the extensive phase shifts introduced by the sharp-cutoff anti-aliasing and output-smoothing low-pass filters present in most digital audio equipment as the culprits in the creation of "that digital sound." Doug Pries of Tufts University, however, presented experimental results showing that listeners were not able to detect the effects of a series of *eight* such filters—far more than a signal would ever be passed through in the digital-audio chain from studio recorder to home CD player. The filters that he modeled (on a computer) even had a lower cutoff frequency (15 rather than 20 kHz) than that of the filters used in digital recorders and CD players, so they should conceivably have been *more* audible. On the other hand, the listening tests were done using headphones, and the "music" was a series of computer-

der, Sony, MCI, and Matsushita, who have agreed on an encoding format for professional multichannel digital-audio recorders. They have proposed the DASH (digital-audio stationary-head) system as the industry-wide standard for master-tape machines. None of the new equipment fascinated me more than the digital music synthesizer from Kurzweil. With its uncannily realistic re-creation of standard orchestral instruments, pop-music producers won't have to pay an orchestra to get the sounds of one on tape. Also new at the AES convention was a collection of papers given at the society's first all-digital-audio meeting. *Digital Audio, Collected Papers from the AES Premier Conference* (\$75) contains a great deal of information on digital-audio techniques, especially the encoding of Compact Discs. This book and the October 1978 digital-audio tutorial issue of the *Journal of the AES* (\$5) are recommended reading for anyone who wants to know more about the theory and practice of digital audio. They can be obtained from the Audio Engineering Society, 60 East 42nd Street, New York, N.Y. 10165. □

ONLY ONE AUDIO DEALER IN TWENTY WILL CARRY THE KYOCERA R-851 TUNER/AMPLIFIER WITH MOS FET AMPS.



Very simply, our R-851 is not for everyone. Not for every dealer. Not for every audio buyer.

Only for those who demand the best. Those who want sound that's pure and distinctive... who hear subtleties others miss. For those discriminating listeners, the R-851 is well worth the quest.

Hear the silence before you hear the sound.

Switch on the R-851, switch from one function to another. Try Phono. Tape 1. Tape 2. Auxiliary. Back to Phono.

Absolute silence (of course, you'll get sound on AM/FM). The silence is the mark of a great receiver. And great engineering.

The kind of quiet an audiophile loves to hear.

Sound that takes you closer to the source.

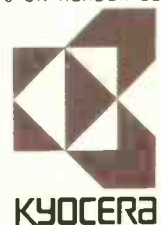
We've turned on the R-851 for some very experienced—even jaded—audio ears, and all we can say is it stops 'em every time. The sound is different. The sense of *being there* is almost overpowering. All this comes from 85 watts per channel of power* (with dynamic power far above this figure) and some of the most sophisticated circuitry in the business. Above all, it uses MOS FET's, the new breed of output transistors, in the amplifier section. They can handle the transients, the power surges, the power requirements of present-day sound (and tomorrow's digital sound) better than bipolar transistors ever could—and give you a sonic purity like no other (many claim MOS FET's have picked up the warm, rich sound of the great tube amps and gone a step beyond!).

Fine tuned for every audio need.

From front end to output jacks, the R-851 offers every feature an audio enthusiast might want. The most commonly used controls are right up front—the more esoteric ones are placed behind a neat flip-down front panel. There's microprocessor-controlled quartz-locked tuning with 14 station programmable memory (7 AM & 7 FM); automatic station seek; 3-band parametric-style equalizer; fluorescent display panel; and two-way tape monitoring and dubbing.

If you need some help in finding that one Kyocera dealer in twenty, contact: Kyocera International, Inc., 7 Powder Horn Drive, Warren, NJ 07060 (201) 560-0060.

CIRCLE NO. 8 ON READER SERVICE CARD



*85 watts RMS per channel, both channels driven, at 8 Ohms with no more than 0.015% THD from 20-20,000 Hz.

HOW TO USE AN EQUALIZER

By Craig Stark

FROM the phono stylus or tape head to the loudspeakers, today's better stereo systems handle the musical frequency range so uniformly that it might seem there is little need to alter it. Indeed, there are some audiophiles who either pay thousands of dollars for preamplifiers that omit bass and treble controls altogether or else, almost as a point of religious dogma, refuse to use the ones they have. Nothing, they feel, must be allowed to tamper with the Original Sound.

This purist approach is based, however, on two false assumptions. First, even leaving aside deficiencies in microphone technique and recording equipment, the exact tonal balance of the Original Sound almost never gets to the tape or disc. Recording and pressing engineers almost always use equalizers to modify the response of the original tapes to make it better suited to the sonic limitations of the LP or cassette medium and to their own personal feelings about what "sounds right." This latter factor plays an enormous role in popular-music recording, and it has even (alas) entered the classical field as well.

The second false assumption is that if you put a signal with a flat frequency response into a speaker you will get a flat frequency response in your listening room. Speakers are notoriously the weak link in the hi-fi chain, which is why you must *always* make a direct comparison between competing models before buying. (Some listeners with "golden ears" claim to hear significant differences between components of all types that escape most people's notice. But if you can't hear any differences between loudspeakers, I suggest you have your ears checked.) Further, as every audiophile knows, manufacturers of high-quality loudspeakers take great care to optimize their systems' enclosures, for the box/speaker interaction plays a critical part in determining how the system sounds. On a larger scale, the listening room itself is simply an enclosure or box that we share with the speaker system. Interaction between even the best of speakers and the listening room can also significantly modify the frequency balance of the sound reaching our ears—which are the only points where fidelity to the Original Sound really matters.

The best way to compensate for the effects of a recording engineer's sonic misjudgments and for some, at least, of

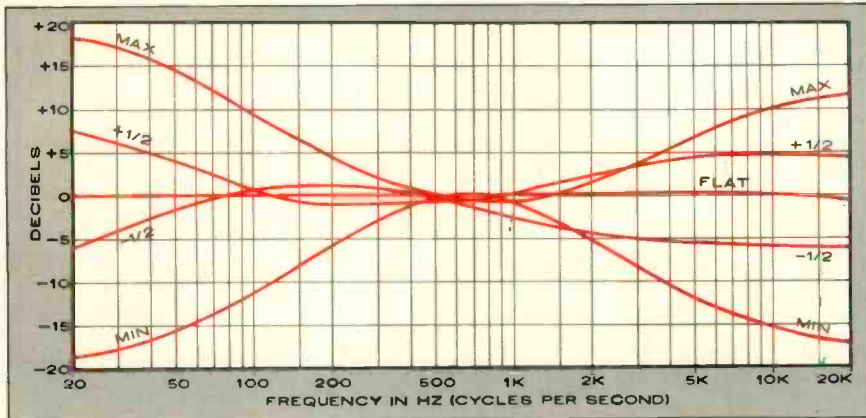


Figure 1. The tone-control response curves of a typical high-quality preamplifier. Note that heavy boosts or cuts at the frequency extremes can also slightly affect the midrange.

the response aberrations arising from speaker variations and from speaker/room interactions is to use an *equalizer*. While basic tone controls may suffice to make *overall* corrections in bass and treble response, they usually affect both channels simultaneously, even if one channel needs a boost and the other a cut, and they usually affect too much or too little of the audible spectrum. A glance at the tone-control curves of a typical high-quality preamplifier, shown in Figure 1, will make this clear.

Looking at these curves, you can see that there is no way, for example, that you can set the bass control to reduce a 5-dB hump in the 125- to 250-Hz region (characteristic of some vented speaker systems) without rolling off the bass response completely. To make matters worse, the particular monitor speaker I have in mind *also* needs a bass boost at 50 Hz and below! On the other hand, if you want to add a few decibels boost in the 2,000- to 3,000-Hz region (which will add "presence" to a singer's voice), an ordinary treble control can do it only by simultaneously boosting all the higher frequencies even more, creating a noisy, shrill screech.

As shown in Figure 2, however, an equalizer divides the audible frequency spectrum into several different bands, thus giving you control over the amount of boost or cut applied to each (normally as much as 12 or 15 dB). Moreover, in all but the least expensive models, there are separate controls for the left and right channels.

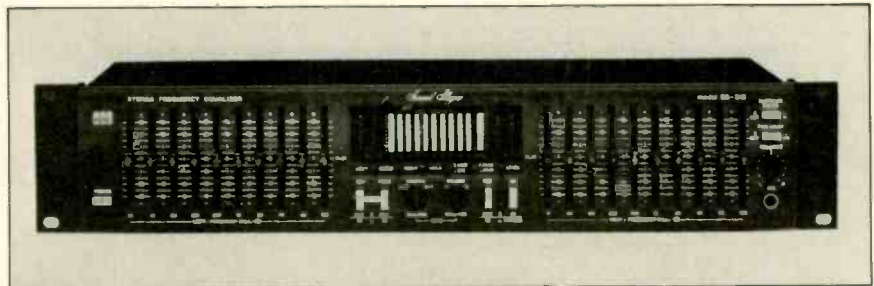
Equalizer Types

Most of the equalizers used in home music systems are *graphic equalizers*. They are so called because the positions of their controls are like the points on a frequency-response graph, letting the user see at a glance a reasonable ap-

proximation of the response curve that the equalizer is imposing on the input signal. The center frequencies of each band in a graphic equalizer are either fixed or variable only in switch-controlled increments, but those of *parametric* equalizers can be continuously varied for more precise control of a frequency band. Most parametrics also allow the width (the "Q") of the affected band to be varied, so that, for example, you could set the center frequency of a control at 500 Hz and either limit the band it affects to a small fraction of an octave or else open it up to control three and a half octaves. Parametric equalizers are named for their ability to continuously control the parameters of frequency, bandwidth, and level, but their greater flexibility usually comes at a higher price.

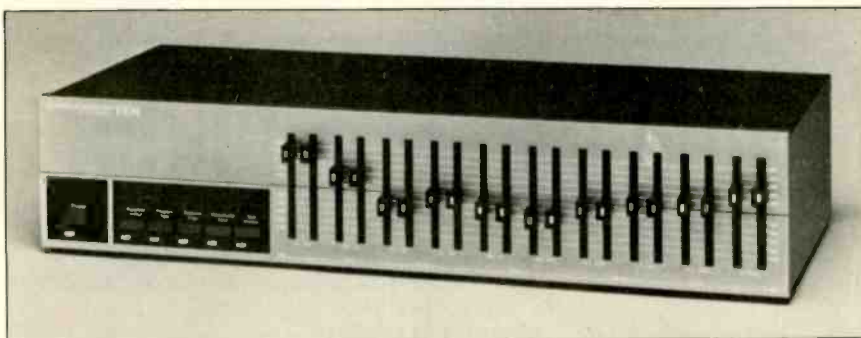
Deciding between a graphic or a parametric equalizer depends on what type of control you want over the sound. A parametric is ideal for coping with acoustical problems extending over small frequency regions—for example, a nasty bass room resonance or a persistent hum or whistle in a recording. A graphic is better when several relatively broad-band problems need to be solved simultaneously (as in room or speaker equalization). A graphic equalizer is the only type that can impart a smooth tilt upward or downward over a large portion of the audible spectrum.

(Continued on the next page)



Above, the ADC Scand Shaper SS-315, a ten-band graphic equalizer with a built-in spectrum analyzer and pink-noise generator.

The analyzer display's resolution is 2 dB per division. Price: \$399.95.



Left, the Audio Control Ten, a ten-band graphic equalizer with switching for audio or video inputs, tape-recording equalization, and a built-in infrasonic filter with an 18-dB-per-octave slope. Price: \$269.

Most stereo graphic equalizers divide the audible spectrum into octaves; that is, their bands are centered at such frequencies as 50 Hz, 100 Hz, 200 Hz, 400 Hz, and so on. Full-octave bands are fairly easy to adjust by ear while listening to music. One-third-octave bands (thirty or more per channel) positively demand the use of a calibrated microphone and a pink-noise generator. Depending on the lowest and highest center frequencies selected by the manufacturer, octave-band equalizers usually have anywhere from eight to twelve bands per channel, ten being the most popular number. Most major manufacturers produce octave-band equalizers, which generally range in price from about \$200 to \$350, often depending on the number of controls per channel. At lower price points are five- and seven-band units, with each control handling two octaves. Those equalizers can very well serve to complement bass and treble tone controls, but the bands are too widely spaced to achieve optimum results in room equalization. There are also a few bass-only equalizers for this problem-ridden frequency region.

While there are a few rare individuals who claim to have developed "calibrated ears" that correlate well with measured results (who can, for example, say something like, "This speaker is about 3 dB hot around 3,000 Hz," and be right), I must confess that I still find

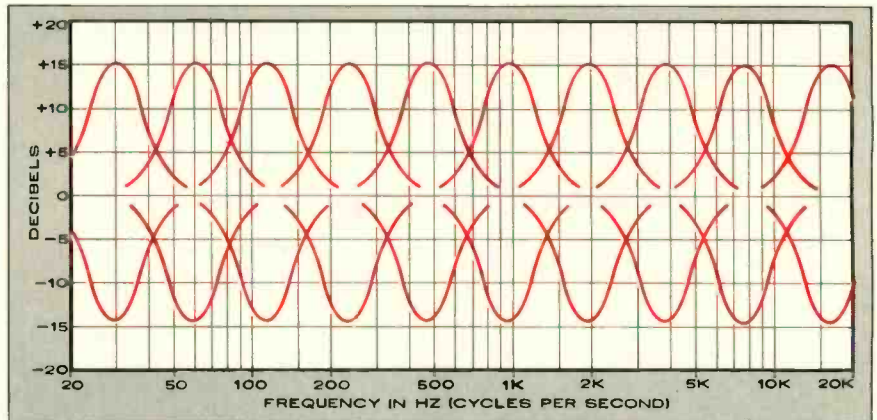
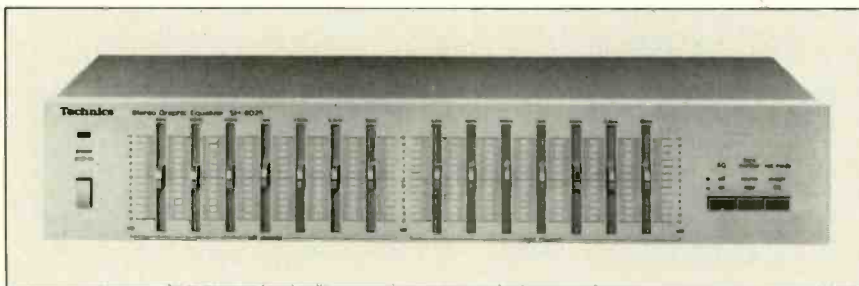


Figure 2. The individual response curves of a ten-band graphic equalizer. When two adjacent bands are fully boosted or cut, their curves overlap so that their center frequencies are no more than 3 to 5 dB above or below the point midway between them.

adjusting an equalizer by ear for flat listening-room response either beyond my capacity or my self-confidence. For this reason I especially welcomed the introduction, in recent years, of equalizers with built-in calibration equipment. Typically these include, in addition to the equalizer itself: (1) an octave-band display (called a "real-time analyzer," or RTA) that shows you the frequency distribution of the sounds you are hearing, (2) an electret condenser microphone (accurate enough for the purpose, though usually not of laboratory quality), and (3) a pink-noise generator, which produces a signal containing all audible frequencies

distributed so that each octave contains equal energy. (Pink noise is by far the quickest and most accurate signal to use for setting up an equalizer.) The AudioSource EQ-One and the ADC Sound Shaper SS-315, both with list prices of \$400, are typical of this type of unit. The Soundcraftsmen AE2420-R Scan-Alyzer (\$499), which incorporates differential comparator circuitry to permit measurements accurate within 0.1 dB, is also a noteworthy unit of this kind.

Offering the ultimate in ease of adjustment and flexibility are the microprocessor-equipped equalizers, such as Sansui's SE-9 Compu-Equalizer (\$700), an eight-band unit that not only analyzes and displays the in-room response of your system but automatically adjusts the sliders for you. In addition, this unit permits you to store up to four compensation curves (for different listening locations or different kinds of music). Even more advanced is the dbx 20/20, which eliminates sliders altogether (it tunes itself electronically), has ten equalization-setting memories, comes with a very accurate measuring



Above, the Technics SH-8025 graphic equalizer. It has seven bands with ± 12 -dB boost or cut available in each; features include recording equalization and an equalizer bypass. Price: \$125.

Right, Sansui's SE-8X ten-band graphic equalizer and in-line spectrum analyzer. It has two tape circuits for equalized dubbing from either deck to the other. Price: \$400.



microphone, and is also calibrated as a sound-pressure-level (SPL) meter.

Equalizer Specifications

In addition to the major features discussed above, a number of equalizer specifications should be considered in evaluating competing units. Figures for total harmonic distortion and signal-to-noise ratio should generally be comparable to those for your preamplifier (or the preamplifier section of your receiver or integrated amplifier). The amount of overall boost or cut for each frequency band, generally either 12 or 15 dB, is less important than the *accuracy* of the slider markings since a full boost or cut

is rarely necessary. The ability to resolve and repeat a boost or cut within ± 1 dB is excellent; ± 2 dB is good; ± 3 dB, though typical, is only fair.

If the unit incorporates a real-time analyzer spectrum display and pink-noise generator and is supplied with a microphone, the accuracy of the readout should be stated both with and without the calibrated microphone. Except for the highest-quality units, the supplied microphone cannot be expected to be of laboratory quality, but the manufacturer can and should *compensate* (in the unit's input circuitry) for its known frequency-response deficiencies to bring its readings within ± 2 dB or so of flat. Among other useful

features are center-detented "flat" positions and an output level control that enables you to readjust for equal apparent loudness from the equalizer's output as compared with its input. A bypass switch is a must to permit aural in/out comparisons.

Other Equalizer Uses

While the principal use of an equalizer is to tailor the frequency balance of the sound in your listening room, it has several other applications as well. For example, if a particular recording is poorly mastered and sounds markedly different from others in your collection, you can use your equalizer to help cor-

Setting Up a Self-Calibrating Equalizer

If you purchase an equalizer with a built-in spectral display, a pink-noise generator, and a calibrated microphone, equalizing your music system is a simple process that requires few precautions.

(1) Place the microphone at ear level in your normal listening location but at least a foot or two away from large reflective (for instance, a desk top) or absorptive (an overstuffed sofa) surfaces. Aim it midway between the speakers, not directly at either one.

(2) Connect the equalizer to your system following the manufacturer's instructions. This will usually be in the tape loop, and you will normally have to reconnect your deck to the equalizer jacks provided for that purpose. When possible, however, I prefer to avoid using an amplifier's tape jacks for the equalizer. Some integrated amplifiers have a pair of "pre-main" jacks that are excellent for this purpose, and, of course, all separate preamplifiers permit connecting an equalizer between the preamp and amp, which is how I prefer to do it.

(3) With your listening room as quiet as you can get it, feed pink noise at a rather loud volume into the left speaker and write down the spectrum-display reading for each frequency band. You should adjust the sensitivity control for the display (if the equalizer has one; otherwise change your amplifier's volume control) to center the display as much as possible. You'll find that the display will not be completely stable, particularly at the low frequencies, so you'll probably have to average several sets of readings. *Without changing the volume level*, do the same for the right speaker. By keeping the same volume setting, your figures will reflect

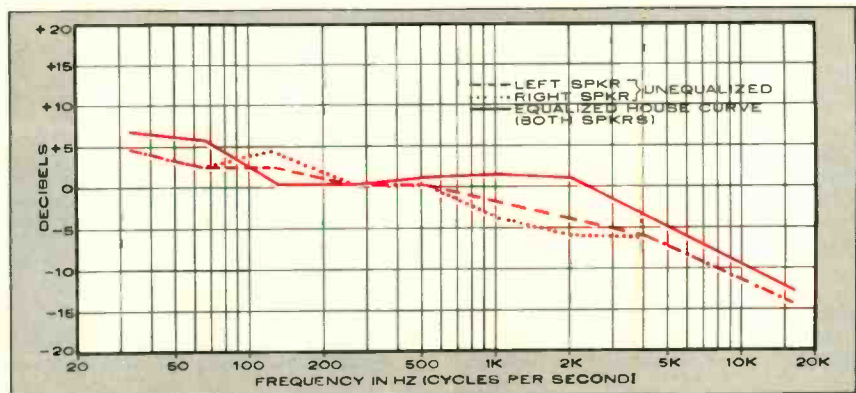
both relative frequency response and absolute loudness differences between bands for your two speakers.

(4) You may want to plot these unequalized relative left- and right-channel level readings on graph paper, using the reading at 250 or 500 Hz as your 0-dB reference point. (The maximum output power of a symphony orchestra occurs around 400 Hz.) With an octave-band equalizer, all the points you'll be plotting will be an octave apart, so there is no need to use the kind of semi-log graph paper we use for STEREO REVIEW's frequency-response test charts. Ordinary linear graph paper will do.

(5) Although, as explained in the conclusion of the accompanying article, you probably won't *like* the sound that results from genuinely flat measured response, you should probably make your first adjustments to achieve it, both to familiarize yourself with the equalization process and to hear what it sounds like. The frequency

bands controlled by the equalizer knobs overlap, so you'll have to juggle back and forth a bit. When both speakers are identical (flat) in their response curves, adjust their relative volume so they match in this respect also. *Try to use as little equalization as possible*, and avoid having all the knobs either above or below the center.

(6) The degree of high-end rolloff you use for your "house curve" must be your own decision, and it may vary with the type of music you wish to hear. Different listening locations may require different control settings to achieve the same curve. As a good starting point, however, I suggest using the curve I arrived at for my listening room, which is shown below. This curve produces an average of the frequency response at "good seat" locations in four of the world's best concert halls. The measurements were made by Bolt, Beranek, and Newman, Inc., with the uppermost octave shown (8 to 16 kHz) derived by simple extrapolation.



rect its sonic imbalance(s) while dubbing it onto tape. Most equalizers provide a switch to feed an equalized signal to a recorder. If you have one that doesn't, simply connect the output of the equalizer to the input jacks of your tape recorder.

There are two cautions to be observed when you record through an equalizer, however. First, don't use your "house curve," the one you normally use to compensate for speaker/room problems. If you do, when you play the dubbed version back through your system with the equalizer at its normal settings you'll find that you've simply doubled your speaker corrections without fixing the imbalance of the record. What you want to do in dubbing an odd-sounding record is to find the frequency compensation that makes it sound the way others in your collection sound *without* equalization, so that the dub will sound right when played back with your normal settings.

The second caution is to use as *little* recording equalization—particularly at the frequency extremes—as possible. The cassette medium automatically uses a very large amount of treble boost in the recording process, for example, and to add much more is to risk tape saturation. You can boost the high end of a treble-shy record slightly, but you'll have to experiment to see how far you can go without saturation.

Another important use for an equalizer is in educating yourself about the

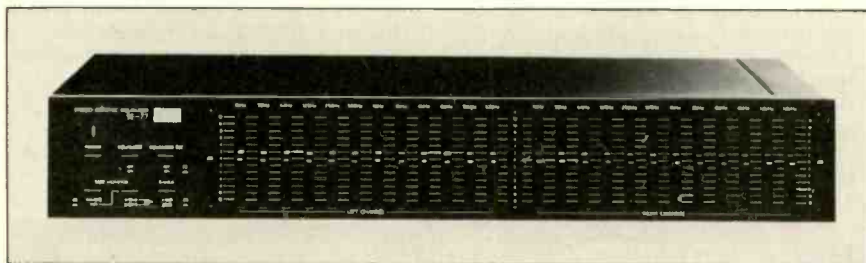
frequency distribution in music. While a unit with a spectrum display makes this more dramatic, even a "plain" equalizer can yield surprising insights when you experiment by raising and lowering individual sliders that cover known, identifiable bands. For example, you'll find that 1,000 Hz, the normal frequency used for testing equipment, isn't really in the middle of the *audible* spectrum. In fact it's just about two octaves *above* middle C. Moreover, you'll find that there is usually very little musical content in the lowest (20 to 40 Hz) and the highest (above 15,000 Hz) parts of the nominal audio frequency range. Exploring just what you have to do with your equalizer to, say, make a voice on FM sound nasal or tubby will train your ears in things to listen for when speaker shopping.

And if you are interested in really comparing speakers, an equalizer can be a wonderful tool even without other instruments. Place a speaker to be tested next to your reference speaker and feed it equalized sound, leaving the reference unequalized. If you now adjust the equalizer so that both speakers sound the same, you can read the frequency-response difference(s) between the two speakers from the positions of the equalizer knobs. While you *can* use musical material to make these adjustments, you'll find that a constant noise source (FM interstation hiss if your equalizer doesn't have a pink-noise generator) is a lot quicker. If you can take

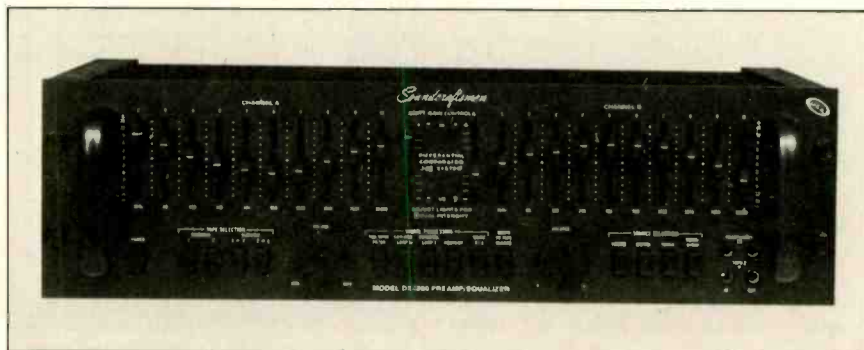
a pair of new speakers home for a try-out before buying them and compare them with those you already have, you could save yourself a costly mistake—or confirm your hope that the new speakers really do give a broader, smoother response.

There are, of course, limits to what stereo equalizers can accomplish, and there are some precautions to observe in using them. An equalizer will not extend the designed-in high- and low-frequency limits of a speaker very much. If you try to use one to supply large boosts at the frequency extremes, you're likely to find that your amplifier begins to distort and/or that your speakers' woofers "bottom out" or their tweeters burn out. Similarly, while an equalizer may help *tame* standing waves (spots in the room where specific bass notes sound either excessively loud or soft), it won't cure them. Moving your speakers a foot or so in any direction may do as much or more good.

Finally, if you equalize for perfectly flat *measured* room response, you're likely to find the sound too bright. That's because in a concert hall the treble frequencies are *naturally* attenuated both by transmission loss through the air and by absorption by the walls, floor, ceiling, chairs, audience, musicians, etc. Listening to a loudspeaker, you're much closer to the sound source than you would be in the hall, and your room's boundaries may not absorb as much high-frequency energy. Thus, you're likely to want to adjust for a smooth tilt or rolloff in room response (perhaps 3 dB per octave above 2,000 Hz, depending on your room) before you're satisfied with the result. That slightly rolled-off treble is the sound you've learned to recognize as "flat," that is, as "the way you'd hear it live." And without an equalizer you wouldn't be able to hear it from your home system at all. □



Above, Sansui's SE-77, a twelve-band graphic equalizer with infra- and ultrasonic bands (centered at 16 and 32,000 Hz) for smoothing the ends of the response curves. It also has two-way dubbing equalization. Price: \$280.



Right, the Soundcraftsmen DX4200. It combines a ten-band graphic equalizer with the source-switching, amplifying, dubbing, and level-control functions of a preamplifier. Price: \$699.

HOW TO DEAL WITH YOUR AUDIO DEALER

By Steve Booth

An airline advertising slogan used to tell us that Getting There Is Half the Fun. And for many people the enjoyment of actually traveling to a resort is an important part of a vacation. Similarly, for many hi-fi enthusiasts the process of studying available equipment and deciding what to buy is an important aspect of their interest in audio and the pleasure that they get from it.

A private STEREO REVIEW survey of hi-fi component buyers made last year showed that the majority spend more than five months in study and comparison shopping before making a final decision on the purchase of any major unit in their stereo installation. Of those surveyed 85 per cent consulted dealers—among others—while making up their minds, and four out of five of these people (68 per cent overall) found the dealer's advice helpful.

Not everybody reports favorably on encounters with audio dealers. Beginning audio buyers often approach the process with feelings of inadequacy and trepidation. But a great deal of anxiety and trouble can be avoided by efforts of

the consumer alone. Suitable preparation before you shop can help you get the products you want.

A Cautionary Tale

To show what *can* go wrong, however, when unwary shoppers encounter the many pitfalls of the hi-fi marketplace, let's consider a "worst-case" example from real life. A young couple planning to spend up to \$500 for their first cassette deck became so discouraged after visiting four reputable hi-fi dealers in a large metropolitan area that they ended up buying nothing.

What happened is that the couple—let's call them the Smiths—had seen a manufacturer's ad for a deck ("Brand A") with the features they wanted, styling they liked, and a suggested retail price that fit their budget. Armed with this information alone, they hit the streets looking for the best deal on their selection.

The first dealer they visited didn't carry that brand of tape deck at all, and he volunteered the information that the manufacturer was about to go out of

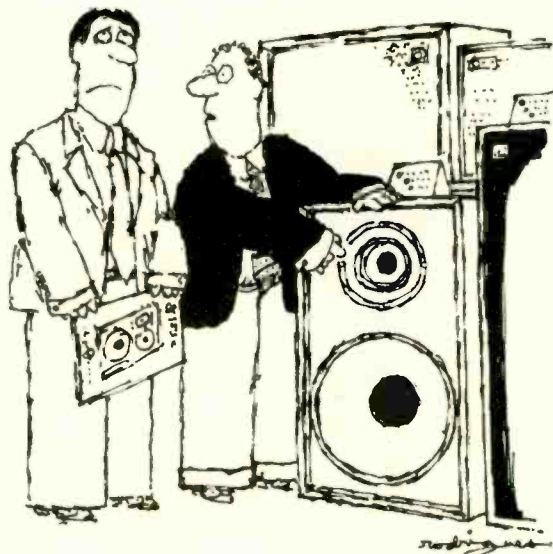
business. He offered to save them money on a comparable deck from another company whose line he carried. The Smiths walked out.

The second dealer carried both the brand they originally wanted and the one offered by the first dealer, as well as others. He couldn't confirm whether Company A was going out of business or not, but he said that the Brand B machine offered by the first dealer was a "discontinued" model. He offered to meet the other dealer's price on that deck with a current model from the same manufacturer—but he assured the Smiths that they would *really* be happier with a deck made by Company C that was similar in price and features to the one from Company A that they had originally wanted. Feeling unsure at this point, the Smiths decided to shop further.

The third dealer didn't carry any of the brands A, B, or C. But he offered them a Brand D deck for the same price as the Brand A and Brand C models, claiming that it would perform at least as well. And if they wanted something cheaper, he could match the price and value of the discontinued Brand B model with a discontinued model from still another company! This was really confusing, because the second dealer had strongly implied that buying a discontinued model was a bad idea.

The Smiths' last stop was at a dealer whose stock included all the brands they had seen so far. The salesman assured them that all the decks they had been shown were well-made machines from reputable manufacturers. Moreover, he said that his store would itself guarantee anything it sold, including products from any manufacturer that might go out of business. If a component purchased there couldn't be fixed on the premises within a week, the store would provide a "loaner" until it was. But then he suggested that the Smiths consider still another cassette deck, from a manufacturer that none of the other stores had carried, at a price close to their budget limit. ▶

"... Another nice feature is the crossover network, sir. It utilizes heavy-gauge wire so the sounds that cross over into the midrange speaker will have, in effect, a safe crossing."



The Smiths conceded that this Brand F deck did seem to be worth its price, and the fourth store and the salesman who spoke with them had impressed them favorably. But by that time, confronted with such a multiplicity of choices and such conflicting, though seemingly reasonable, arguments for them, they chose to withdraw from the field until they could study the literature more carefully and come back with a clearer idea of the kind of deck they wanted.

The best that can be said of the Smiths' experience is that it is *not* typical of that of most hi-fi component buyers. Like most shoppers, the Smiths visited several different stores and considered factors other than price alone; unlike most other buyers, they had a definite product in mind when they set out. So why did they end up empty-handed? The reason is that they hadn't done enough "homework" to be able to defend their initial choice or to discuss their requirements with dealers offering competing products. The trouble was not in the dealers' sales pitches but in the Smiths' lack of preparation. Faced with multiple offers of equivalent or better products at the same or lower prices, they found themselves unequipped to decide.

Be Prepared

Knowing what you want and need, not merely what you can afford, is the first step toward making a satisfactory purchase. You wouldn't go shopping for a car without deciding in advance

whether you need a four-wheel-drive, all-terrain vehicle or a three-speed, automatic-transmission subcompact, yet some people will go into an audio store to buy, say, "a tape deck" without even deciding whether they will use the machine primarily to make and play back their own recordings (and, if so, from what kind of source) or will use it most-

an incompetent or dishonest salesman to stick to the facts.

Communication goes both ways. While *you* may know clearly what you're looking for, even the most well-intentioned and discerning salesman can't read your mind. You have to provide enough information about your tastes, circumstances, and needs for

"Knowing what you want and need, not merely what you can afford, is the first step toward making a satisfactory purchase. . . ."

ly to play commercially prerecorded tapes.

Customers who go shopping without clear objectives tend to settle for products that are merely unobjectionable rather than optimal for their needs. They make themselves dependent on the sincerity and knowledge of strangers, and the two don't always coincide. Actually, most of the misinformation bandied about by audio salespeople owes more to incompetence than to a willful intent to deceive. An under-trained, inexperienced, or ill-informed salesman may try to satisfy you with any answer that comes to mind rather than admit his limitations or send you away disappointed. But a well-informed customer cannot easily be misled. Asking intelligent, relevant, and precise questions will usually lead even

him to advise you intelligently. He'll need to know what kind of music you listen to and how loudly, whether you play music as background to other activities or like to listen closely with no distractions (or both at different times), the size and shape and type of furnishings in the room where you'll install your equipment, and the kind of program sources (tuner, records, cassettes or open-reel tapes, Compact Discs, video tapes or discs, etc.) that you either have now or are interested in having at some future time.

If you're not shopping for a complete system, he'll also need to know what other equipment the components he may sell you will have to be compatible with. And, finally, he'll need a realistic estimate of your budget limitations as well as an idea of how you rank other factors (performance, features, style, etc.) as compared with price. (For an example of how one audio dealer helps his customers give his salespeople the information they need, see the questionnaire reproduced on page 57.)

No matter how well they prepare, many people will not have enough information to make a rational, definitive purchase decision before they ever enter a store. Even if you have a *very* good idea of what you want, it's just possible that the dealer will be able to show you something even more to your taste that you hadn't seen or read about before, suggest a feature or performance parameter whose value you hadn't considered, or point out an advantage or a limitation of a particular product that was not evident from the advertising or literature you studied.

On the other hand, if you are in the market for just one specific component and are sure of exactly which model you want, use the Yellow Pages or write or call the manufacturer (there's often a toll-free inquiry number given in advertisements) to find out which dealers

STEREO ACCESSORY



"... Do speakers really sound better with Godzilla Cable? I can only tell you that in Los Angeles, when asked, 128 out of 150 ouiya boards said yes."

in your area carry it. The first mistake made by the Smiths in our opening example was to select a particular deck and then go into stores at random hoping to find one that carried it.

Shopping for several components at once, or for a whole system, is naturally much more complicated and requires even more preparation than going out just to buy, say, a new tuner or tape deck. But it can also create the opportunity to get a much better deal. You can often get price breaks on the individual costs of components if they are bought as part of a package. And when a dealer is helping you to assemble a whole system, he can suggest alternative models that will work well together and possibly offer better features or performance for the money than what you originally had in mind. If you go from store to store to buy several different components, you run the risk of making mismatches of your own—which then won't be covered by any one store's guarantee. In addition, you won't get the best possible advice from dealers because you're not giving them the full picture of what you're after or the incentive to spend a lot of time working

with you to make sure your purchase will be satisfactory.

By and large, audio dealers, like other retail merchants, are in business for the long run. Those who hope to continue making a profit need satisfied customers—customers who will come back again to buy new products or to upgrade their systems, customers who will refer their friends and other potential buyers. Thus, it's really in a dealer's interest to see that you get fair value for your money. Only a character flaw—one that's fatal to business success in the long run—could lead a retailer to behave otherwise.

But even granted a presumption of fair dealing, our opening example pointed up some oddities in hi-fi retailing that can be a source of confusion, or worse, to unwary shoppers. For instance, why would a dealer carry only two brands of a popular component category? How can two dealers price the same piece of equipment differently? Why would a retailer offer to match another's price on a different brand of product—or match the price of a discontinued model with a mint-new component of the same brand? Why do

some dealers carry brands that no one else in the area has? And so on. The answers to such questions lie in the structure of the hi-fi marketplace, the distribution strategies of the hi-fi equipment manufacturers, and the pricing flexibility granted to dealers by law and custom.

The Hi-Fi Market

Unlike new automobiles, which are sold only by dealers whose business is limited to cars, and usually only one or two brands at that, audio equipment is sold by a wide variety of "trade classes"—merchants whose product lines, services, and prices may differ substantially. Generally speaking, the less a dealer offers in the way of expert advice and after-sale service, the lower the purchase price for what he sells.

At one end of the market are the *audio specialists*. These dealers generally sell only one type of product—audio equipment. But within this category there is also a wide range. Some audio stores will sell every kind of equipment, from the most esoteric, high-priced components for finicky ears and bot-

When a Deal Is Not a Deal

SOMETIMES what appears to be a great deal is no bargain! "Buyer beware" is a good slogan to bear in mind when you're confronted with certain types of promotions, merchandise, and merchandisers. In the end, you only get what you pay for—one way or another.

The "penny cartridge" and the "dollar loudspeaker" are legitimate retail ploys—as old as hi-fi retailing itself—to get you into a store where you may buy other merchandise. But they're not necessarily good deals. The "penny cartridge" is probably not the best you can buy on your budget. Since you're paying for it anyway—the real cost is buried elsewhere, usually in the turntable price—ask the dealer to put its value toward a better model and pay the difference. The "dollar loudspeaker" ("Buy one for \$89 and get the other for only \$1") may or may not be worth half the total price of the deal. Make sure that the speakers (both of them) are suited to your system, satisfy your ears, and carry reasonable warranties.

Certain types of merchandise should be regarded very carefully no matter how attractive the price. One such is "gray goods" (see box on page 58), and another is the so-called "private label" or "house brand" manufactured for a specific dealer. The profit margin on a house brand is high because the dealer can set any price he wishes; moreover, you can't shop around for the best price since no one else

carries the product. The quality of private-label or house brands ranges from okay to awful. But even when the product happens to be good, it will have less resale or trade-in value since there's no established reputation or price structure. With a type of component that you expect to keep for a very long time, this may not matter, but for anything you might want to upgrade in a few years, it's a bad deal.

Other types of risky merchandise are used goods and so-called "factory reconditioned" products, also known as "B goods." By law, used merchandise must be identified and advertised as such. If you buy it from an established dealer, he will probably offer some sort of limited warranty, but its value depends on the capabilities of his service department. And if you move to another part of the country, you're on your own.

There is a class of itinerant merchants that proliferates in bad economic times. Their so-called "road shows" zoom into town, set up in a vacant lot or motel parking area, and "blow out" merchandise at extremely low prices. Sometimes these merchants are liquidators selling off repossessed or surplus goods; sometimes an established retailer will use such an operation to unload excess inventory outside his normal market. The goods might be current major-brand products in the original cartons, but they can also be recondi-

tioned goods, private-label brands, damaged goods, or even those shady items known as "knock-offs."

A knock-off is an inferior product that is designed and packaged to resemble a "name brand" product, thereby exploiting a major manufacturer's reputation and consumer good will while siphoning off sales. A notorious example of such parasitic offerings is the "Jessen" car stereo knock-off that was barred from importation and sale last year; it aped the logo and design of the Jensen car stereo line. Other knock-offs are more subtle. A salesman might tell you, for instance, that the unknown brand he's showing you is actually made by a famous manufacturer—or that it includes parts made by that manufacturer. Big deal; many reputable manufacturers sell off parts that don't meet their quality standards. If you really want a Brand A product, buy the real thing, labeled as such.

Regardless of the quality of the merchandise offered by itinerant sellers, consider your recourse (or lack thereof) if the product you buy is a dud or needs service later. It could cost you much more in the long run, to fix it or replace it, than you saved on it in the first place.

Finally, when it comes to the matter of buying "hot" or stolen merchandise, your own moral sense should be your guide. Just don't expect to have the manufacturer's warranty honored for "swag."

tomless pockets to decent-sounding compact systems to fit the budget of a high-school student. Then there are the high-end-only "audio salons" and custom specialists, the ones where if you have to ask what it costs you probably can't afford it. At the other extreme—but still within the class of audio specialists—are the audio chains, which concentrate on the "bread-and-butter" mid-priced hi-fi components, with perhaps only a few offerings at the high and low ends.

What all the audio-specialty stores have in common is salespeople with some degree of audio expertise, some kind of in-house service facilities, showrooms equipped for demonstrating and comparing equipment, and, usually, fairly generous return and exchange privileges. They may also offer free or nominally priced delivery and even installation of the equipment they sell. All of this can make shopping more pleasurable and less risky, but it doesn't come for nothing. Prices in these stores are generally higher than in other types of stores that sell audio equipment, especially if the dealership is independently owned and doesn't have the high-volume buying power of a chain.

In a different but related category of dealer are the so-called *consumer-electronics retailers*. These dealers sell a lot of things besides hi-fi components: video equipment, audio and video software (discs and tapes), car stereos, calculators, computers, video games, CB equipment, and so on. Because these stores concentrate at least on *electronics* products, they can offer a fair level of knowledgeable advice and service to hi-fi shoppers, if generally somewhat less than the audio specialists do.

Audio equipment is also sold in de-

partment stores, hardware/housewares stores, TV/appliance emporiums, and other *mass merchandisers*. Even in the few cases where the selection rivals a small specialty store's, the diversity of a mass merchandiser's wares and the usual high turnover of salespeople makes it rare to find a salesman able to

model number, fork over your cash, and get a "factory-sealed" carton. Knowledgeable advice isn't extra—it's not available. If anyone working in one of these stores can tell you anything more than a model's price and a few specifications, it's by chance, not design.

There's no doubt that discount out-

"... a lot of the confusion... derives from competitive practices that can work to the advantage of careful, informed shoppers."

do much more than parrot the manufacturer's literature. Such stores do strive for customer satisfaction, however. While few offer on-premises service, most will exchange defective or otherwise unsatisfactory goods within a stated time after purchase, after which you have the manufacturer's warranty to rely on. Because they buy in large quantities, these mass merchandisers can offer very good prices on audio equipment. You just have to bring a lot of your own knowledge into the store in order to be able to recognize which products are good values for you.

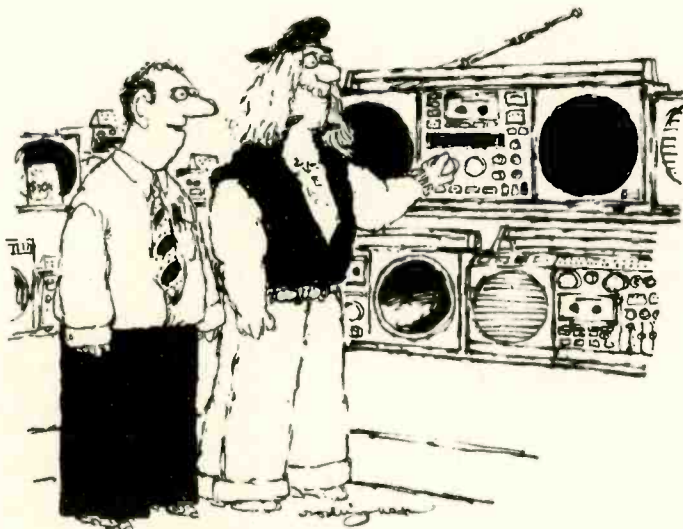
Finally, there are the *discount houses*, including mail-order discounters, which sell high-demand, fast-turnover products (whether audio only, audio and video, or a whole range of categories) solely on the basis of price. Little is lavished on store fixtures, sales training, service, or anything else that might add to the cost of the products. Merchandise is seldom even displayed, let alone demonstrated. You furnish a

lets can offer very low prices, but buying from them is best left to the rugged individualists who know exactly what they want, don't need any advice or help, and are willing to send their equipment off to the manufacturer (or an authorized service center) if it ever needs repair. While a discounter will usually exchange an obviously defective unit for another of the same model, beyond that the only warranty or backup you get is whatever the manufacturer offers.

Prices and Deals

Competition, whether on the basis of price, service, or anything else, is supposed to help the consumer ultimately. But the competitive nature of the hi-fi marketplace is responsible for a lot of the shopping confusion buyers have to contend with. Manufacturers compete with each other, and they use advertising to try to persuade potential customers to seek out and buy their products. But dealers—and categories of dealers—also compete. If you look closely, you're liable to see the same brands across the street from each other. Most often, of course, dealers try to attract prospective buyers on the basis of price; that is, they compete through the discount each is willing to make from the manufacturer's "suggested retail price."

Since federal law prohibits manufacturers from "fixing" retail prices, thereby stifling competition, the suggested retail price (or "list price") is merely a manufacturer's estimate of a price that is competitive with that of comparable products and allows a certain percentage of profit over the retailer's cost. It is likely, then, to represent a *maximum* price for the product, making it something of a guide to the amount of discount you're getting. Although the list price for a product might not appear in the manufacturer's



"... Of course, it won't sound exactly the same when you play it on a crowded bus..."

or retailer's ads, it can usually be found in product reviews in hi-fi magazines or in annual directories such as **STEREO REVIEW's Tape Recording & Buying Guide** or *Stereo Buyers Guide*. (Audio component directories, by the way, might not list "private-label" or house brands, since they aren't available to other retailers and probably not to the majority of consumers.)

Bear in mind, however, that intermediate price reductions do occur as a product nears the end of its selling life. It's shoddy practice for a retailer to trumpet in his ads a deep discount on the "original suggested retail price" of a three-year-old model that he has gotten from the manufacturer at much less than its original cost.

Average price levels among the different audio trade classes vary so widely because different kinds of dealers can afford different levels of discounting—or, what is the same thing, need different amounts of mark-up to make a profit. But within the same trade class, different dealers may compete on the basis of many things other than price—services, guarantees, and, especially, selection (the models offered for sale). In any case, all the different audio retailers compete for customers shopping for components within a certain price range. If a dealer can't meet his competition's price on one model in a brand, he may be able to do so on another, or with an equivalent product from a different manufacturer, or by offering the product as part of a package, and so on. That's why it's very important for you to know what factors besides price are important to you.

While most assembly-line audio equipment is widely sold by different classes of dealers, some highly regarded brands have "limited distribution" agreements with a network of dealers. In any given area, only one or a few dealers will be allowed to carry that brand, thus providing them a competitive advantage. If a customer wants that brand, or can be persuaded that it's what he needs, the dealer won't have to shave his profit margin by competing in terms of price; he can demand the full list price. Watch out, though, that an "exclusive" brand is not just a house brand (see the box on page 55, "When a Deal Is Not a Deal").

How much or how little profit a dealer can or wants to make on an item only partly explains why prices differ from store to store. Other factors that affect retail pricing—and which can lead to bargains for buyers—include volume-purchasing discounts, model changes and close-outs (discontinued products), "leader" models, "push lines," and even more esoteric marketing arrangements

between manufacturers and retailers.

Volume purchasing is the basis of the great majority of "deals" to be found, and, as noted earlier, it is a major reason for the generally lower prices available from audio chain stores, mass merchandisers, and discount houses. The more of any given component a dealer orders, the lower his unit cost and the cheaper he can sell it at a profit—provided he can sell a lot. Large inventories that don't turn over quickly can eat up a dealer's volume-discount savings, so such merchandise is often priced only a little above wholesale in order to move it out of the store as fast as possible.

Dealers can save—and pass on their savings to customers—by buying large quantities of a number of different models in a manufacturer's line. But they can also concentrate on one model

and use it as a traffic-generating "leader." (It's not necessarily a "loss leader," since the rock-bottom price may still allow a small profit.) Attractively priced leader models draw more customers into a store, where they may buy different or additional products at higher markups.

Another form of volume deal, called the "push line," comes about when a manufacturer wants to establish or strengthen his position in a market. Typically, the manufacturer will offer selected dealers extra discounts on merchandise and other help to build consumer demand for the line, such as co-op advertising in local media (the manufacturer and the local dealer split the cost), rebates, and premiums ("gifts" to purchasers). In addition, the manufacturer might offer special incentives to a

Your Music System Requirements

Audio Craft is truly unique. We really care. Our prime concern is to fit a music system or component to your exact needs.

To make that right fit we must ask questions. Your

answers will enable us to focus quickly and accurately on you and your needs.

We are different. We will take the time to guide you to the correct selection of equipment.

Do you own a stereo music system?

Yes No

What pleases you the most about your stereo music system?

What doesn't your stereo music system provide that you would like to have?

What role does music play in your home?

What musical experience have you had recently that has impressed you?

If it were within reason, would you like that experience duplicated?

Yes No

What types of music do you prefer?

Classical
 Hard Rock
 Soft Rock
 Jazz
 Popular
 Country

How loud will you normally be playing your stereo music system?

Extra Loud Loud
 Average Soft

What component capabilities do you want in your stereo music system?

Radio		
AM	<input type="checkbox"/>	<input type="checkbox"/>
FM	<input type="checkbox"/>	<input type="checkbox"/>
Record Player		
Single Play Semi-Automatic	<input type="checkbox"/>	<input type="checkbox"/>
Single Play Automatic	<input type="checkbox"/>	<input type="checkbox"/>
Multiple Play Automatic	<input type="checkbox"/>	<input type="checkbox"/>
Tape Recorder		
Cassette	<input type="checkbox"/>	<input type="checkbox"/>
Open Reel	<input type="checkbox"/>	<input type="checkbox"/>
Digital Disc Player	<input type="checkbox"/>	<input type="checkbox"/>
Extension Speakers	<input type="checkbox"/>	<input type="checkbox"/>
TV Audio Through the Stereo Music System	<input type="checkbox"/>	<input type="checkbox"/>
Remote Control Capabilities	<input type="checkbox"/>	<input type="checkbox"/>

How is the AM, FM, TV reception is your area?

Good Bad

Do you have or are you familiar with phonograph record, needle, and tape deck maintenance accessories needed to keep your equipment operating properly?

Yes No

What do you expect from the retailer from whom you purchase your stereo music system?

How much do you intend to invest in your stereo music system? \$

Will you want to take advantage of Audio Craft's free delivery and system set-up service?

Yes No

How will you be handling payment of your new stereo music system?

Credit Card Cash/Check Financed

Do you have any further questions or needs that we have not covered?

WHAT is the physical layout of your listening room?

Good salespeople ask a lot of questions, so don't get your guard up as long as the questions pertain to hi-fi. The questionnaire reproduced above is given to customers of Audio Craft, a Cleveland, Ohio, audio dealer. Their answers help the store's salespeople gauge customers' needs. Copyright Audio Craft, reprinted with permission.

store's sales personnel—in the form of merchandise or monetary bonuses (called "spiffs")—to get them to "push" the line.

Volume buying isn't limited to new merchandise. Retailers often jump at the opportunities provided by changes in a manufacturer's line, snapping up large quantities of discontinued models at "close-out" prices. And the manufacturer is equally eager to part with discontinued equipment. Moreover, even models still in the line may be heavily discounted if their position has changed—for instance, if last year's top-of-the-line receiver has been demoted by this year's sensation at the Consumer Electronics Show. The previous top model can become a good leader for an astute dealer and a good bargain for a smart shopper.

The main thing to consider in evaluating an attractively priced close-out is why the model was discontinued. Was it simply to make room for a newer one with different styling, minor changes in features, or slight improvements in performance? Or has there been a quantum leap in audio technology that makes the older model, however worthy in its day, distinctly less than "state-of-the-art" now? Or, though rather unlikely, was the discontinued model a "lemon" from the start, a poorly designed or badly built product that is finally being abandoned?

One of the best ways to answer these questions, of course, is to study the literature—including the specs and features of both the discontinued model and the one replacing it in the line as well as any published test reports on them in *STEREO REVIEW* and other audio magazines. If you cannot find such information about a specific product, study the specs of similar products and prepare yourself to ask informed questions of the dealer. Again, it is in a dealer's best interests to answer your questions honestly. And the better he knows your requirements and preferences, the better advice he can give you.

You'll also have to use your ears and, if possible, your hands to check the product out, just as you would a brand-new model. Major advances in audio technology don't occur as often as model changes, and the differences between last year's top of the line and this year's may not be audible to you or may be in areas you don't care much about (for instance, if you don't listen to more than a couple of FM stations, having sixteen presets on a tuner or receiver is, for you, a "frill" you can do without).

Besides, not everyone needs, or can afford, "state-of-the-art" equipment. A good product will still be good even if a better one has been introduced. So if

you can get a deal on a discontinued model from a reputable manufacturer that seems right for you, by all means take it.

A Last Word

As our initial example of the couple shopping for a cassette deck showed, the hi-fi marketplace can be a very confusing one. But a lot of the confusion—especially the wide variability in retail prices—derives from competitive practices that can work to the advantage of careful, informed shoppers. Knowing how the marketplace works, you'll be better equipped to evaluate what different salespeople tell you—for instance, why one may disparage a discontinued model while another praises it. People are fairly honest, by and large, and it's rare to find an audio salesman who will actually try to cheat his customers. Salespeople are not disinterested either; obviously, their job is to sell their products. On the other hand, if you establish a continuing working relationship with one or two audio dealers, you will probably find that you have a good source of informed advice there.

When you go shopping for audio equipment, from a single component to a complete system, you'll need all the advance preparation you can get through studying the literature and

talking with others who own good equipment. And you also need some psychological priming. Keep your critical faculties sharp, don't allow yourself to be rushed or pressured, and never forget that you can always say "No." Don't be afraid to ask questions, take notes, and request literature or a demonstration (if the store is equipped for it). And especially if you're buying more than one component at a time, don't hesitate to bargain; as we've seen, the "suggested retail price" is only a suggestion. Finally, don't be afraid to say you'll think it over and come back. You're going to have to live with the equipment you buy, not the salesman, and you should be sure that you will be happy with it.

If you take a lot of time between beginning to think about buying something and actually taking your new gear home, remember that you're not alone: most people who buy component-level stereo equipment do. And *STEREO REVIEW*'s survey also showed that most people who shop carefully end up with equipment that satisfies them—at least until the "upgrading bug" hits them again! □

Steve Booth is senior editor of Audio Times, a New York-based trade journal that has been covering the retail hi-fi business for twenty-five years.

The Gray Market

BESIDES the legitimate discounts from a suggested retail price, some of the "unbelievably low" prices you see quoted for foreign-made audio goods result from an ethically and legally dubious practice called "the gray market" or "parallel importing." What this means is that the dealer has acquired the merchandise from a source other than the authorized importer or domestic subsidiary of the foreign manufacturer. His cost for the goods is lower, since by eliminating a middleman he avoids helping pay for the national advertising and other expenses of doing business in the U.S. that are absorbed by the legitimate domestic supplier and reflected in higher prices to dealers.

Although buying gray goods may save consumers money too, purchasers run the risk of losing warranty protection. Warranties are generally issued by the authorized importer or domestic subsidiary, rarely by the overseas factory, and gray goods may either come without warranty cards or have cards that will not be honored. In some cases, the dealer himself will back up the product (if he has a service department that can do the work), and major manufacturers will of-

ten honor even illegitimate warranties to protect their reputations. But there is still a risk of getting a product cheaply that will require expensive servicing.

It's hard to tell if a given product was acquired on the gray market. The packaging will not say so, and the low price itself is not a reliable clue since the availability of gray goods often causes other retailers to lower their prices on goods bought through the normal distribution channels. Missing or strange-looking warranty cards may be the best warning signal.

If you suspect that you're being offered gray goods, demand to see the manufacturer's warranty cards and insist on clearly stated return or exchange guarantees (on paper) from the dealer. If you get a brush-off, you can take a walk—or take the risk.

The gray-market phenomenon might be short-lived. At press time there were cases before the federal courts that could halt the practice. If the courts grant protection to the authorized importers and domestic subsidiaries, the Customs Bureau has new regulations and procedures already drafted that would stop gray goods at the docks.

25 Top Compact Discs 25

Not all Compact Discs sound great.
Here are some of the best.

By David Ranada

THERE are now several hundred digital Compact Discs (CD's) on the market. If you were a firm believer in advertising copy, you'd unquestioningly think that every one of them is a paragon of sonic virtue, a recording suitable for demonstrating the capabilities of your stereo system or of filtering out less satisfactory components while shopping. Not so! In reality, a relatively small number of currently available CD's—I estimate about 10 per cent—meet the highest standards of sonic quality, standards established by hundreds of fine-sounding "black-disc" analog LP's.

The CD's cited below as demonstration-quality recordings, however, have been chosen according to one basic criterion: each must show off at least one of the attributes that makes the CD system potentially superior to any other consumer music medium. Principal among these characteristics are a very wide dynamic range, very low-level background noise (especially noticeable in classical music and in the increased clarity of bass frequencies in all types of music), no wow-and-flutter (when the CD is derived from a digital original recording), very low distortion (most evident in high-level passages), and flat frequency response extending from the lowest to the highest audible frequencies. Most of the discs listed here incorporate *all* of these attributes. To lend some objectivity to what otherwise were my totally subjective sonic and musical judgments, I have included some oscilloscope photos that visually portray the

dynamic range of several CD's (also see the box on page 61).

Don't think, though, that these are the *only* CD's of demonstration quality. I've been able to hear all, part, or as much as I could stand of just about half of the 450 Compact Discs said to be available in the United States. There are probably many more that are worthy of showing off the CD system. If you like the sound of the analog pressing of a recording now available as a Compact Disc, you'll probably like the sound of the CD as well.

There are quite a few CD's that sound just as bad as their black-disc equivalents because the master tapes were recorded poorly. But several of the recordings I like best derive from analog-tape originals, showing once again that it is not the original recording *medium* that determines the overall sound quality but how well that medium is used.

Classical Music

- **BACH: *Goldberg Variations***. Glenn Gould (piano). CBS MK 37779 (digital original).
- **BACH: *Concertos for Three and Four Harpsichords***. Trevor Pinnock, Kenneth Gilbert, Lars Ulrik Mortensen, Nicholas Kraemer (harpsichords); English Concert, Trevor Pinnock cond. ARCHIV 400 041-2 (digital original).
- **BEETHOVEN: *String Quartet No. 1, Op. 18, No. 1; String Quartet No. 5, Op. 18, No. 5***. Smetana Quartet. DENON 38C37-7036 (digital original). ▶

□ **BERNSTEIN:** *West Side Story, Symphonic Dances.* **GERSHWIN:** *Rhapsody in Blue; Piano Prelude No. 2.* Leonard Bernstein (piano); Los Angeles Philharmonic Orchestra, Leonard Bernstein cond. DEUTSCHE GRAMMOPHON 410 025-2 (digital original).

□ **COPLAND:** *Fanfare for the Common Man; Rodeo, Dance Episodes; Appalachian Spring Suite.* Atlanta Symphony Orchestra, Louis Lane cond. TELARC CD-80078 (digital original).

□ **FALLA:** *The Three-Cornered Hat; El amor brujo.* Colette Boky (soprano); Huguette Tourangeau (mezzo-soprano); Orchestre Symphonique de Montréal, Charles Dutoit cond. LONDON 410 008-2 (digital original).

□ **HANDEL:** *Water Music Suite; Music for the Royal Fireworks.* Academy of Ancient Music, Christopher Hogwood cond. L'OISEAU-LYRE 400 059-2 (analog original).

□ **MUSSORGSKY:** *Pictures at an Exhibition (arr. Ravel); A Night on Bald Mountain (arr. Rimsky-Korsakov).* Cleveland Orchestra, Lorin Maazel cond. TELARC CD-80042 (digital original).

□ **ORFF:** *Carmina Burana.* Atlanta Symphony Orchestra and Chorus, Robert Shaw cond. TELARC CD-80056 (digital original).

□ **RAVEL:** *Daphnis et Chloé.* Orchestre Symphonique de Montréal, Charles Dutoit cond. LONDON 400-055-2 (digital original).

□ **RIMSKY-KORSAKOV:** *Scheherazade, Op. 35.* Concertgebouw Orchestra, Kiril Kondrashin cond. PHILIPS 400 021-2 (analog original).

□ **RODRIGO:** *Concierto de Aranjuez; Fantasia para un gentilhombre.* Carlos Bonell (guitar); Orchestre Symphonique de Montréal, Charles Dutoit cond. LONDON 400 054-2 (digital original).

□ **RODRIGO:** *Concierto Madrigal; Concierto Andaluz.* Los Romeros (guitars); Academy of St. Martin-in-the-Fields, Neville Marriner cond. PHILIPS 400 024-2 (analog original).

□ **STRAVINSKY:** *The Firebird.* Concertgebouw Orchestra, Sir Colin Davis cond. PHILIPS 400 074-2 (analog original).

□ **STRAVINSKY:** *The Rite of Spring.* Cleveland Orchestra, Lorin Maazel cond. TELARC CD-80054 (digital original).

Pride of place in the ranks of CD demonstration records must go to those on the Telarc label, only some of the most spectacular of which are listed above. Telarc's minimal-miking techniques lead to recordings with very wide dynamic range, very low background noise, and wide and even fre-

quency response. If I had to pick only one CD to show off what the medium can do, it would be Telarc's Copland recording. The opening tam-tam stroke of the *Fanfare for the Common Man* has never had such startling impact, nor has the end of *Appalachian Spring* ever faded into such delicious silence as on

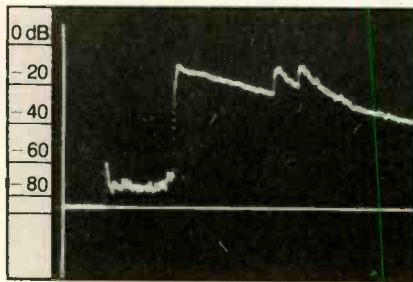


Figure 1. The start of Copland's *Fanfare for the Common Man* (Telarc CD-80078) with a tam-tam stroke about 70 dB above the background noise. Trace duration is 8 seconds.

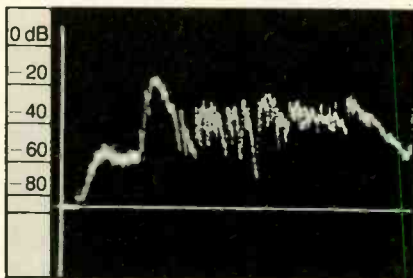


Figure 2. An excerpt from Pink Floyd's "The Final Cut" (CBS CK 38243) including a passing jet and explosion (large hump at left). Trace duration is 1 minute, 22 seconds.

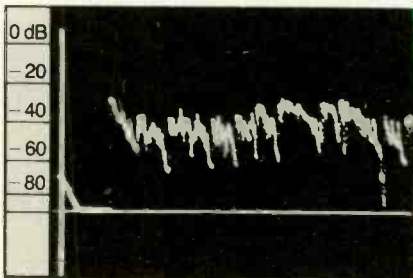


Figure 3. Freddie Hubbard's "Back to Birdland" (RealTime RT-3005) has wide variations in level and very low background noise, as shown by the sharp dip at right.

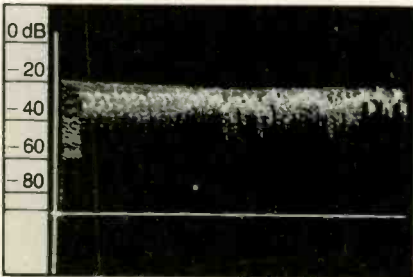


Figure 4. Billie Jean by Michael Jackson (Epic EK 38112) has an overall dynamic range that decreases greatly as the bass line comes in after the opening drumbeats.

this disc (see Figure 1). For generally excellent sonics—with somewhat less of a dynamic range than the Telarc records—you can depend on the tastefully multimiked London recordings of Charles Dutoit and the Orchestre Symphonique de Montréal.

The two recordings of Bach keyboard music and the two Rodrigo guitar-concerto discs show off the digital medium's lack of wow and flutter. Yes, you can hear the late Glenn Gould humming his own *Goldberg Variations* along with Bach's, but for the first, and unfortunately last, time in a Gould recording, the effect sounds lifelike and realistic and, to me at least, is not obtrusive. Less realistic, but a very vivid live concert recording nonetheless, is Bernstein's reading of his *Symphonic Dances* from *West Side Story* (the Gershwin pieces on the same disc are less successful musically and sonically). This disc also demonstrates one of the musical advantages of the CD system's cueing capabilities. Each of the dances has a separate track number (nine in all), so that locating a favorite excerpt is greatly simplified.

Popular and Jazz

□ **DONALD FAGEN:** *The Nightfly.* WARNER BROS. 23696-2 (digital original).

□ **PETER GABRIEL:** *Security.* GEFEN 2011-2 (digital original).

□ **FREDDIE HUBBARD:** *Back to Birdland.* M&K REALTIME RT-3005 (digital original).

□ **MICHAEL JACKSON:** *Thriller.* EPIC EK 38112 (analog original).

□ **BILLY JOEL:** *The Stranger.* CBS CK 34987 (analog original).

□ **KENNY LOGGINS:** *High Adventure.* CBS CK 38127 (digital original).

□ **MAMBA PERCUSSIONS.** PIERRE VERNAY/AUDIOSOURCE PV.78291 (analog original).

□ **JONI MITCHELL:** *Court and Spark.* ASYLUM 51001-2 (analog original).

□ **PINK FLOYD:** *The Final Cut.* CBS CK 38243 (analog original).

□ **TOM SCOTT:** *Desire.* ELEKTRA MUSICIAN 60162-2 (digital original).

It's usually as hard to find a nonclassical recording with very wide dynamic range as it is to find one that hasn't been overequalized or otherwise overprocessed in the making of the original tape. For example, a typical pop recording might have a drum track thumping along in the 60- to 100-Hz range at a level fully 6 dB above the rest of the music. While this might be tolerable with an analog LP played on a low-

Digital Dynamic Range

PERHAPS the most widely touted feature of the Compact Disc system is its potential for storing a very wide dynamic range, in theory as wide as 98 dB. But how much of that potential 98 dB is really being used by typical Compact Discs?

In a preliminary effort to answer this question, I constructed a dynamic-range meter that shows on an oscilloscope screen the level of a recorded signal plotted against time. The vertical scale in the scope traces shown in this article is the rms (root mean square, a type of average) level of a CD player's output. The base line represents the background-noise level of the measurement system added to that of the CD player, the combination being more than 90 dB below the maximum possible CD output level of 0 dB. Time runs steadily from left to right. In all but one of the scope photos shown here, a trace covers 1 minute and 22 seconds of music.

What do the traces show? In all the recordings of music—as opposed to test signals—that I examined in this fashion, *the dynamic-range limits of the Compact Disc medium aren't even approached.*

Take a look at Traces A and B, each from a different recording of the opening of Richard Strauss's *Also sprach Zarathustra*, a work with extraordinary variations between loud and soft when heard live. The opening 32-Hz organ pedal and pianissimo bass-drum roll are shown in the flat portion at the left of the trace, and the climactic portion of this opening sequence ("Sunrise") shows up in the middle (the V-shaped decrescendo/crescendo on a C-major chord). The right half of the trace is the start of the following section for the lower strings and winds ("*Von den Hinterweltern*").

Close examination of these photos reveals many things about the use of a CD's potential dynamic range. Although the opening organ note sounds rather soft in playback, the traces show that it is 40 to 50 dB above the player's noise floor. Trace A's organ pedal is noticeably lower in level than Trace B's. Trace A's climax also peaks slightly higher than Trace B's, showing that for at least this portion of the music the recording that generated Trace A has a wider dynamic range. But the

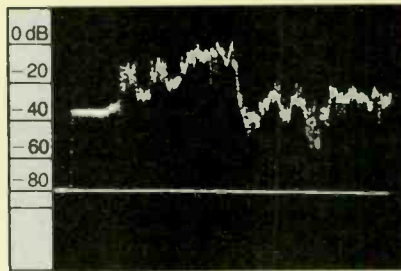
highest levels in both recordings don't come near the maximum output level of the player, nor does the drop in level after the climax even approach the CD's noise floor, though both of these recordings have a vividly wide apparent dynamic range when played at any reasonable (not louder-than-life) volume. According to the calibration marks shown, both recordings have a total dynamic range of about 70 dB (when the whole trace is taken into account). This is 28 dB less than what the CD medium is theoretically capable of reproducing.

Why *don't* CD recordings use the full dynamic range of the medium? The nature of music signals and of studio recording practices are a large part of the answer. Pop recordings are usually consistently loud, if only from the omnipresent drum tracks or the overuse of compression and artificial reverberation in the master-recording process. Classical-music recordings are limited by natural hall or studio reverberation and by the recording locale's low-frequency background-noise level. Most recordings are additionally limited by the noise levels inherent in studio equipment, some of which are higher than any audiophile would tolerate in a home system. From multiple microphones to mixers, artificial reverb systems, and equalizers, the machinery for the inadvertent introduction of noise and/or a reduction of peak levels is widely available and often used.

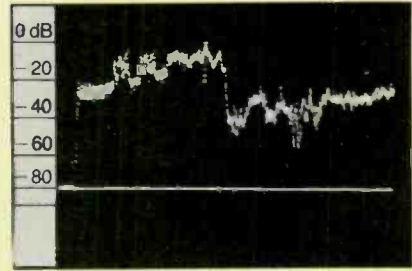
On the other hand, it's easy to jump to

hasty conclusions regarding these scope traces. While none of the rms levels shown approach 0 dB, the short, transient voltage peaks present in all musical signals typically extend 10 to 15 dB above the measured rms level and will not show up in these traces. At least 10 dB must be added to the values obtained by this measurement method to arrive at a reasonable approximation of the recorded dynamic range on a CD. When this is done for Traces A and B, a total value of about 80 dB is obtained. Moreover, the measurement system has a flat frequency response, unlike the human ear, which becomes less sensitive to low- and high-frequency sounds as the volume level is reduced. A recording with a restricted dynamic range in such traces may not sound so restricted in playback because of the frequency distribution of the music.

Nonetheless, at least two preliminary conclusions can be drawn from the dynamic-range traces. First, contrary to the beliefs of some people who are opposed to the CD system, the sixteen-bit digital encoding used for CD's provides a dynamic range wide enough for the full variety of music as it is now being recorded. There is no pressing need to move to very expensive eighteen-bit encoding. Second, recording engineers and producers have a long way go before they run up against the dynamic-range limits of the CD system. And whether listeners would be able to live with a full 98-dB dynamic range is another question altogether.



Trace A. The opening of Richard Strauss's *Also sprach Zarathustra* with the Boston Symphony Orchestra conducted by Seiji Ozawa (Philips 400 072-2).



Trace B. The same music but this time performed by the New York Philharmonic conducted by Zubin Mehta (CBS MK 35888). Note the relatively high level at the start.

quality console stereo, the effect is unbearably boomy with the flat low-frequency response of a CD played on a high-fidelity component system.

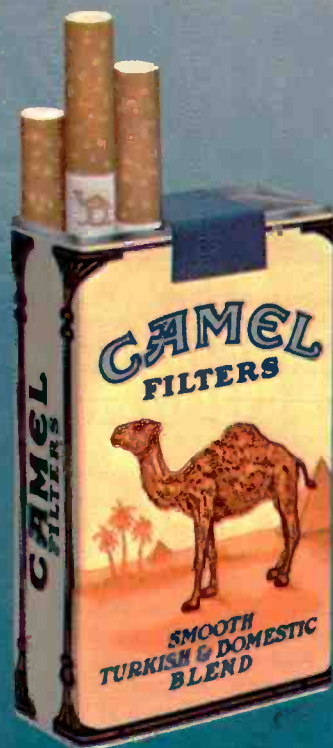
Many of the rock and pop discs I auditioned had an overall dynamic range of 20 dB at most. On the other hand, the "Mamba Percussions" record has the potential for becoming the CD equivalent of the direct-to-disc (analog) "Sheffield Drum Record" (Sheffield Lab 14); both are spectacular discs completely devoted to percussion

rhythms and effects. If you are looking for impressive transients, these are the records for you.

Most of the remainder of the discs listed take advantage of the CD system's dynamic range in ways that typical popular-music recordings do not. The Pink Floyd album, for example, is loaded (some might say overloaded) with wide-dynamic-range sound effects, including the flyby of a jet plane followed closely by a loud explosion (see Figure 2). The Freddie Hubbard

disc is very closely miked but has very low background noise and wide variations in dynamics (Figure 3). Joni Mitchell's "Court and Spark" is very compressed in dynamics but is thankfully free of much of the signal processing often used to "enhance" the sound of a vocalist. And it's nice to hear the bass line in Michael Jackson's *Billy Jean* without masking analog-disc low-frequency noise, though this track sounds wider in dynamic range than it really is (Figure 4). □

CAMEL FILTERS



Experience
the Camel taste in
Camel Filters.



Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

Best of the Month

Stereo Review's Selection of Recordings of Special Merit

Thomas's Debussy:
Excellent Performances,
Superb Digital Sound

THE new CBS recording of Debussy's *La Mer* and *Nocturnes* is one of the best ones to come along in years. There is an extraordinary rapport between conductor Michael Tilson Thomas and the musicians of the Philharmonia Orchestra, especially in the *Nocturnes*, and the recording has the best digitally mastered sound I have heard from this label yet.

Of the three *Nocturnes*, the first, *Nuages (Clouds)*, with its subtle pastel tonal shadings and evanescent pianissimos, benefits enormously from the extended dynamics and clarity of detail afforded by digital technology. And so

does the concluding *Sirènes*, with its special problems of balance and blend between the orchestral textures and the wordless women's voices. Both *Nuages* and *Sirènes* are performed with exquisite sensitivity here, and special credit is due the English-horn and flute soloists in *Nuages* for their finesse in dynamic shading and achieving the illusion of varying distances. Overall, the result can best be described as gorgeously languorous.

Fêtes, seemingly the easiest of the *Nocturnes* to bring off with its great splashes of sound and flamboyant central processional, does present some

Michael Tilson Thomas: extraordinary rapport



problems in performance. Thomas's is a fine one, but I would have welcomed a more accurate match of articulation between the instrumental groupings as they enter; this and getting just the right type of cymbal sonority seem to be the *bêtes noires* any conductor faces in realizing this score.

In *La Mer* Thomas is competing with recordings by just about every major virtuoso conductor of the recent past and the present. While his performance does not efface for me the memory of the best of its predecessors, it has many excellences. The sea as he pictures it in the first two movements reminds me more of the Mediterranean than the North Atlantic; it glitters with bright sunshine. The opening is stately and majestic, with a proper massiveness and power at the close of the section (recalling Hokusai's famous print *The Great Wave*, which is in fact reproduced on the cover of the orchestral score published by Durand). The middle movement is marked by a great delicacy of texture but also by a certain lack of tension. The finale, which darkens to evoke a windswept northwest day, is a total success in Thomas's hands.

On the whole, this is very well-performed Debussy, and, I repeat, the digital recording is superb—a sonic triumph for CBS. —David Hall

DEBUSSY: *La Mer; Nocturnes*. Ambrosian Singers (in *Sirènes*); Philharmonia Orchestra, Michael Tilson Thomas cond. CBS IM 37832, © IMT 37832, no list price.

Sissy Spacek Has A Fine Ol' Time in "Hangin' Up My Heart"

SISSY SPACEK, the actress who portrayed Loretta Lynn so well in the movie *Coal Miner's Daughter*, has just lassoed her first full-fledged solo album, and, any way you look at it, "Hangin' Up My Heart" is cuter than a speckled pup in a little red wagon.

A Texan who originally went to New York to be a folk singer, not an actress, Spacek claims she hated country music when she was growing up. Nevertheless, she sails right into this collection of country-rockers, country classics, Western swing, and even country-punk with joyful buoyancy, her natural Lone Star accent so thick as to brand each track with undeniable authenticity (and to send a careful listener scurrying for the lyric sheet). Better still, "Hangin' Up My Heart" proves that

the success of Spacek's soundtrack album was no fluke. She can sing, and she can write original material that should send most of Nashville's lethargic tunesmiths into a sweaty panic. Hank De Vito's spunky title tune rocks gently in the memory, and Susanna Clark's *This Time I'm Gonna Beat You to the Truck* packs a gut-bucket wallop that closes out with a wild sax break and the rebellious spirit of a joy-rider crossing over the state line. But by far the most haunting track here is Spacek's own *He Don't Know Me*, about the uninvited attentions of a semi-psychotic, David Hinckley-like admirer. There's a chill built into the melody of this one, an overall menacing quality, reinforced by a twin-guitar solo, that sneaks up on you and shoots shivers down the spine.

Make no mistake about it, "Hangin' Up My Heart" hasn't a hick lick to its name, nor an unnecessary one for that matter. Producer Rodney Crowell, with his clean, country-hip assimilation of the best of the L.A., Nashville, and Texas sensibilities, has fashioned a very smart album here, one that works on just about every level. Some of the songs (*Lonely But Only for You*, *If You Could Only See Me Now*) have slow, romantic tempos and high, wispy harmonies that are evocative of Crowell's work with his wife, Rosanne Cash (who does some back-up vocals here). But on others, especially *Have I Told You Lately That I Love You* and Hank Williams's immortal *Honky-Tonkin*, Spacek's loose intonation and winning in-souciance suggest a tongue-in-check, mock-cowgirl quality.

Spacek seems to be having a fine ol' time, and whether she's co-writing a stunning piece of sassy put-down with country legend Loretta Lynn (*Smooth Talkin' Daddy*) or fronting such invincible pickers as Johnny Gimble and Reggie Young (who sound as if they're having a field day themselves), she acts as if she were born to it, her easy alto soaring without a trace of fear or pretense. In short, a more charming album will be hard to find. —Alanna Nash

SISSY SPACEK: *Hangin' Up My Heart*. Sissy Spacek (vocals); Reggie Young, Vince Gill (guitars); Hank De Vito (pedal-steel guitar); Johnny Gimble (violin, mandolin); David Briggs (piano); Emory Gordy (bass); Larrie Londin (drums); vocal and instrumental accompaniment. *Hangin' Up My Heart*; *Have I Told You Lately That I Love You*; *He Don't Know Me*; *Lonely But Only for You*; *This Time I'm Gonna Beat You to the Truck*; *Honky-Tonkin*; *Old Home Town*; *Smooth Talkin' Daddy*; *If You Could Only See Me Now*; *If I Can Just Get Through the Night*. ATLANTIC AMERICA 90100-1 \$8.98, © CS-90100-1 \$8.98.

Sissy Spacek:
no hick licks



Maddy Miller/LGI

Pianist András Schiff's Impressive, Persuasive *Goldberg Variations*

EXCEPT for historical reissues, in which case the performance itself is the point of interest, most of us tend to be put off by record annotations that tell us how great the performance is; we would rather read reviews that are not attached to the product—or write them ourselves. But George Malcolm's enthusiastic remarks on András Schiff's performances of Bach's *Goldberg Variations*, in his annotation for Schiff's new London set, must be regarded in a different light. Malcolm himself made a very impressive recording of this work on the harpsichord more than twenty years ago. He writes here that he always felt this was the one work of Bach's that "positively demanded the two keyboards of the harpsichord, in order to achieve contrapuntal clarity in the numerous hand-crossing passages" but that Schiff's recorded performance "proved [him] wrong!" Of course, the countless listeners who have admired ("venerated" might be a better word) the late Glenn Gould's two recordings of the *Goldberg Variations* may not share Malcolm's astonishment in this respect, but the charming genuineness of these remarks, so free of pretentiousness or condescension, by a senior artist long identified as a specialist in this material can hardly fail to make an impression. That Schiff's presentation of the music itself makes a bigger one will come as no surprise to those who have followed his recordings.

Actually, Malcolm knows Schiff from a good deal more than this new recording. Schiff was in Malcolm's master classes in the mid-Seventies, he played concertos with Malcolm conducting on several occasions, and he recorded Bach concertos with him for Denon. Though Schiff only recently turned thirty, he is a veteran of the recording studios, having made several fine discs for Hungaroton over the last six or eight years, as well as some for Denon, before joining the Decca/London roster. He has built up a phonographic identity as a musician of both style and substance, not by going the blockbuster route but in recordings of Mozart, Bach, and Schubert.

Schiff's new *Goldbergs* happily confirm the impression made by the earlier releases. The recording is, like Malcolm's note, genuine and unpretentious: an expansive, thoughtful, clarifying, yet utterly unselfconscious reading by a performer who is thoroughly inside the music. The tempos tend to be broad ex-



Columbia Artists Management, Inc.

András Schiff:
style and substance

cept in the showy, toccata-like variations, and Schiff is generous with repeats. There is plenty of variety and characterization of the individual variations, and the restatement of the initial aria at the end of the brilliant sequence takes on, without ceremonial gestures or special fuss of any kind, an unfeigned spiritual quality.

Spreading this seventy-three-minute performance over three sides (it will be just right for one maximally filled Compact Disc later on) means there is more Bach to enjoy on side four: the *Four Duets* (BWV 802-805) and the *Chromatic Fantasy and Fugue in D Minor* (BWV 903). András Schiff (piano). LONDON ● LDR 72013 two discs \$25.96, © LDR 5 72013 two cassettes \$25.96.

I wouldn't want to do without the Gould *Goldbergs*, and one must have at least one harpsichord performance (I'd suggest Trevor Pinnock's on Deutsche Grammophon), but Schiff's version too has the sort of insight, integrity, and overall communicativeness that give it a special persuasiveness, and it is superbly recorded. If he never gets around to the Tchaikovsky and Rachmaninoff concertos, so be it; they are covered well enough by others. Let's hope Schiff goes on giving us more performances on this level in the repertoire he has identified as his. —Richard Freed

J. S. BACH: *Goldberg Variations* (BWV 988); *Four Duets* (BWV 802-805); *Chromatic Fantasy and Fugue in D Minor* (BWV 903). András Schiff (piano). LONDON ● LDR 72013 two discs \$25.96, © LDR 5 72013 two cassettes \$25.96.

Joe Jackson's Evocative "Mike's Murder": A Voice For New York City

JOE JACKSON'S "Night and Day," one of 1982's best albums, made a persuasive argument for Jackson's being the heir to George Gershwin and Cole Porter as pop-music laureate of New York City. His score for the forthcoming movie *Mike's Murder* settles the issue. Although Jackson is only an adopted New Yorker (he was born in Portsmouth, England), and although Memphis actually gets mentioned more times than Manhattan, *Mike's Murder* captures the thrill, danger, and loneliness of being young in New York in the Eighties.

The A&M soundtrack album is divided into vocal and instrumental sides, with the instrumentals largely in the same cool, enchanting Latin-jazz vein Jackson explored in "Night and Day." The five songs make up what amounts to a suite of character sketches. Whether owing to the thematic demands of the film or to Jackson's own familiar skepticism, they are drawn with equal

Best of the Month

Recent selections
you might have missed

POPULAR

- **Peabo Bryson and Roberta Flack:** *Born to Love*. CAPITOL ST-12284. "... a flawlessly assembled album of contemporary rhythm-and-blues ..." (December)
- **Guy Clark:** *Better Days*. WARNER BROS. 23880-1. "... the finest album to come out of Nashville this year ..." (November)
- **Local Hero.** WARNER BROS. 23827-1. "A beautiful, powerfully exciting film soundtrack by Mark Knopfler." (September)
- **Susannah McCorkle:** *The People That You Never Get to Love*. INNER CITY IC 1151. "Wonderful songs, wonderful singing." (September)
- **Graham Parker:** *The Real Macaw*. ARISTA AL8-8023. "... intelligent, unselfish, adult love songs ... positively inspirational. ..." (November)
- **Mitch Ryder:** *Never Kick a Sleeping Dog*. RIVA RVL 7503. "... a nearly perfect comeback album." (October)
- **Carly Simon:** *Hello Big Man*. WARNER BROS. 1-23886. "... exuberant, sexy, funny, sometimes poignant. ... Don't miss it." (December)
- **Deniece Williams:** *I'm So Proud*. COLUMBIA FC 38622. "... a showcase for 'the songbird of soul.'" (October)
- **Nell Young:** *Everybody's Rockin'*. GEFEN GHS 4013. "... a brilliant goof ... spontaneous sounding and funny." (December)

CLASSICAL

- **Beethoven:** *String Quartets Nos. 12-16; Grosse Fuge*. RCA ARL4-4509. "The Cleveland Quartet caps its Beethoven series with another winner." (October)
- **Brahms:** *Vocal Ensembles*. DEUTSCHE GRAMMOPHON 2740 280. "Clear, natural singing, marvelous sound." (September)
- **Fauré:** *Songs*. ANGEL DS-37893. "A prize selection ... from Frederica von Stade." (October)
- **Handel:** *Hercules*. ARCHIV 2742 004. "A great work gets a great performance." (December)
- **Mozart:** *Symphonies Nos. 31, 35, 38, 40, and 41. L'OISEAU-LYRE D172D4*. "... some of the finest Mozart playing around." (September)
- **Rachmaninoff:** *Symphony No. 3; "Youth" Symphony*. LONDON LDR 71031. "... sensuous and richly nuanced ..." (December)
- **Ravel:** *Gaspard de la nuit. Prokofiev: Piano Sonata No. 6*. DEUTSCHE GRAMMOPHON 2532 093. "... [Ivo Pogorelich's performance is] simply irresistible in its imaginativeness and sweep." (November)
- **Rossini:** *Il barbiere di Siviglia*. PHILIPS 6769 100. "... the best Barber to come along in some twenty years." (November)

Geoff Butler/LGI



Joe Jackson:
the melancholy
of Manhattan

parts of cynicism, menace, and melancholy. More than anything else, however, they are about uncertainty.

Cosmopolitan, a cocky, surging mid-tempo number in which piano and vibes shadow a pulsing beat in rising and descending minor scales, is a perfect picture of the empty satisfaction that can be the reward for hitting the big time: "See my home, see my car/And the beach always used to seem so far." After this dubious nod to the good life, the album moves downtown to where white middle-class kids live in fashionably destitute rebellion on the Lower East Side. *1-2-3 Go* pinpoints the queasy excitement of the punk underground, *Laundromat Monday* the languid daylight hours that fill the time between sessions of all-night club-hopping. The intellectual torpor implied by both songs hints that the glitzy treatment New York's New Wave gets in the press may not tell the whole story.

Elsewhere the theme of uncertainty takes shape in more romantic ways. Most evocative are the instrumental and vocal versions of *Moonlight*, a song that suggests either a last look over the skyline before setting out for another night on the town or a silent cab ride home down a rain-slicked avenue—windshield wipers swishing in time to a lazy rim shot, organ chords suggesting

the sound of wet asphalt whooshing by under the wheels, the sad, slow, high notes of the piano suspended like the moon over the city. It is a time to wonder: "I think the moonlight is my friend/But sometimes, I'm not sure."

Like the sophisticated "Night and Day," "Mike's Murder" blows warm and cool, lyrical and sardonic. Jackson's playing, whether on piano, organ, vibes, sax, or synthesizer, alternates between restrained sentimentality and nocturnal mystery. In the absence of guitar, these instruments must shoulder the responsibility for melody and harmony. Perhaps it's because Jackson plays them all himself that they achieve so perfect a balance of color and articulation. By wedding his brooding melodies to open, airy jazz and salsa rhythms, Jackson has found a voice for the only New York City that really exists anyway—the one that leaves you wondering.

—Mark Peel

JOE JACKSON: *Mike's Murder*. Original-soundtrack recording. Joe Jackson (vocals, keyboards, percussion, saxophone, vibes); Graham Maby (bass); Larry Tolfree (drums); Sue Hadjopoulos (percussion). *Cosmopolitan*; *1-2-3-Go* (*This Town's a Fairground*); *Laundromat Monday*; *Memphis*; *Moonlight*; *Zemio*; *Breakdown*; *Moonlight Theme*. A&M SP-4931 \$8.98, © CS-4931 \$8.98.

Classical Music

News Briefs

The White House/Ernest Gilbert and Assoc.



VIOLINIST Eugene Fodor, shown here with Secretary of State George Shultz following his performance at the Williamsburg summit meeting, has joined the rosters of two independent labels, Pantheon and Laurel Record.

This month he is recording for the latter an album coupling the violin sonatas of John Corigliano and Nicholas Flagello. The accompanying pianist is Veronica Jochum, daughter of the veteran German conductor Eugen Jochum. □

AHIGHLIGHT of the annual Montreux Festival in Switzerland is the announcement of the year's best recordings. Normally three "equally weighted" prizes are given; this year there were four, picked by an international jury of nine critics. Cited for 1983 were Alfred Brendel's recording of Mozart's Piano Concertos Nos. 15 and 21, with Neville Marriner conducting the Accademia of St. Martin-in-the-Fields for Philips, the complete string quartets of Mendelssohn played by the Melos Quartet on DG, Schubert's Easter cantata, *Lazarus*, conducted by Gabriel Chmura and released in this country by Pro Arte, and two works, *Metaboles* and *Timbres espace mouvement*, by the contemporary French composer Henri Dutilleux, played by the Orchestre National de France under Mstislav Rostropovich and available here as an Erato import. A

special "historical" prize went to the recently released 1950 Furtwängler-conducted Wagner *Ring* cycle recorded at La Scala, also available as an import, and another, for "special achievement in the field of chamber music," was given to the *Beaux Arts Trio*. □

VIOLINIST Gidon Kremer was the first to receive the Accademia Musicale Chigiana Prize in Siena when it was inaugurated in 1982. The pianist Peter Serkin was the second to be so honored when he appeared in Siena recently to play an all-Beethoven recital. Included in the program were the Sonatas Opp. 90 and 101 (the *Hammerklavier*), both of which he subsequently recorded for Pro Arte for release this month. The instrument is an "original" from 1820 that belongs to the St. Paul, Minnesota, Schubert Club. □

CALENDARS for 1984: The Metropolitan and San Francisco Opera Companies have both published 1984 wall calendars picturing, in color, scenes from their current productions. Also shown, in addition to major holidays, are the birthdays of opera's leading singers, conductors, and composers. The Met's "centennial edition" calendar is \$6.95 (or two for \$12.50), plus \$1.85 for handling and shipping, from the Opera Guild, 1865 Broadway, New York, N.Y. 10023. "San Francisco Opera 1984" is available from that company's Opera Shop, War Memorial Opera House, San Francisco, Calif. 94102 for \$8.95 plus \$2.50 handling and shipping. New York and California residents should add their respective sales taxes. □

ASALZBURG FESTIVAL performance of Mozart's *The Magic Flute* will be telecast over the PBS network on January 9 as part of the Great Performances series underwritten in part by Exxon and the Corporation for Public Broadcasting. Featured in the cast are Edita Gruberova as the Queen of the Night, Christian Boesch as Papageno, Ileana Cotrubas as Pamina, Peter Schreier as Tamino, and Martti Talvela as Sarastro. The production is credited

to Jean-Pierre Ponnelle; James Levine conducts. . . . National Public Radio begins this month (January) a complete fourteen-week broadcast season from the 1983 Santa Fe Chamber Music Festival and a series, Music from Washington, relaying recitals and chamber music taped in the capital's major performance venues, including the Kennedy Center, the Library of Congress, the Smithsonian Institution, and the Folger Shakespeare Library. □

ANGEL RECORDS recently reached back into its stereo catalog and "caught up," as one company spokesman put it, with current interest in music on cassette by releasing in that format a number of its most impressive operatic and choral titles. Included in this golden-age series of tapes is the Gobbi/Schwarzkopf/Karajan recording of Verdi's *Falstaff*, the Callas/Serafin *Norma*, Giulini's recording of the Verdi *Requiem*, and Handel's *Messiah* conducted by Klemperer. All have been remastered, and in a few cases they have been spread over fewer "sides" than on discs; for example, the Wächter/Schwarzkopf/Giulini *Don Giovanni*, originally released on four LP's, is available now on three cassettes. □

Christian Boesch as Papageno and Ileana Cotrubas as Pamina



Courtesy PBS

Disc and Tape Reviews

By RICHARD FREED • DAVID HALL • GEORGE JELLINEK
STODDARD LINCOLN • ERIC SALZMAN

J. S. BACH: *Goldberg Variations; Four Duets; Chromatic Fantasy and Fugue in D Minor* (see Best of the Month, page 65)

J. S. BACH: *Violin Concerto in E Major (BWV 1042); Violin Concerto in A Minor (BWV 1043); Concerto in D Minor for Two Violins (BWV 1041)*. Anne-Sophie Mutter, Salvatore Accardo (violins); English Chamber Orchestra, Salvatore Accardo cond. ANGEL • DS-37989 \$12.98, © 4XS-37989 \$9.98.

Performance: **Inappropriate**
Recording: **Very good**

These performances are exemplary of the best modern string playing, and the digital sound is wonderfully warm and spacious. Moreover, both of the soloists and the members of the orchestra produce rich, vibrant tones that forcefully project long, seamless lines of dynamically molded melodies. What a shame that it all has nothing to do with Bach's style and quite destroys the music. *S.L.*

RECORDING OF SPECIAL MERIT

BERNSTEIN: *Seven Anniversaries (1942-1943); Four Anniversaries (1948); Five Anniversaries (1949-1951); Two New Anniversaries (1965); Touches; Song Without Words for Felicia; Moby Diptych*. **COPLAND** (trans. Bernstein): *El Salón México*. James Tocco (piano). PRO ARTE • PAD 109 \$9.98, © PCD 109 \$9.98.

Performance: **Committed**
Recording: **Excellent**

It is convenient that Leonard Bernstein's "Complete Works for Solo Piano" (as this collection is headed) fit snugly on a single LP disc, and it is fortunate that since we have no similar recording by Bernstein himself (who did, of course, record the earlier *Anniversaries* on 78's some thirty-five years ago), this music has found in James Tocco a pianist so sympathetically responsive to the Bernstein idiom and so well equipped to project it on the most persuasive level. According to John Gruen's annotation, the

project was suggested by Bernstein himself, when he had just completed *Touches* in 1981 and Tocco pointed out that his name is an Italian word for "touch." Gruen also points out that the various *Anniversary* pieces served as source material for some of Bernstein's larger works, such as the *Jeremiah* Symphony and the *Serenade After Plato*.

Bernstein's own descriptions of *Touches* (composed for the Van Cliburn Competition) and the *Moby Diptych* (written for Anton Kuerti) are included, and he is quoted by Tocco as having stated that he arranged the Copland orchestral fantasy as a piano piece because "he grew tired of hearing American pianists end their programs with Hungarian Rhapsodies." Whether it's in the transcription or the execution, it struck me that the percussive elements come across a good deal better than the warmth of heart, but it's an effective piece for all that, and Tocco plays it quite brilliantly. It is the *Anniversary* pieces in the three early sets, though, that leave the most lasting impressions—vigorous, capricious, bluesy, a unique meld of Gershwin and Debussy in an idiom wholly Bernstein's own—and Tocco presents them with total commitment, abetted by superb sound and exemplary pressing. *R.F.*

A Rubinstein Memorial



RCA Records

It was more than twenty years ago that RCA released an album of live recordings from Arthur Rubinstein's fall 1961 Carnegie Hall recitals. Now we have a fine new imported German pressing of those recordings, and the much brighter sound enhances the vividness of the great pianist's elegant performances.

The program here is a lovely one consisting of music with which Rubinstein had special ties. He probably did more than any other pianist to popularize Villa-Lobos's two *Baby's Family* suites, and Szymanowski's Op. 50 mazurkas were dedicated to him. His understanding of all the individual styles is as apparent as his enthusiasm for the music.

Moreover, these are very fine live recordings. The applause and cheering might have been edited out, but the recitals were major artistic events, and as preserved here they still are. The new labeling fails to specify which twelve of Prokofiev's twenty *Visions fugitives* are included or to note that it is the first of the Villa-Lobos suites that is offered—and in an abridged form. But musically there is no cause for complaint here.

—Richard Freed

ARTHUR RUBINSTEIN: *In Memoriam*. Debussy: *La Cathédrale engloutie; Poissons d'or; Hommage à Rameau; Ondine*. Szymanowski: *Four Mazurkas, Op. 50*. Prokofiev: *Twelve Visions fugitives, Op. 22*. Villa-Lobos: *A prole do bebê, Suite No. 1*. Arthur Rubinstein (piano). RCA RL 42024 \$13.98, © RK 42024 \$13.98 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

BOITO: *Nerone*. János B. Nagy (tenor), Nerone; József Dene (baritone); Simon Magó; Lajos Miller (baritone), Fanuél; Ilona Tokody (soprano), Asteria; Klára Takács (mezzo-soprano), Rubria; József Gregor (bass), Tigellino; others. Hungarian Radio and Television Chorus; Hungarian State Opera Orchestra, Eve Queler cond. HUNGAROTON • SLPD 12487-89 three discs \$38.94.

Performance: **Strong and involved**
Recording: **Very good**

Arrigo Boito completed the libretto of his second opera, *Nerone*, in 1870, shortly after the launching of *Mefistofele*. His work on the music of *Nerone*, however, was constantly delayed by various literary tasks, notably writing the librettos to Ponchielli's *La Gioconda*, to Verdi's revised *Simon Boccanegra*, and, later, to *Otello* and *Falstaff*. We can also imagine that exposure to Verdi's musical genius at close range could hardly have been the ideal stimulus for the modestly gifted Boito. The years passed, *Nerone* progressed snail-fashion, and not

Explanation of symbols:

- ① = digital-master analog LP
- Ⓢ = stereo cassette
- Ⓛ = digital Compact Disc
- Ⓢ = eight-track stereo cartridge
- Ⓛ = direct-to-disc recording
- Ⓜ = monophonic recording

The first listing is the one reviewed; other formats, if available, follow it.

even Verdi's death in 1901 freed Boito's mind of self-doubts concerning the worth of his second opera. When Boito himself died in 1918, the long-frustrated house of Ricordi finally prevailed on Arturo Toscanini and Vincenzo Tommasini to complete the orchestration. And so, nearly sixty years after its inception, on May 1, 1924, *Nerone* was premiered at La Scala and welcomed with some enthusiasm. Its subsequent performance history, however, has been rather insignificant. Eve Queler's enterprising Opera Orchestra of New York gave the opera's first American performance, in concert form, in April 1982.

Despite certain limitations, *Nerone* is an interesting and provocative opera. In his perceptive annotation for this set, Charles A. Rizzuto draws attention to Boito's abiding fascination for the conflict between good and evil. In *Nerone*, he wrote blaring "pagan" music for Nero and his disreputable cohorts to contrast with the serene, at times transfigured, quality of the music surrounding the figures of Fanuël and the Christian martyrs. This contrast is the opera's central element; the message is the ultimate triumph of Christianity over the forces represented by Nero, who is imaginatively portrayed as an irrational and bloody tyrant with an obsessive theatrical bent.

Considering the limited time Queler had at her disposal to involve her cast in this out-of-the-way opera, the results are quite remarkable. The Hungarian ensemble certainly rose to the occasion. Outstanding among the singers is mezzo Klára Takács, whose plush tones compensate for rather cloudy diction in the sympathetic role of Rubria, the Vestal priestess (Nero had canceled her virginal credentials). János B. Nagy brings a clarion tone and the sense of demented fury the title character calls for, while baritone Lajos Miller, with his flowing *bel canto* delivery, endows Fanuël with becoming nobility. Although rather miscast in the role of the hysterical Asteria, Ilona Tokody makes a strong impression, as does József Gregor as Tigellino, Nero's henchman, the part young Ezio Pinza sang in the opera's 1924 original cast. I was less happy with József Dene, who is malevolent enough but tonally unsteady as Simon Mago.

With the chorus and orchestra giving its apparent best, Queler holds this now splashy, now serenely understated, and occasionally quite impressive music remarkably well in hand. In sonic terms, the recording is effective and rich sounding, though the Finale of Act I sounds a bit compressed. Altogether this release is quite a coup for Eve Queler and Hungaroton. *G.J.*

BORODIN: *Scherzo in A-flat Major* (see MUSSORGSKY)

BRUCKNER: *Symphony No. 8, in C Minor*. London Philharmonic Orchestra, Klaus Tennstedt cond. ANGEL ● DSB-3936 two discs \$25.96, © 4X2S-3936 \$19.98.

Performance: **Warm**
Recording: **Good**

For those who may find Herbert von Karajan's 1976 recording of Bruckner's Eighth Symphony a bit too solemnly austere and Bernard Haitink's recent digitally mastered Amsterdam recording rather studied, this leaner yet warmly phrased version by Klaus

Tennstedt may represent an attractive alternative. It came rather as a surprise to me after Tennstedt's expansive recording of Bruckner's *Romantic Symphony* (No. 4), and, in truth, he makes the Eighth more romantic in outlook than many conductors do. Within the framework of his concept, Tennstedt and the London Philharmonic deliver a finely honed performance—a little too finely honed, I feel, in the outer sections of the scherzo, which could have stood more abrupt accentuation at certain points. I also found the great climax of the adagio unexpectedly rushed. The sonics are warm and clean but don't offer quite the cathedral spaciousness, combined with presence, of the Haitink discs. *D.H.*

CHAUSSON: *Poème de l'amour et de la mer, Op. 19; Chanson perpétuelle, Op. 37; Le Colibri; Sérénade italienne; La Dernière feuille; Les Papillons; Le Charme*. Jessye Norman (soprano); Michel Dalberto (piano); Orchestre Philharmonique de Monte Carlo, Armin Jordan cond. ERATO/RCA ● NUM 75059 \$10.98, © MCE 75059 \$10.98.

Performance: **Not Ideal**
Recording: **Very good**

This well-planned disc yields a generous representation of the vocal writings of Ernest Chausson: five songs from his Op. 2 song collection (1879-1882), the elaborate two-part song cycle *Poème de l'amour et de*

All This For Under \$300?

The NAD 7125 RECEIVER gives you:

- digitally synthesized tuning—for accurate reception of your favorite stations
- state-of-the-art phono preamp—provides ultra-quiet playback for your records with any cartridge
- below 2 ohm capability—assures that you can use any speaker with your system
- 3 dB of dynamic headroom—plenty of power for even the newest digital discs
- bass EQ—helps small bookshelf speakers create satisfying deep-bass response

Before you spend more than \$300.00 on any receiver or amplifier/tuner combination, be sure you hear the NAD 7125. We know of no other receiver in or close to its price range that audibly outperforms this remarkable component. Because of its low price, the NAD 7125 can serve as the centerpiece of a budget system that offers true state-of-the-art performance.

For more information and a list of our dealers, send us this coupon.

Name _____
Address _____
City _____ State _____ Zip _____

We **NAD**
make high-end
audio affordable

NAD (USA), INC., 675 Canton Street, Norwood, MA 02062

la mer (1890), and the unusual *Chanson perpétuelle* for voice and string quartet with piano, one of the composer's last works before his untimely accidental death in 1899.

Both the *Poème* and the *Chanson* speak of lost love in Chausson's characteristically brooding, endlessly modulating idiom. Although Jessye Norman's plush tones give much pleasure, I don't find her voice to be the ideal instrument for this music. It works best in the *Chanson perpétuelle*, where the mood is nicely sustained and the voice emerges with the desired clarity over the subtle instrumental accompaniment. Moreover, the music moves at a fresher, less languid pace than it does in Frederica von Stade's otherwise beautifully sung version on Columbia. Although Norman shades her voice expressively in the *Poème*, she does not communicate the text with the naturalness evident in past renditions by Maggie Teyte and Victoria de los Angeles, nor does she seem comfortable in the high climaxes in this admittedly difficult Gallic answer to Mahlerian vocal-orchestral writing. The sound, of course, is vastly better here.

The five songs from Opus 2 are brief, charming, and reasonably varied. Here too, though, I miss the lighter touch and firmer intonation of an Elly Ameling. *G.J.*

COPLAND: *El salón México* (see BERNSTEIN)

DEBUSSY: *La Mer; Nocturnes* (see Best of the Month, page 63)

DVOŘÁK: *Violin Concerto in A Minor, Op. 53; Romance in F Minor, Op. 11; Mazurek in E Minor, Op. 49.* Sergiu Luca (violin); St. Louis Symphony Orchestra, Leonard Slatkin cond. NONESUCH ● 79052-1 \$11.98, © 79052-4 \$11.98; © 79052, no list price.

Performance: **Solid**
Recording: **Very good**

More than a half-dozen recordings of the Dvořák Violin Concerto are listed in Schwann, with both the hot-blooded gypsy and the solid Central European Brahmsian approaches being represented. Romanian-born Sergiu Luca opts for the latter, and if you don't object to an occasional wiry quality in his tone, there is much pleasure to be had from the rhythmic vitality and lyrical intensity he brings to the music. Not the least of the assets here is the handsome backing provided by Leonard Slatkin with the St. Louis Symphony and the handsome recording job by Marc Aubort and Joanna Nickrenz. As for the filler pieces, the early *Romance* is no piece of negligible fluff but a solid, Brahmsian essay contrasting a slow waltz pulse with an emphatic middle section. The *Mazurek* has a decided gypsy flavor and is cut from the same cloth as the first set of Slavonic Dances. *D.H.*

HANDEL: *The Choice of Hercules.* Alaine Zaepffel (countertenor), Hercules; Arleen Augér (soprano), Virtue; Venceslava Hrubá-Freiberger (soprano), Pleasure; Eberhard Büchner (tenor), Attendant of Pleas-

ure; University of Leipzig Choir; New Bach Collegium Musicum, Max Pommer cond. PRO ARTE ● PAD 150 \$9.98, © PCD 150 \$9.98.

Performance: **Indifferent**
Recording: **Lush**

Salvaged from incidental music for *Alceste*, Handel's score for the single-act *The Choice of Hercules* is a real charmer. Sophisticated and suave, it bubbles along in Arcadian bliss. Would that the New Bach Collegium Musicum and the University of Leipzig Choir did the same. Their sound is lovely but inarticulate and rhythmically flabby. The soloists turn in some fine singing, but bad diction and a complete lack of word coloration remove them from the meaning of the music. It all becomes a sort of Baroque Muzak, so that one could not care less whether Hercules chooses Virtue, Pleasure, or Boredom. *S.L.*

RECORDING OF SPECIAL MERIT

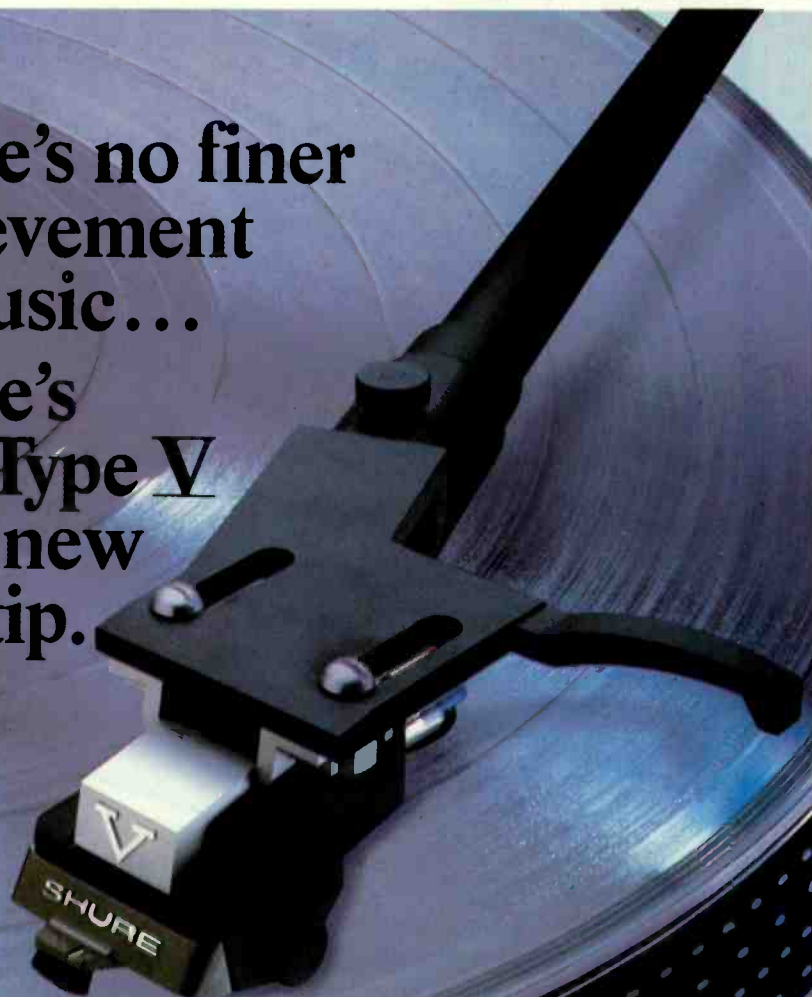
HAYDN: *The Creation.* Edith Mathis (soprano); Francisco Araiza (tenor); José van Dam (bass); Wiener Singverein; Vienna Philharmonic Orchestra, Herbert von Karajan cond. DEUTSCHE GRAMMOPHON ● 2741 017 two discs \$25.96, © 3382 017 \$25.96.

Performance: **Sumptuous**
Recording: **Superb**

The massive forces of the Vienna Philharmonic and the Vienna Singverein are

There's no finer achievement in music...

Shure's V15 Type V with new MR tip.



There's something to be said for a truly great album: **Platinum**. The ultimate in sound reproduction can also be expressed simply: Shure's V15 Type V-MR—with a Micro-Ridge Tip—for the lowest possible distortion in sound reproduction.

No other component can bring so much sound out of your stereo system for so little cost. A combination of the revolutionary Micro-Ridge Tip and Shure's extraordinary Beryllium MICROWALL/Be™ Stylus Shank has redefined the upper limits of high-frequency trackability. The V15 Type V-MR also features a Dynamic Stabilizer, MASAR™-polished tip, leveling alignment stylus, and a Duo-Point Alignment Gauge.

Hear the finest in sound reproduction with the V15 Type V-MR at your authorized Shure dealer today.

SHURE®
You'll hear more from us.

CIRCLE NO. 45 ON READER SERVICE CARD

enough to make a purist shudder, but Herbert von Karajan keeps them in check, exploiting their sheer volume when needed and reducing them to a gentle murmur to support the soloists during the lyrical moments of Haydn's *Creation*. In portraying Gabriel, Edith Mathis sounds labored and even at times forced, but when she addresses herself to Eva, her purity and innocence is winning. Francisco Araiza's Uriel is stunning, full of vocal and musical delights. Although José van Dam's rich bass brings appropriate virility to the role of Raphael, a lighter baritone would suit Adam's Before-the-Fall naïveté rather better. The real victory, however, belongs to Karajan and his sense of grandeur, which serves Haydn's masterpiece very well. *S.L.*

RECORDING OF SPECIAL MERIT

HAYDN: *String Quartets in B-flat Major and D Major, Op. 71, Nos. 1 and 2.* Salomon Quartet. HYPERION A 66065 \$13.98 (from Harmonia Mundi USA, 2351 Westwood Boulevard, Los Angeles, Calif. 90064).

Performance: **Magnificent**
Recording: **Excellent**

The only British quartet using authentic instruments and specializing in music of the eighteenth century, the Salomon Quartet plays magnificently and produces a handsome sound appropriate to its repertoire. In these first two of the six quartets Haydn wrote specifically for public concerts man-

aged by the impresario and violinist Johann Peter Salomon, the ensemble displays the music's technical brilliance, high-spirited style, and warm lyricism. The pure sound of the old-style strings brings a clarity to its involved textures and adds a dimension impossible to achieve on modern instruments. Not only does the quartet play with technical accuracy, but it scrupulously observes all of the composer's articulations and dynamic markings, often overlooked by quartets today. These performances give us the real Haydn. *S.L.*

LIADOV: *A Musical Snuff Box, Op. 32* (see MUSSORGSKY)

RECORDING OF SPECIAL MERIT

LISZT: *Après une lecture de Dante; Transcriptions of Six Songs from Chopin's Op. 74; Funérailles.* Claudio Arrau (piano). PHILIPS 6514 273 \$12.98, 7337 273 \$12.98.

Performance: **Magisterial**
Recording: **Lifelike**

With both Claudio Arrau and Alfred Brendel on its roster, Philips is covering Liszt's piano music a good deal more comprehensively than simply from A to B as well as illustrating the variety of approaches this extraordinary material sustains. This latest offering from Arrau is itself extraordinary.

The disc is laid out so that the Chopin songs serve as centerpiece, split across the two sides, and it is probably a good idea to

have these charming intermezzos separating the two darker and more extended pieces. Arrau is, however, very much aware of the little dramas contained in the song settings, and, while he projects their spontaneity, he also shows us that there is nothing really casual about them. Similarly, his slowish tempos for the two original pieces haven't as much to do with simple "expansiveness" as with the dramatic weight with which he invests the music—a weight that demands relatively deliberate pacing and at the same time ensures that momentum will be sustained at such a pace. Arrau perhaps reaches an extraordinary level of exaltation in *Funérailles*, and he establishes a scale of majesty for the *Dante* Sonata that few of us may have suspected. In all, a magisterial exposition of great music, which Philips has preserved in especially lifelike sonics. Highest recommendation. *R.F.*

RECORDING OF SPECIAL MERIT

MONTEVERDI: *Il ballo delle ingrate; La sestina.* Agnès Mellon (soprano), Amore; Guillemette Laurens (mezzo-soprano), Veneré; Gregory Reinhart (bass), Pluto; Les Arts Florissants, William Christie cond. HARMONIA MUNDI USA HM 1108 \$11.98.

Performance: **Eye-opening**
Recording: **Great**

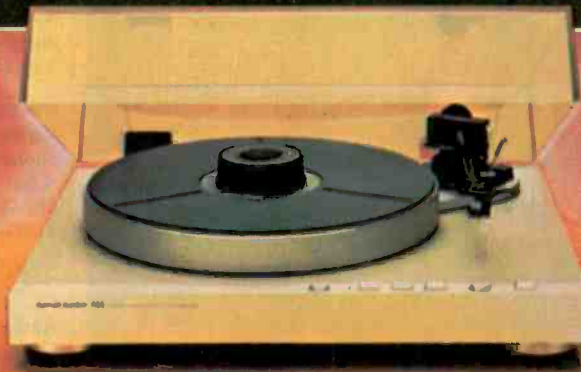
Until I heard this recording, my main reaction to performances of Monteverdi's *Il ballo delle ingrate* was extreme *tedio del reci-*

THE "T" SERIES TURNTABLES STATE-OF-THE-MIND TECHNOLOGY

Thirty years ago Harman Kardon introduced the world's first high fidelity receiver. It was built on the philosophy that quality audio must evolve from quality thinking. Today, Harman Kardon products are so technologically advanced that "state-of-the-art" falls short of describing them. They have become "state-of-the-mind," the highest level at which the mind can create.

The "T" Series turntables are true examples of "state-of-the-mind" technology. All three incorporate belt driven, massive platters. The belt drive acts as a vibration damper which filters out the unwanted vibrations from the motor.

Harman Kardon has discovered that the more massive the platter, the more constant the speed. For example, the top-



of-the-line T-60's platter weighs 3.3 pounds and is, therefore, less affected by outside forces. Each "T" Series turntable is fitted with a straight, low mass tonearm and a vibration absorbant carbon fiber headshell. They have an effective mass of only 8 grams to better track warped records and keep resonant frequencies in the ideal 10Hz range.

One of the many performance features Harman Kardon offers is a unique capacitance trim to achieve optimum cartridge performance.

So, while other manufacturers continue to pile on unnecessary features and gimmicks, Harman Kardon continues to fine tune the basics and develop fundamentally advanced audio equipment.

The "T" Series Turntables: T-20, T-40, T-60

harman/kardon

Our state-of-the-mind is tomorrow's state-of-the-art.

tativo. The singers of Les Arts Florissants, however, immediately displace any shred of boredom by dramatic tension and excitement. Agnès Mellon's plea to the ungrateful ladies who withhold their favors is eloquent, Gregory Reinhart's Pluto is chilling, and Jill Feldman's final lament brings this little work to a moving conclusion. Les Arts Florissants, under William Christie, shows that *Il ballo* is a masterpiece.

Even more revealing is the ensemble's performance of *La sestina*, in which the piercing voices of the five singers lay bare the raw passions of this cycle of madrigals. The emotion is so powerful that criticism is pointless. This is simply an excellent record. S.L.

MOZART: Violin Concerto No. 1, in B-flat Major (K. 207); Violin Concerto No. 2, in D Major (K. 211). Pinchas Zukerman (violin); Saint Paul Chamber Orchestra, Pinchas Zukerman cond. CBS ◉ IM 37833, © IMT 37833, no list price.

Performance: **Vivacious**
Recording: **Crisp**

Generally speaking, these are elegant performances of Mozart's first two violin concertos. Pinchas Zukerman's solo playing sparkles, and the Saint Paul Chamber Orchestra produces a clear, articulate sound appropriate for Mozart. But, while the outer movements are perfection itself, the slow movements seem to lack repose, and figura-

tions that should offer quiet support are frequently rather too busy, marring the essential poise required by this music. Nonetheless, the readings overall are strong ones that do the performers credit. S.L.

MUSSORGSKY: Pictures at an Exhibition. TANEYEV: Prelude and Fugue in G-sharp Minor, Op. 29. LIADOV: A Musical Snuff Box, Op. 32. BORODIN: Scherzo in A-flat Major. TCHAIKOVSKY: Dumka, Op. 59. Vladimir Ashkenazy (piano). LONDON ◉ LDR 71124 \$12.98, © LDR5 71124 \$12.98.

Performance: **Good to superb**
Recording: **Very good**

Vladimir Ashkenazy's second recording of Mussorgsky's *Pictures at an Exhibition* highlights its elements of dramatic contrast, with a strong emphasis on dissonance where it occurs, as in "The Hut on Fowls' Legs." The tone for the whole performance is set in the very opening "Promenade," which is bright, decisive, and a bit fierce. All thirty-two minutes of *Pictures* are accommodated here on a single side, after which comes for me the most interesting and exciting part of the disc: the shorter pieces by Taneyev, Liadov, Borodin, and Tchaikovsky.

The Taneyev is far removed from the scholarly expectations raised by its title; it is a Chopinesque prelude in the grandest style followed by a fugal essay remarkable in its imagination and dramatic ferocity—a real tour de force. The delectable little piece by Liadov comes as a welcome contrast and is played with the utmost elegance. The Borodin Scherzo is a kind of Polovstian dance tamed down for the drawing room. The Tchaikovsky *Dumka*, on the other hand, is probably the composer's most substantial solo piano work, though it appears to have been available previously in the U.S. only on early LP's by Horowitz and Ray Lev. Ashkenazy plays it to the hilt, with an unerring feel for the contrasting mournful and wild episodes. The piano sound throughout is both brilliant and rich, though perhaps just a shade too reverberant in the Kingsway Hall acoustic. D.H.

PROKOFIEV: Romeo and Juliet, Ballet Suites, Opp. 64a and 64b. National Symphony Orchestra, Mstislav Rostropovich cond. DEUTSCHE GRAMMOPHON ◉ 2532 087 \$12.98, © 3302 087 \$12.98; © 410 519-2, no list price.

Performance: **Intense**
Recording: **Very good**

Rather than performing the *Romeo and Juliet* ballet excerpts in the order of the drama, as some conductors have done in recent years, Mstislav Rostropovich here opts for the two seven-movement concert suites prepared by the composer. The first ends with the terrifying "Death of Tybalt" music, and the more familiar second begins with the "Knights' Dance" ("Montagues and Capulets") and concludes with "Romeo at Juliet's Grave."

As pointed out in the sleeve notes, the reading is based in large part on the conductor's memories of the composer's piano performances at home when the young Rostropovich was a protégé of Prokofiev. Add to this Rostropovich's own special brand of intensity and vehemence, and you get a ren-

The New Polk Monitor 10B

How does Polk make a \$325 speaker that sounds like a \$1000?



Exclusive high technology

performance features like trilaminate polymer drivers, isophase crossover systems and Cidac 100% computer quality control make a dramatic difference you can hear. But the real secret is our total commitment to the quality approach in each and every aspect of design, construction and performance.

The award winning Polk 10 (\$325 ea.) has consistently amazed listeners like yourself with sound quality as good or better than other companies' speakers which sell for \$1000 each and more. The newly improved 10B now incorporates the identical polyamide tweeter and trilaminate polymer bass midrange drivers used in the top of the line Polk SDAs. And if our \$325 speaker sounds this good imagine what our \$850 SDA-1A sounds like! You must hear for yourself!

There is a Polk perfect for you (7 home speakers priced from \$110 to \$850 ea.). Write to us or use the reader service card number for information on all the Polk loudspeakers and for the name of your nearest authorized Polk dealer.

Polk Audio, Inc. 1915 Annapolis Rd., Baltimore, MD 21230.
In Canada, Evolution Audio.

State-of-the-art technology,
performance and value

polkaudio
The Speaker Specialists

WHICH TO BUY?



Find out in Stereo Review.

Subscribing to *Stereo Review* makes sense. Whether you're shopping for your first stereo system, upgrading your present one, looking for maintenance tips or trying to sort through the hundreds of new recordings released every month, *Stereo Review* has answers you can rely on.

Our world-famous Equipment Test Reports help you select new audio equipment. Explanations of features, laboratory test results and comments from our expert technicians make it easy for you to select components for a great audio system.

If you already have a terrific sound system, *Stereo Review* can help you care for it and upgrade it. With hints on getting four-channel sound from your stereo discs... how to care for your tape deck's heads... how to handle records to preserve them... and much more.

Stereo Review also helps you select the music to play over your sound system. We cover every category of recording on disc or tape, to help you steer away from uninspired performances or mediocre recordings.

Stereo Review. When you subscribe you'll join the group of people who enjoy music on their own terms—and truly know what to buy.

**Use the coupon to subscribe
—and save 50%!**

Half Price Subscription Certificate

Stereo Review P.O. Box 2771
Boulder, Colorado 80322

YES! Please enter my subscription to *Stereo Review* at 50% off (based on the full one-year subscription price of \$9.98).

- One year (12 issues) for \$4.99
- Two years for \$9.98
- Three years for \$14.97

CHECK ONE: Payment enclosed. Bill me later.

Mr./Mrs./Ms. _____ (please print full name) 8H583

Address _____ Apt. _____

City _____

State _____ Zip _____

Foreign postage: Add \$1 a year for Canada. Add \$5 a year (cash payment in U.S. currency only) for other countries outside U.S. and possessions. Please allow 30 to 60 days for delivery of first issue.

dition somewhat different from the usual virtuoso orchestral treatment that will appeal to some listeners and not to others.

Despite a certain lack of rhythmic bite in the famous sequence of separated chords at the end, the "Death of Tybalt" is one of the high points here, as is the deliberately ponderous and menacing treatment of the "Knights' Dance." Of course, in such episodes as "Romeo and Juliet Before Parting" and in the final scene Rostropovich and the National Symphony squeeze out every drop of emotional expression inherent in the music, and then some. The motivic interweaving in these scenes also comes off remarkably well. Except for a somewhat slow treatment of the "Masks" episode in Suite

No. 1, most of the shorter pieces have the proper lightness and mercurial quality where called for. The recording is big and handsome. *D.H.*

RECORDING OF SPECIAL MERIT

RAMEAU: *Dardanus, Suite.* English Baroque Soloists, John Eliot Gardiner cond. ERATO/RCA ● NUM 75040 \$10.98, © MCE 75040 \$10.98.

Performance: **Sparkling**
Recording: **Excellent**

Although Rameau was primarily a vocal composer, most of us are more familiar with his instrumental music than with his operas.

This album offers about an hour's worth of instrumental music from his opera *Dardanus*. It ranges from the overture and descriptive "symphonies" to ballet music—the last of such high quality that it easily classes Rameau as one of the finest ballet composers of all time. He had a unique orchestral palette, and his tone colorings, especially using the wind instruments, can be appreciated properly only in performances by authentic instruments. John Eliot Gardiner and the English Baroque Soloists have captured that unique sound in a sparkling performance and a topnotch recording that should not be missed. *S.L.*

RECORDINGS OF SPECIAL MERIT

SCHUBERT: *Lieder. An die Musik; Schwestergruss; Sei mir gegrüsst; Die Blumensprache; An den Mond; Abendbilder; Frühlingssehnsucht; Erster Verlust; Nachthymne; Die Sterne; Der Knabe; Wiegenlied (D. 498); Bertas Lied in der Nacht.* Elly Ameling (soprano); Dalton Baldwin (piano). PHILIPS ● 6514 298 \$12.98, © 7337 298 \$12.98.

SCHUBERT: *Lieder. Liebesbotschaft; Wehmut; Die Rose; Am Grabe Anselmos; Sehnsucht; Das Zügelglöcklein; Wandrers Nachtlid I and II; Heidenröslein; Wiegenlied (D. 867); Am See; Abendstern; Bei Dir!; Der Jüngling an der Quelle; Gondelfahrer; Auflösung.* Elly Ameling (soprano); Dalton Baldwin (piano). ETCETERA ● ETC 1009 \$10.98, © XTC 1009 \$10.98.

Performances: **Both excellent**
Recordings: **Richer on Philips**

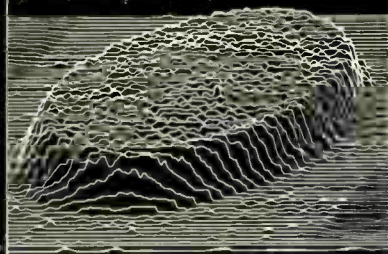
These two releases offer renewed proof of Elly Ameling's eminence among today's song recitalists. There are no duplications in the two programs, nor are any songs repeated from her previous Philips recital discs devoted to Schubert. As usual, moreover, Ameling has planned her programs with the same care and sensitivity she lavishes on her interpretations.

The songs on the Philips disc are almost invariably meditative and frequently related in mood or poetic substance. Seven of them revolve around nocturnal themes, and three tell of parting or express yearning from afar. There are at least four familiar songs here; the rest are seldom encountered but worth discovering. In *An den Mond*, a Goethe setting, Schubert's music beautifully reflects the poet's ambivalence as his thoughts penetrate the serene night "roaming through the labyrinth of the heart." *Schwestergruss* belongs to the eerie world of *Der Erbkönig*; it is masterfully set, despite Schubert scholar Richard Capell's dismissal of the text as "graveyard poetry." Not all of the unfamiliar songs are top-level Schubert: *Nachthymne* is quite unmemorable, and *Der Knabe*, a delicate piece in the composer's mercurial *Musensohn* manner, seems relatively insignificant.

Of the sixteen songs on the Etcetera disc, only three (*Liebesbotschaft*, *Heidenröslein*, and *Der Jüngling an der Quelle*) are heard very often, though the settings of Goethe's two *Wandrers Nachtlid* poems certainly belong among Schubert's greatest inspirations. Several songs in this collection share the nocturnal and meditative mood of the Philips sequence. No less than four are

Digital ready. And waiting.

Ultra-accurate Laser
Topographic Response Analysis.



Whether you're ready for a digital audio-disc player or not, these Celestion speakers are waiting to make the most of the system you have.

There's a reason for it. These loudspeakers were digital before digital players were. Critical dimensions, materials, driver characteristics—all were digitally plotted in three dimensions by laser technology. The result is a unique combination of accuracy, dynamic range, and power-handling capability that is extraordinary

in compact speakers at a modest price.

There's a reason for all this, too. At Celestion, we make speakers, everything that goes into them, and have the most experience in the business.

Listen for yourself at your Celestion dealer.

Even if you have to wait for a digital player, you'll be ready when the time comes. And you won't have to wait for digital pleasure.



Ditton 100, 110, and 250
loudspeakers from Celestion.

celestion  speakers

Celestion...ahead by design.

Celestion Industries, Inc., Kumiholm Drive, Box 521, Holliston, MA 01746
In Canada, Rocelco, Toronto

©1983 Celestion Industries, Inc.

CIRCLE NO. 24 ON READER SERVICE CARD

based on the poems of Johann Seidl (the poet of *Die Taubenpost*, Schubert's last song). Best among them is *Das Züngen-glöcklein*, a little gem. *Wiegenlied* is pretty but a bit overlong, and *Bei dir* is more apt to impress the listener with its buoyant enthusiasm than by its melodic allure.

Virtually all these songs are tailored to the delicacy, charm, and mastery of intimate communication that are Elly Ameling's trademarks. I find the tempo she sets for *Liebesbotschaft* not quite lilting enough, and *Auflösung* calls for a weightier sound for an optimum effect. But these are minor cavils in two recitals that are nearly always engrossing. As usual, Dalton Baldwin provides model support. Both discs are well engineered, with exemplary clarity and surfaces, but Philips offers the more resonant sound. The Philips annotations are better too, for Etcetera offers minimal notes and texts in German and French only. *G.J.*

SCHUMANN: *Violin Concerto in D Minor* (see SIBELIUS)

SIBELIUS: *Violin Concerto in D Minor, Op. 47.* SCHUMANN: *Violin Concerto in D Minor.* Gidon Kremer (violin); Philharmonia Orchestra, Riccardo Muti cond. ANGEL ● DS-37957 \$12.98, © 4XS-37957 \$9.98.

Performance: **Sibelius better**
Recording: **Good**

Gidon Kremer's second go-around with the Sibelius Violin Concerto is decidedly more fortunate in sound quality than his cavernous and ill-balanced 1979 Vanguard recording with Gennady Rozhdestvensky conducting. Riccardo Muti and the Philharmonia Orchestra give Kremer strong backing throughout, and for a violinist of his caliber technical difficulties just do not exist. His interpretation is virile and lyrical in the first two movements and exceptionally fiery in the finale, yet with no sacrifice of nuance.

Less happy are the results in that stepchild of high-Romantic violin concertos, the Schumann D Minor, which both Joachim and Brahms felt should not be published since the composer, on the verge of his final mental collapse, had been functioning creatively below standard. (The album notes, by the way, are in error with respect to the first public performance, which was given not by Jelly d'Aranyi with the BBC Symphony under Sir Adrian Boult on February 16, 1938, but by Georg Kulenkampff in Berlin on November 26, 1937.) Kremer and Muti have not, I think, succeeded in cracking this tough nut of a piece in terms of achieving a convincing line and steady flow in the opening movement. Matters improve in the slow movement, to which Kremer brings a fine *Innigkeit* and tenderness, and he imparts a good flow to the somewhat repetitious polonaise-like finale, handling the sometimes intractable solo episodes with remarkable ease. The sound as such is good in both works, though the orchestra is a touch over-reverberant now and then in the opening of the Schumann. *D.H.*

R. STRAUSS: *Symphony for Wind Instruments in E-flat Major.* Munich Wind Soloists Academy, Wolfgang Sawallisch cond. ORFEO ● S 004821 A \$13.98 (from Har-

LISTEN TO WHAT 50 YEARS OF EXPERIENCE CAN SOUND LIKE....

TANDBERG



CIRCLE NO. 50 ON READER SERVICE CARD

Tandberg's world-famous audio products, highly regarded by professional musicians as well as discriminating consumers for more than 50 years, now include two of the most advanced high fidelity components available today: the TIA 3012 Integrated Amplifier & TPT 3001A Programable Tuner.

These units, which were individually given a "rave" review by AUDIO magazine, can be joined together with their optional rosewood sidepanels to become "...the finest 'receiver' we have ever tested" (HIGH FIDELITY) and "a receiver of exceptional quality" (STEREO REVIEW).

It is a stereo receiver capable of exceeding the demands of today's... and tomorrow's most advanced digital program material.

For literature, test reports and the name of your local dealer, contact: Tandberg of America, Labriola Court, Armonk, NY 10504. (914) 273-9150

WHO SAYS YOU HAVE TO CLEAN COMPACT DISCS?

CBS, DENON, TELARC, GRP...

Although it represents the highest technology in sound reproduction, the Compact Disc can still be "fooled" into mistracking or skipping by dust, dirt or other particles.

To remove such contaminants without damaging the disc surface the CD



CD-1000S
Non-abrasive,
Non-corrosive
Spray

CD-1101C Ultra-soft
Lamb's Leather Cleaner

CD-1101B Storage/Disc
Holder Base

manufacturers themselves endorse the Nagaoka CD Cleaning System.

To keep your new Compact Disc collection sounding and looking beautiful, there is no better solution (which, in our Case, is a Spray) than the Nagaoka CD-1100K CD Cleaning System.

NAGAOKA
Take Care.

14 Van Zant St./Norwalk, Connecticut 06855/203 853-9792/Telex 643073 MI-FI INC ILLP

CIRCLE NO. 23 ON READER SERVICE CARD

DENON



DESIGN INTEGRITY Denon doesn't build new models every few months with insignificant cosmetic facelifts or basic changes so radical you question the validity of the previous designs.

Instead, Denon builds models such as the DP-62L (Sug. Ret. \$595) and DP-72L (Sug. Ret. \$695), Dynamic Servo Tracer tonearm-equipped versions of the legendary Hi-Fi Grand Prix award winning DP-60L.

To make something truly better, Denon starts with something very, very good.

Denon America, Inc., 27 Law Drive, Fairfield, New Jersey 07006

CIRCLE NO. 28 ON READER SERVICE CARD

monia Mundi USA, 2351 Westwood Boulevard, Los Angeles, Calif. 90064).

Performance: **Good**

Recording: **Good**

During the late years of World War II, before Allied bombers blasted away the last vestiges of the milieu in which his life had been centered, Richard Strauss composed two works for an array of sixteen wind instruments, both originally called sonatas. The earlier one was subtitled *From an Invalid's Workshop*, and the later one, in E-flat, was called *The Happy Workshop*. The scoring calls to mind Mozart's Serenade, K. 361, for thirteen wind instruments, but the Strauss pieces have a more elaborate instrumental layout and use a four-movement format embodying far more developmental matter than Mozart's.

I confess to being somewhat overwhelmed by the richness of texture and detail in *The Happy Workshop*, but certainly the composer's fans and woodwind buffs should delight in it. I did enjoy the elegant crafting of the expansive third-movement *Menuett* and the contrasting somber and humorous elements in the finale. The Munich ensemble under Wolfgang Sawallisch gives a reading that is both precise and affectionate. The digitally mastered recording was made in a spacious locale whose name sends a bit of a chill down the spine: Renaissance-Festsaal des Schlosses Dachau. *D.H.*

TANEYEV: *Prelude and Fugue in C Sharp Minor* (see MUSSORGSKY)

TCHAIKOVSKY: *Dumka, Op. 59* (see MUSSORGSKY)

TCHAIKOVSKY: *Symphony No. 6, in B Minor, Op. 74 ("Pathétique")*. Cleveland Orchestra, Lorin Maazel cond. CBS ◉ IM 37834, © IMT 37834, no list price.

Performance: **Analytic**

Recording: **Crystal clear**

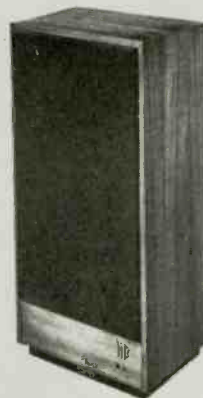
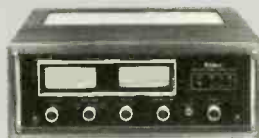
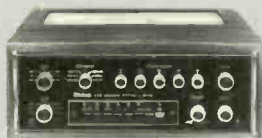
Lorin Maazel was never one to tear a musical passion to tatters, and here with the Cleveland Orchestra, over which he presided as music director for a decade, he offers us a Tchaikovsky *Pathétique* notable for delineation of textural detail but also, in the end movements, for an essential coolness. To the famous 5/4 second movement Maazel brings an intriguingly febrile quality by no means out of keeping with the music's character, with the pedal-point middle section moving along more swiftly than usual. The quickstep third movement is something of a virtuoso tour de force here: every line is clearly audible, including the descending contrabasses at the point where the clarinets set forth the main theme. I have the distinct feeling that here and elsewhere in this performance the timpani balances were arranged so that the linear aspects of the music would not be swamped at the climaxes. It's an interesting, even revealing reading, if not an altogether convincing one. You could practically write out the score simply from hearing this disc. But is that really what Tchaikovsky's Sixth is all about? *D.H.*

VERDI: *Simon Boccanegra*. Lajos Miller (baritone), Simon Boccanegra; József Gregor (bass), Fiesco; Veronika Kincses (so-

FREE

McIntosh STEREO CATALOG and FM DIRECTORY

Get all the newest and latest information on the new McIntosh stereo equipment in the McIntosh catalog. In addition you will receive an FM station directory that covers all of North America.



**SEND
TODAY!**

McIntosh Laboratory Inc. SR
East Side Station P.O. Box 96
Binghamton, N.Y. 13904-0096

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

If you are in a hurry for your catalog please send the coupon to McIntosh. For non rush service send the Reader Service Card to the magazine.

CIRCLE NO. 32 ON READER SERVICE CARD

STEREO REVIEW

prano), Amelia; János B. Nagy (tenor), Gabriele; István Gáti (baritone), Paolo Albiani; Balázs Hantos (bass), Pietro; others. Chorus and Orchestra of the Hungarian State Opera, Giuseppe Patané cond. HUNGAROTON • SLPD 12522-24 three discs \$38.94.

Performance: **Good**
Recording: **Very good**

Recognition came belatedly to *Simon Boccanegra*, particularly outside Italy. The Vienna State Opera produced it for the first time in 1930, the Metropolitan in 1932. I had the good fortune to discover it in 1937, attending, as a student, its first performances by what was then the *Royal Hungarian State Opera* under the leadership of the theater's great resident Italian conductor, Sergio Failoni. Hearing the opera now, with an all-Hungarian cast led by another Italian conductor (and a great local favorite), revives wonderful memories for me.

The world has become much smaller since then. Recorded complete operas—even such one-time rarities as *Simon Boccanegra*—have become commonplace, and the front-line Hungarian singers of this generation have learned to perform operas in their original languages. More astonishingly, they form ensembles in recordings of Verdi and Puccini (to say nothing of Goldmark and Boito) that can stand up to formidable international competition.

Giuseppe Patané is unquestionably the hero of this particular enterprise. It is certainly his accomplishment that the performance has an authentic Verdian sound and spirit. He may not have worked with the cast of his dreams, but, shaping the orchestral framework to the strength and limitations of his singers, he has given us a committed account of this deeply moving opera.

Lajos Miller rises to commanding heights in *Boccanegra*'s great Council Chamber Scene, where he intones the "*Piango su voi*" cantilena very movingly. The music, however, frequently taxes his resources; when it does, his smooth lyric baritone becomes unsteady. Still, his is a commendable, stylish, and intelligent portrayal. Veronika Kincses, likewise, is not ideally cast in the rather demanding role of Amelia; I miss a certain solidity in the lower range that the part calls for. But when the music moves into the bounds of Kincses's very attractive lyric compass (the Recognition Scene, in particular), the Hungarian soprano meets its requirements with exquisite poignancy.

János B. Nagy reveals a firm and rather powerful tenor that has no difficulty coping with Adorno's music. He sings in a forthright manner, though not with much subtlety or tonal variety and with occasional rhythmic and intonational lapses. József Gregor projects an appropriately stern and menacing Fiesco, with a snarling edge to his substantial voice. His command of the upper range is enviable, but I miss the mellifluous manner of a true *basso cantante* in this music, that is, the Pinza/Siepi sound as opposed to the Christoff/Ghiaurov model. Baritone István Gáti is a major artist and, as the villainous Paolo Albiani, he sounds like one. The subsidiary roles are adequately handled.

While *Simon Boccanegra* is not in the

Angel



Available on New
High Quality XDR/HX Cassettes

The Standard
of Excellence



DS-38023



DS-37344



IE-6134



IB-6135



IC-6136

NEW ON
SERAPHIM

CIRCLE NO. 5 ON READER SERVICE CARD

At Last! These Famous Ricordi Opera Posters Are Imported From Italy!



TURANDOT
MUSICA DI G. PUCCINI
EDIZIONI RICORDI



Only \$8.95 each.
Only \$24.95 each
completely framed!

Now, you can enjoy these rare, beautiful and historic art prints in your own home! Don't miss this collector's opportunity. Order today! **Money-back guarantee** on your full purchase price, less p&h. All orders processed promptly. Credit card orders processed immediately upon credit approval. Delay notified promptly. Shipment guaranteed within 60 days.

These posters capture the magic of La Belle Epoque! This turn of the century period brought the most highly stylized and elegant works of art ever! During this time, the Ricordi family sponsored these great operas and commissioned these original works of art.

- Authentic full-color reproductions of the originals
- Full size, 19½" x 27½", 20" x 28" framed
- Rare • Beautiful • Historic

STERLING TREASURY, Sterling Building,
Box RPC-305, Garnerville, N.Y. 10923
YES! Please send me the following Ricordi Opera Posters: (List Quantities) _____ TURANDOT _____ Framed _____ Unframed
_____ MADAMA BUTTERFLY _____ Framed _____ Unframed
_____ TOSCA _____ Framed _____ Unframed

Enclose only \$8.95 + \$1.50 postage and handling each unframed, \$24.95 + \$3.00 p&h each framed in a rich gold tone. NYS residents add sales tax. Or, CHARGE IT: VISA MasterCard Expires _____

Card # _____
Name _____
Address _____
City _____ State _____ Zip _____



Itzhak Perlman and Ivry Gitlis

A Celebration of Violins

BRONISLAW HUBERMAN was not only a famous violinist but also the founder of what became, in 1948, the year after his death, the Israel Philharmonic Orchestra. For the centenary of Huberman's birth, in December 1982, the orchestra's music director, Zubin Mehta, conceived the idea of a week-long Huberman Festival with the IPO accompanying a group of today's outstanding violinists. Spanning a couple of generations, the participants included the Israeli-born, Paris-based violinist Ivry Gitlis, a protégé of Huberman's; the Polish-born British violinist Ida Haendel; and Isaac Stern and three of his protégés—Itzhak Perlman, Pinchas Zukerman, and Shlomo Mintz.

The festival performances were broadcast live on radio and filmed for television, and some of them were recorded live by Deutsche Grammophon, which has now released them in a two-disc or two-cassette package. The set includes three works for multiple soloists and one, Vivaldi's *The Four Seasons*, in which Stern, Zukerman, Mintz, and Perlman are each featured in one of the component concertos. Stern and Mintz are heard together in Bach's Concerto for Two Violins, and they are joined by Haendel and Gitlis in Vivaldi's B Minor Concerto for Four Violins (the one Bach transcribed for four claviers). Perlman and Zukerman (the latter as violist this time) play Mozart's Sinfonia Concertante, K. 364. Mehta conducts the Israel Philharmonic in all the performances.

Most of these fiddlers have recorded

these works before. No matter. The live Tel Aviv performances have an air of excitement about them, an air of *occasion*—perhaps in part generated by the artists' joy in playing for their assembled peers as well as for the larger audience. (Some of the applause and cheering might have been edited out, though in this case it seems a part of the occasion, perhaps the only apt release for the intensity built up in the performances.) There are other fine recordings of all these pieces, several possibly superior in one respect or another to those here, but all the solos in *The Four Seasons* are exceptionally beautiful, and so is the Perlman/Zukerman partnership in the Mozart (despite a rather perfunctory orchestral contribution). As a document of a violinistic "summit meeting," the set is very much in a class by itself.

The sound is splendid, and there is a fine, concise note by the distinguished Israeli musicologist Peter Gradenwitz.

—Richard Freed

VIVALDI: *The Four Seasons, Op. 8, Nos. 1-4; Concerto in B Minor for Four Violins and Strings, Op. 3, No. 10.* J. S. BACH: *Concerto in D Minor for Two Violins and Strings (BWV 1043).* MOZART: *Sinfonia Concertante in E-flat Major for Violin, Viola, and Orchestra (K. 364).* Isaac Stern, Pinchas Zukerman, Itzhak Perlman, Shlomo Mintz, Ida Haendel, Ivry Gitlis (violin); Israel Philharmonic Orchestra, Zubin Mehta cond. DEUTSCHE GRAMMOPHON 2741 026 two discs \$21.96, © 3382 026 \$21.96.

current Budapest repertoire, under the circumstances the choral and orchestral work is entirely praiseworthy. There are a few measures cut from the third act, a conductorial preference to which only diehard purists will object. Gabriele's first entrance is much too close for the desired "offstage" effect, but this is the only negative element in

an otherwise excellent technical production. The total effect here exceeds the sum of its parts. Hungaroton's achievement does not quite match the glamorously cast Deutsche Grammophon set (Cappucilli, Freni, Ghaurov, and Carreras, Claudio Abbado conducting), but it runs a surprisingly strong second to it.

G.J.

RECORDING OF SPECIAL MERIT

WAGNER: *Die Meistersinger: Prelude; Prelude to Act III; Dance of the Apprentices; Procession of the Mastersingers. Die Götterdämmerung: Siegfried's Rhine Journey; Siegfried's Funeral March.* Chicago Symphony Orchestra, Fritz Reiner cond. RCA ARP1-4738 \$12.98, © ARE1-4738 \$12.98.

Performance: **Magnificent**
Recording: **Splendid**

RCA has done well to go back and remaster some of its priceless Reiner/Chicago recordings at half-speed, and this is the most impressive achievement yet in its "5" series. The 1959 recording, quite good to begin with, has been opened up to yield a consistently rich, brilliant, and altogether realistic sound, fully competitive with almost anything else now offered in analog format. And what magnificent performances! R.F.

COLLECTIONS

RECORDING OF SPECIAL MERIT

PETER HURFORD: *The Organ at Sydney Opera House.* J. S. BACH: *Tocatta and Fugue in D Minor (BWV 565); Jesu, Joy of Man's Desiring.* Albinoni: *Adagio in G Minor.* Purcell: *Trumpet Tune in D Major.* Franck: *Chorale No. 2, in B Minor.* Murrill: *Carillon.* Davies: *Solemn Melody.* Widor: *Symphony No. 5, Tocatta.* Peter Hurford (organ). ARGO 2RDL 1016 \$10.98, © KZRDC 1016 \$10.98.

Performance: **Wonderful**
Recording: **Excellent**

The organ at the opera house in Sydney, Australia, was built in 1979 by Ronald Sharpe, and Peter Hurford exhibits its splendors in this wonderful tour of music ranging from Baroque to modern times. He is a virtuoso performer who understands the organ's potentials and is not afraid to exploit them. Although opportunities to descend into vulgarity and banality may seem overwhelming with such an instrument, Hurford succeeds in keeping within the bounds of good taste while obviously reveling in the music's sonorities. The recorded sound is superb. S.L.

JULIAN LLOYD WEBBER: *Cello Man.* Canteloube: *Bailèro.* Falla: *Ritual Fire Dance.* Saint-Saëns: *Samson et Dalila: Mon coeur s'ouvre à ta voix.* Bridge: *Scherzetto.* Fauré: *Elégie.* Villa-Lobos: *Bachianas brasileiras No. 5, Cantilena.* J. S. Bach: *Cantata No. 156, Arioso.* Popper: *Gavotte No. 2.* Delius: *Hassan, Serenade.* Bruch: *Kol Nidrei.* RCA (UK) RL 25383 \$13.98, © RK 25383 \$13.98 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

Performance: **Syrupy**
Recording: **Good**

As far as technique is concerned, Julian Lloyd Webber plays the cello very well, but most of the arrangements in this collection are so oppressively tasteless, and the few pieces in their original form so extremely sentimentalized in the interpretation, that listening to the record offers little pleasure beyond the technical security itself. R.F.

Popular Music

News Briefs

Robin Kaplan/Retna Ltd.



THE first time I chatted with the amiable **Southside Johnny** (Lyon) of the Asbury Jukes was in conjunction with the release of "Hearts of Stone" (1979), since widely celebrated as the Jukes' *chef d'oeuvre*. I talked to Johnny again recently in celebration of the band's first new release in over two years, "Trash It Up," and I asked what had caused the recording hiatus.

"It took me a year just to get over the disappointment of our live album not doing as well as I thought it should," he said. "Why should I subject myself to all this again if I don't feel I have something to say? So mostly I worked on my voice. For the last two and a half years I've been thinking about Billie Holiday, Frank Sinatra, Muddy Waters, people who aren't really trained singers but have great expression. I think I've learned a lot about being a singer since we recorded last."

Johnny was not exactly singing in the shower all this

time, however. The Jukes toured and made what has become a somewhat controversial Miller Beer commercial. Johnny himself also worked as musical consultant for the movie *Eddie and the Cruisers*.

Asked to describe the new album, he thought a moment, then declared it "a wry, humorous look at sex and how it can be fun without being exploitive—which doesn't get touched on that much. It's not soft candlelight and wine, but we've done that already."

With its stripped-down sound (fewer horns, more synthesizer) and updated dance rhythms (courtesy of producer Nile Rodgers of Chic), the record is a bit of a departure, and I wondered if Johnny worried how the band's hardcore fans would take it.

"Sure," he said, "I worried for a while. But what the hell: basically it's still rhythm-and-blues, and what else have we been doing all this time? You have to keep 'em on their toes." **S.S.**

VIDEOLA: Scottish rock artist **Jesse Rae** has used video to deliver a diplomatic message of peace. "Rusha," his Sony Video 45 featuring a young ballerina from the New York City Ballet dancing among images of soldiers, was sent to Soviet Premier Yuri Andropov with the following message: "It is my hope that you accept this tape as a gesture of good will and understanding between our nations. It is also my hope that the young Russian people and their Western counterparts can learn to dance together, rather than fear each other."

... "Whoops Apocalypse" from Pacific Arts Video Records is a recently released video cassette from a British TV series about imaginary incidents leading up to World War III. Featuring **John Cleese** of Monty Python and a host of other British comic actors, the cassette provides more than two hours of gallows humor and other entertainment. □

CELLULOID ROCKERS: Despite published reports, r-&-b crossover hero **Prince** will *not* be playing Little Richard in the forthcoming film biography of Fifties rock legend Gene Vincent. It would have been inspired casting, but there you are. The Vincent bio-pic, titled *Rockabilly*, will star Sean Penn (hilarious in 1983's *Fast Times at Ridgemont High*) as Vincent and Ray Sharkey (the manager in *The Idolmaker*) as Vincent's songwriting partner John Mackey. Prince, meanwhile, is about to go into production in the starring role of his own full-length feature, as yet untitled. ... Word has it that **Tom Waits**, currently visible in Francis Coppola's *Rumble Fish*, will be playing the manager of the Cotton Club in Coppola's forthcoming film about the legendary Harlem nightspot, and **King Sunny Adé** will be playing a small role and performing two songs in the next movie from director Robert Altman. **S.S.**

Deniece Williams is the latest pop star to appear on a daytime soap opera. In her recent debut on CBS-TV's *As the World Turns*, Williams (shown below with continuing series star Scott Bryce) por-

trayed herself performing at a night club on board a luxury yacht. Her latest Columbia LP, "I'm So Proud," was reviewed here in the "Best of the Month" section in October 1983. □



Columbia Records

Disc and Tape Reviews

By CHRIS ALBERTSON • PHYL GARLAND • ALANNA NASH • MARK PEEL
PETER REILLY • STEVE SIMELS • JOEL VANCE

RECORDING OF SPECIAL MERIT

ASHFORD AND SIMPSON: *High-Rise*. Nickolas Ashford (vocals); Valerie Simpson (vocals, piano); vocal and instrumental accompaniment. *Side Effect; Experience (Love Had No Face); It's a Rush; My Kinda Pick Me Up; I'm Not That Tough;*

Explanation of symbols:

- = digital-master analog LP
- Ⓢ = stereo cassette
- ⓐ = digital Compact Disc
- ⓑ = eight-track stereo cartridge
- ⓓ = direct-to-disc recording
- Ⓜ = monophonic recording

The first listing is the one reviewed; other formats, if available, follow it.

and three others. CAPITOL ST-12282 \$8.98, © 4XT-12282 \$8.98.

Performance: **Mellow and imaginative**
Recording: **Good**

Nickolas Ashford and Valerie Simpson, that protean creative duo, have worn many faces and played many roles over the years. On this latest album we mostly encounter them as an urbane, super-hip couple playing with themes reflecting the ennui of contemporary fast-track city life. The title song is a harshly realistic appraisal of the emptiness of ostentatious success, and *It's a Rush* comments on the pressure that compels some to seek one-night stands on the dance floor. *Experience (Love Had No Face)* expresses the same jaded mood.

Yet there are also more warmly appealing, sentimental musings here, such solid soul music as *I'm Not That Tough* and *It's*

Much Deeper. Best of all is *Still Such a Thing*, a love song delivered with such embracing sweetness that it recalls all the most moving hits these two have given us in their long careers. With its intimate vocal exchanges, this song provides full assurance that, far from being lost to commercialism, the "old" Ashford and Simpson are not only alive and well but singing better than ever. "High-Rise" is a rich and rewarding album with an exceptionally wide thematic range. **P.G.**

PHILIP BAILEY: *Continuation*. Philip Bailey (vocals); vocal and instrumental accompaniment. *I Know; Trapped; It's Our Time; Desire; The Good Guy's Supposed to Get the Girls; I'm Waitin' for Your Love;* and two others. COLUMBIA FC 38725, © FCT 38725, no list price.

Performance: **Fine, high singing**
Recording: **Very good**

Although Philip Bailey's name might be unfamiliar to the popular-music public, his sound is well known. For more than twelve years he served as co-lead singer, along with Maurice White, in the pacesetting progressive-soul group Earth, Wind & Fire, lending his distinctive, piercingly high falsetto to their most memorable songs. If you still can't place him, try to recall that spectacular A above high C he hit on the phrase "higher and higher" during the refrain of EW&F's *That's the Way of the World*, one of the outstanding popular performances of recent years. That single sky-scraping note and the way he built up to it were enough to establish him as a modern master of falsetto singing. Recently he teamed with Deniece Williams on *They Say*, the searing gospel number that was a highlight of her remarkable album "I'm So Proud."

"Continuation," Bailey's debut solo album, is not as consistently excellent as some of his previous collaborations. There is a somewhat lower level of musical imagination in the material he sings here (some his own compositions). But the album does demonstrate that he is an artist with a singular and highly polished vocal style who is capable of generating considerable heat through his incisive attack, zestful delivery, and firm professionalism. There's not a sloppy note to be heard here.

One of the highlights is *It's Our Time*. Deniece Williams joins him on it, repaying his favor; their duet scintillates with ebullience and joy. Just listen to the way they play vocal games with each other as they pitch for those startlingly high notes. Several of the other selections are safely unadventurous funk, but some are fresh enough to permit Bailey to dazzle us with his vocal footwork. *Your Boyfriend's Back* might have bogged down interpreted by a lesser artist, but Bailey drives it across with a sass and verve that are riveting. This same spirit shines through on two other cuts, *Trapped* and *Vaya (Go with Love)*, each of them enough to make it on its own. So is Philip Bailey. **P.G.**



Lynn Goldsmith/Columbia Records

Sweetheart Like You, whose ludicrously macho sentiments are probably not intended ironically. What the hell is this man trying to do?

Confound our expectations, probably, just as he used to do before his recent string of thoroughly awful religious albums. He's succeeded, I think, because, despite the erratic production and the occasional song that runs longer than it needs to, "Infidels" gives us an overwhelming sense of a living, breathing, *thinking* human being at work. And if there's anything that rock has been in conspicuously short supply of lately, that's it. That this particular real person should turn out to be an aging bard whom most of us had long since written off as completely irrelevant is merely another of the album's pleasures, one of life's little ironies.

There is some genuinely brilliant stuff here, notably *Union Sundown*, a meditation on greed mated with a slashing blues-based rhythm track; *I and I*, a terrifying song that has one of the most impassioned vocal performances of Dylan's career; and, especially, *Neighborhood Bully*, a return to political songwriting that is guaranteed to alienate Dylan's old leftie constituency for all time. Overall, it's quite an album. While it's possible that I'm overrating it simply because hearing Dylan breathe (secular) fire again is such a pleasure, I'm inclined to doubt it. Head for your nearest record store and decide for yourself. —*Steve Simels*

BOB DYLAN: *Infidels*. Bob Dylan (vocals, guitar); Mark Knopfler, Mick Taylor (guitar); Robbie Shakespeare (bass); Sly Dunbar (drums); other musicians. *Jokerman; Sweetheart Like You; Neighborhood Bully; License to Kill; Man of Peace; Union Sundown; I and I; Don't Fall Apart on Me Tonight.* COLUMBIA QC 38819, © QCT 38819, no list price.

Dylan Lives!

BOB DYLAN'S new "Infidels" is a sprawling, uneven, infuriating mess of an album—but it's alive in ways that most current rock product rarely even aspires to be. At the very least, it puts Dylan back in the ball game, for good or ill.

Actually, "Infidels" is more than infuriating; it's almost willfully perverse. Examples: hiring the pre-eminent reggae rhythm section of our age, Sly Dunbar and Robbie Shakespeare, and then making music that only fitfully verges on reggae; employing two spectacular guitarists, Mark Knopfler and ex-Rolling Stone Mick Taylor, and then often mixing their contributions into inaudibility; juxtaposing an almost condescendingly pro-feminist song, *License to Kill*, with an otherwise glorious ballad,

PAT BENATAR: *Live from Earth*. Pat Benatar (vocals); instrumental accompaniment. *Fire and Ice; Medley—I Want Out/We Live For Love/Hell Is for Children; Hit Me with Your Best Shot; Love Is a Battlefield*; and four others. CHRYSALIS FV 41444, © FVT 41444, no list price.

Performance: **Hit-mongering**
Recording: **Undistinguished**

"Live from Earth" is a throwback to the days when producing a credible live recording was beyond the technical means of most rock bands. The sound is muddy and unfocused, the performance banal, knee-jerk hit-mongering. There's a lot of posturing but no genuine feeling in this music. The tunes—Pat Benatar's best, I'm afraid—aren't nearly interesting enough to hold up under such perfunctory, hash-slinging treatment. Considering Benatar's operatic training and hard-nosed reputation, you would think she could hold her own on stage. But she's no Valkyrie; she has to resort to a raw, tuneless scream in order to project over the thrashing accompaniment. Perhaps sensing the futility of the project, Benatar and producer/guitarist Neil Giraldo bring the live music to an abrupt halt midway into the second side. The two concluding studio tracks—*Love Is a Battlefield* and *Lipstick Lies*, the first a weak stab at new music, the second an Electric Flag-style white r-&-b number with a dated sound—are only marginally better. *M.P.*

RECORDING OF SPECIAL MERIT

BIG COUNTRY: *The Manor*. Big Country (vocals and instrumentals). *In a Big Country; Inwards; Chance; 1000 Stars; The Storm; Angle Park; Fields of Fire; Harvest Home*; and three others. MERCURY 812 870-1 \$8.98, © 812 870-4 \$8.98.

Performance: **Guitar heaven**
Recording: **Good**

These guys are getting tremendous hype, being the first recent non-heavy-metal English act to use the traditional guitars-only lineup, which may signify that the anti-synthesizer backlash is finally upon us. What I really find interesting about the band is that it's so aptly named. Despite the Celtic folk overtones of a lot of the material, the group's almost orchestral use of massed guitars really does evoke Cinemascope Western vistas and the Marlboro-ad school of film-music composition. Anyway, there are more obvious antecedents for the group's sound: the Byrds and, especially, Television come immediately to mind. I suppose you could label this stuff the new Folk Rock, as some have already done. The point is that whatever it is and wherever it came from, it's good. Although the lyrics, when you can make them out, seem mostly functional, and some of the songs could use some editing, for the most part this is a bracing set of tough-and-tender tunes done up with spectacular, original-sounding guitar work. It will be interesting to see how these guys develop. *S.S.*

RECORDING OF SPECIAL MERIT

THE BLUEGRASS CARDINALS: *Cardinal Class*. The Bluegrass Cardinals (vocals and instrumentals). *Pulleybone Gayden*;

HIGH FIDELITY FINALLY HITS THE ROAD



Now Europe's #1 audio manufacturer brings America a complete series of True Auto Hi-Fi components. Each is designed to deliver music reproduction worthy of fine home stereo systems.

Philips Auto Audio offers you 25 different car speakers (including our unique Sound Series 2000), three power amplifiers, a preamplifier/6-band graphic equalizer, and a quartz digital PLL tuner/cassette deck.

For complete information, call toll free (800) 645-7711, or write Philips Auto Audio, 230 Duffy Avenue, Hicksville, New York 11802.



PHILIPS AUTO AUDIO

Amperex Electronic Corporation
A NORTH AMERICAN PHILIPS COMPANY

CIRCLE NO. 9 ON READER SERVICE CARD

Revox B261

The Swiss Watch of FM Tuners

Precise. Accurate. Functionally designed. Meticulously crafted.

We present for your examination the new B261 Microprocessor Controlled Digital Synthesizer FM Tuner, designed and built in Switzerland. The B261's performance surpasses even that of its esteemed predecessor, the highly acclaimed Revox B760. Distortion and noise specs are so low that the B261 challenges the limits of some test instruments. And the B261's extreme accuracy (tuning in 12.5 kHz increments) assures perfect reception, even from imperfect cable systems.

The B261 also offers an abundance of new features, including: • 20 station pre-sets • Tri-mode LCD display for station call letters, frequency, and pre-set number • Programmable reception modes (mono/stereo, high blend, muting) for each pre-set • Dual programmable antenna inputs (option) • Infrared remote control (transmitter optional).

Yes, there are good tuners that cost less. Just as some good watches cost less than Swiss watches. We ask only that you compare carefully. Consider relative performance today...and value ten years from now.

The B261 reference standard tuner may be heard today at your Revox dealer.



STUDER REVOX

1425 Elm Hill Pike, Nashville, TN 37210 (615) 254-5651

CIRCLE NO. 47 ON READER SERVICE CARD

Warm Kentucky Sunshine; Is Your Heart Right with God; Country Poor and Country Proud; and seven others. SUGAR HILL SH-3731 \$7.98.

Performance: **Smooth**
Recording: **Very good**

The Bluegrass Cardinals are five guys in polyester suits who make 100 per cent cashmere music. Formed in 1973, the group has gone through various personnel changes, but the mainstays have been Don Parmley, on banjo and baritone vocals, and his son, David, on lead vocals and guitar. The Parmleys are class operators, and on their first album for Sugar Hill the Cardinals demonstrate an uncommon degree of musicianship and finesse. Unlike so many other bluegrass groups, who just throw it all out there, the Cardinals understand the idea of dynamics, and they temper the usual fast-driving banjo numbers with a couple of real stunners—a gorgeous *a cappella* version of Bill Monroe's inspirational *That Home Above*, and a western-bluegrass rendition of Bob Nolan's *Way Out There* that may just spawn a whole new musical form.

The Cardinals place more emphasis on vocals than they do on instrumentals, and David Parmley's baritone is consistently smooth, rich, and commanding, while his partners' exquisite harmonies often sound more like those of a gospel quartet than a high-lonesome bluegrass group. What impresses me most about this band, though, is the sense of integrity they bring to their music. Their picking is tasteful and econom-

ical, with nary an extravagant note, and their instrumental interplay is more imaginative than most bluegrass groups care to bother with. Best of all, they don't even begin to play *Rocky Top* or *Rollin' in My Sweet Baby's Arms*. A.N.

RECORDING OF SPECIAL MERIT

CLARENCE CLEMONS AND THE RED BANK ROCKERS: *Rescue*. Clarence Clemons (saxophone); the Red Bank Rockers (vocals and instrumentals); other musicians. *Jump Start My Heart; Rock 'n' Roll DJ; Money to the Rescue; A Woman's Got the Power; A Man in Love*; and three others. COLUMBIA BFC 39833, © AL 39833, no list price.

Performance: **Great fun**
Recording: **Excellent**

This is a nifty little record, familiar-sounding or not—a big, warmhearted tribute to various r-&-b styles that really suggests a Sixties soul album without being overly purist about it (there is, for example, the occasional use of a synthesizer). Clarence Clemons, the nominal star, doesn't handle the singing, but J. T. Bowen, who does, is quite convincing in a Wilson Pickettish sort of way. Clemons's saxophone, always a delight, is prominent throughout. The songs themselves are mostly fine; they don't strain for the Big Statement, and they're not immediately memorable, but they range from quite grand (*A Man in Love*) to spookily amusing (*Money to the Rescue*, which

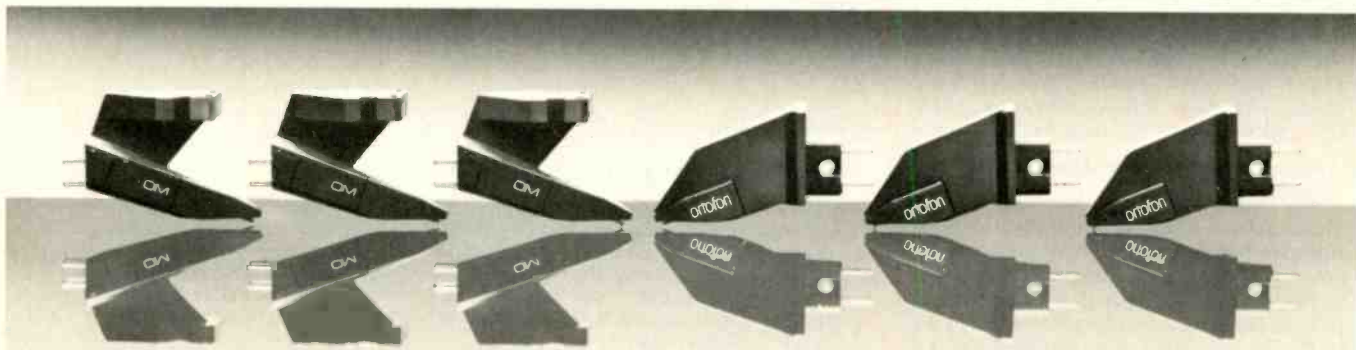
seems derived from my personal all-time favorite r-&-b single, Alvin Cash's *Twine Time*), and they get the job done. In short, "Rescue" is a thoroughly entertaining piece of work. S.S.

RECORDING OF SPECIAL MERIT

CULTURE CLUB: *Colour by Numbers*. Culture Club (vocals and instrumentals); other musicians. *Karma Chameleon; It's a Miracle; Black Money; Changing Every Day; That's the Way (I'm Only Trying to Help You); Church of the Poison Mind*; and four others. VIRGIN QE 39107 \$7.98, © QET 39107 \$7.98.

Performance: **Light, engaging**
Recording: **Excellent**

In the current British popular-music scene, it's impossible to divorce style from substance. You are what you wear as much as what you play. Among the latest crop of new-music stars, there are no stories of struggling geniuses who have emerged after years of seclusion spent perfecting their craft. Quite the opposite: most are newcomers to music who've learned on the job. There's no better example of this triumph of image over education than Culture Club's George O'Dowd, or Boy George—an androgynous vision in lipstick and mascara, plucked eyebrows, dreadlocks, and a broad-brimmed felt hat. It is not a look likely to occur to a guitarist who's spent ten years shut up in the woodshed mastering the styles of T-Bone Walker or Chuck Berry.



The world's finest magnetic cartridges have just gotten better!

They're called Optimum Match cartridges (OM for short). That's because their mass can be adjusted to match any tonearm.

But that's not why they perform superbly.

They perform superbly because Ortofon engineers worked on the world-acclaimed, patented VMS design until every critical speci-

fication was made even better!

Whether you have a conventional or P-mount tonearm system, there's no quicker, easier or more inexpensive way of improving music performance in your home.

You really should ask your Ortofon dealer for a demonstration. You really should.

ortofon

122 Dupont Street, Plainview, New York 11803

CIRCLE NO. 15 ON READER SERVICE CARD

but it's entirely plausible for someone whose training, like Boy George's, consisted of checking hats at London's chic Blitz club and applying make-up to the faces of the Royal Shakespeare Company.

What galls the Puritan work ethic in me about Boy George is that he's good. Besides being pretty, Boy George is a very appealing vocalist. The frequent comparisons of him with Smokey Robinson are apt; he puts the same kind of emotion into a song. "Colour by Numbers" is a light, soulful mix of funk, synth, and Latin influences delivered with none of the heavyhandedness you'd expect from someone who looks like a Hasidic Rastafarian. Boy George's colleagues—Jon Moss on drums, Mikey Craig on bass, and Roy Hay on keyboards and guitar—play with crisp precision (maybe these guys actually *did* study their instruments). And back-up vocalist Helen Terry, whose acrobatic phrasing reminds me of Nona Hendrix, is used to great effect.

The song lyrics play off Boy George's paradoxical image—both sexual and racial—in an oddly innocent and unthreatening way. Were it not for Culture Club's powerful visual image and the lyrical possibilities this creates for the band, there wouldn't be much to distinguish "Colour by Numbers" from an album by, say, the Three Degrees. What Culture Club and other British new-music groups are doing is reshuffling the elements that make up our popular music and thus redefining the criteria we use to judge a pop performance. The Beatles did the same thing with their mop

tops. It's up to the public to decide whether a featured boa, spiked, tinted hair, or any other visual element is a legitimate component of pop music. Judging from the success of MTV and the popularity of groups such as Culture Club, the answer seems to be a resounding yes. M.P.

RECORDING OF SPECIAL MERIT

GAIL DAVIES: *What Can I Say*. Gail Davies (vocals); vocal and instrumental accompaniment. *Boys Like You; On a Real Good Night; What Can I Say; You're a Hard Dog (To Keep Under the Porch); Setting Me Up*; and five others. WARNER BROS. 23972-1 \$8.98, © 23972-4 \$8.98.

Performance: **Terrific**
Recording: **Quite good**

Gail Davies consistently puts out some of the most engaging and stylishly produced albums in popular music. Her new one, "What Can I Say," produced by Davies herself with her usual command and verve, further showcases her stubborn streak of individuality; she continues to record whatever songs turn her head instead of songs that sound like what everybody else is doing. We get such stunners here as Rodney Crowell's *On a Real Good Night*, Ray Charles's *Hallelujah, I Love Him So*, Mark Knopfler's *Setting Me Up*, and several fine new songs by Davies, including the title tune. My favorite is a muscular, full-tilt number written by Harlan Howard and Susanna Clark, *You're a Hard Dog (To*

Keep Under the Porch), which is about something other than straying canines.

Davies is an accomplished singer technically, and her voice comes from someplace outside country (maybe even jazz/rock fusion), but she never lets that get in the way of having a good time. Part of her appeal stems from her infectious *joie de vivre*, which she manages to pass on to her musicians, who pick and strum like there's no tomorrow. Not every song here is compelling, of course, but the way she does it is, whether she's singing exquisite double-tracked harmony, setting a funky horn section down in the middle of a surprise turn, or wailing like a banshee. Occasionally she string-sweetens a little too heavily for my taste, but she smooths me over with a bitter-sweet duet with Ricky Skaggs, *It's You Alone*, written by her brother Ron.

So far, the Nashville establishment has almost ignored Davies. I predict that before long they won't have any choice but to own up that she's one of the most talented people now operating out of Music City. A.N.

THE DOORS: *Alive, She Cried*. The Doors (vocals and instrumentals); John Sebastian (harmonica). *Gloria; Light My Fire; You Make Me Real; Texas Radio & the Big Beat*; and three others. ELEKTRA 60269-1 \$6.98, © 60269-4 \$6.98.

Performance: **Matter of taste**
Recording: **Surprisingly good**

Viewed dispassionately, this anthology of recently unearthed live Doors material is



Jensen drives sound into the future.

Advanced technology gives you tomorrow's driving sound right now with the dynamic Jensen® Series 3000 TRIAX® and COAX car stereo speaker systems. High fidelity excitement that pushes sensitivity to the outer limits. Distortion is diminished. Clarity's redefined.

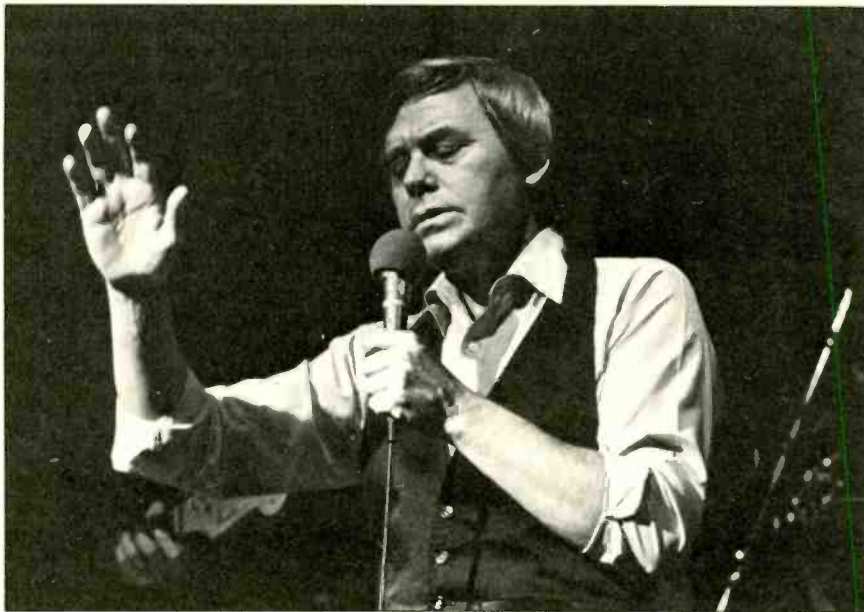
All Series 3000 speakers have been dynamically range-enhanced to maximize fidelity and performance, enabling them to respond brilliantly to the acoustics of any car interior.

That's Jensen. The sound that moves you like no other. One listen and you'll never drive anything less. Now or in the future.

JENSEN
CAR AUDIO
When it's the sound that moves you.

© International Jensen, Inc., 1983. "Triaxia®" and "Triax®" are registered trademarks identifying International Jensen as the producer of the patented 3-way speaker systems.

CIRCLE NO. 13 ON READER SERVICE CARD



Cherlyn Ziornik

The Return of Tom T. Hall

JUST when it looked as if Tom T. Hall would be relegated to the graveyard of country music, here he comes with an impressive new album, "Everything from Jesus to Jack Daniels," that should refurbish his reputation as country music's greatest storyteller. It's been many a year since Hall came up with a passel of tunes that actually said anything or had any of his old satiric bite, and while there aren't any songs here to rival *The Year That Clayton Delaney Died* or *Ballad of Forty Dollars*, nobody else is writing songs like those on a regular basis either. We do get some very listenable word portraits, including one about a truck driver who murders his wife after he overhears a stranger discussing her midnight virtues, another about a Mac Sledge type, and a terribly moving one about a traveler who finds a cache of letters in a Bible in a West Virginia boarding house.

Hall recorded most of his major hits for Mercury and then bounced around on a couple of other labels before returning to

Mercury for this album, and he sounds relaxed and happy to be home. Produced by Chet Atkins and Hall's old colleague Jerry Kennedy, it also marks a return to the mostly acoustic ensemble sound that so distinguished Hall's early recordings, complete with Kennedy's expressive dobro playing. If you close your eyes and drift away on the music, you just might forget all those bad albums Hall put out in between. Welcome back, Tom.

—Alanna Nash

TOM T. HALL: *Everything from Jesus to Jack Daniels*. Tom T. Hall (vocals); vocal and instrumental accompaniment. *Everything from Jesus to Jack Daniels*; *How'd You Get Home So Soon*; *Barroom Stranger*; *Senior Citizen Star*; *The Letters*; *I'm Just Not an Easy Man to Love*; *The Harmonica Man*; *The Adventures of Linda Bohannon*; *What Am I Gonna Do with My Music*; *Wasted*, *Borrowed Money*. MERCURY 814 025-1 M-1 \$8.98, © 814 025-4 M-1 \$8.98.

hard to fault. The sound is terrific, the performances are exceptionally good, and I think it's safe to say that if this had been released around the time it was recorded it would be remembered now as one of the group's better efforts. But granted all that, its arrival now is, for me anyway, a mixed blessing. Yes, it's a fascinating historical document, and yes, it has moments of genuine excitement, but it also raises the spectre that seems to be haunting the current Doors revival: namely, Jim Morrison's Grad Student Superstud act.

I suppose all that macho poetic posturing seemed revolutionary and liberating back in 1968, but fifteen years later it's just embarrassingly swinish. Frankly, if anybody tried this kind of thing today (*Gloria* is the prime

offender here), he'd be laughed off the stage, which I don't think is a bad thing. Unfortunately, the teenagers who keep buying Doors albums are probably swallowing Morrison's anachronistic sexism whole, and that *is* a bad thing. Oh well, far be it from me to condemn an album solely on political grounds. Let's just say that this is a period piece but still a nice gift for the Doors fans on your lists and a significant addition to the canon. As raids on the tape vaults go, this one is pretty respectable.

S.S.

SHEENA EASTON: *Best Kept Secret*. Sheena Easton (vocals); vocal and instrumental accompaniment. *I Like the Fright*; *Almost Over You*; *Sweet Talk*; *Don't Leave Me This Way*; *Devil in a Fast Car*; *Best*

Kept Man; and four others. EMI AMERICA ST-17101 \$8.98, © 4XT-17101 \$8.98.

Performance: **Fast lane**

Recording: **Good**

Sheena Easton's career is still firmly in the fast lane, and her performances have the assured enthusiasm of someone riding a streak of success. She's loud, hammy, and frenetic on most of the tracks here, and she's a lot of fun to listen to. She tears through such soap-opera songs as *Don't Leave Me This Way* and *Best Kept Man* as if she were auditioning for the Royal Academy of Hysterical Art, and her simpering steaminess in *I Like the Fright* is worthy of Olivia Newton-John. My own favorite is her runthrough of (*She's in Love*) *With Her Radio*, about a girl who dreams of 50,000 watts the way other girls dream of Tom Selleck. The best thing about Easton, aside from her drop-dead good looks, is her ability to give the impression that she isn't taking any of this too seriously either. P.R.

RECORDING OF SPECIAL MERIT

MICK FLEETWOOD'S ZOO: *I'm Not Me*. Mick Fleetwood (drums); George Hawkins (bass, keyboards, guitar, vocals); Billy Burnette, Steve Ross (vocals, guitars); Christine McVie, Lindsey Buckingham (vocals); other musicians. *Angel Come Home*; *You Might Need Somebody*; *State of the Art*; *This Love*; *I Give*; and five others. RCA AFL1-4652 \$8.98, © AFK1-4652 \$8.98.

Performance: **Very good**

Recording: **Very good**

There's a holiday feeling about this album, as though Mick Fleetwood and his cronies had written and played some of the selections just for fun. George Hawkins, Steve Ross, and Billy Burnette are all very talented writers. Burnette, the son of Dorsey Burnette and the nephew of Johnny, is especially accomplished in the neo-rockabilly style. He wrote the title tune, turns in a fine vocal on the Beach Boys' *Angel Come Home*, and blasts off on *Tear It Up*, a Burnette family anthem. Ross has a grand time with the Lloyd Price oldie *Just Because*, and Hawkins wrote the dandy *Put Me Right*, a lighter-than-air ballad with terrific harmonies. Christine McVie and Lindsey Buckingham of Fleetwood Mac are on hand as guest vocalists, but it is Messrs. Hawkins, Ross, and Burnette who fairly claim the honors for this refreshing and delightful album.

J.V.

DEAN FRIEDMAN: *Rumpled Romeo*. Dean Friedman (vocals, guitars, keyboards, harmonica); vocal and instrumental accompaniment. *First Date*; *Are You Ready Yet*; *Marginal Middle Class*; *Special Effects*; *Buy My Baby a Car*; *I Depend on You*; and four others. THE RECORD CO-OP DF100 \$10 (from The Record Co-Op, P.O. Box 1806, Ansonia Station, New York, N.Y. 10023).

Performance: **Very good**

Recording: **Very good**

Dean Friedman had an oddball hit a few years ago with *Ariel*, a hilarious song about a male wimp and a true-believer bimbo who blunder into bed. Friedman's is a special talent that, unfortunately, has limited

mass-market appeal. His lyrics are wry and sentimental at the same time, and, although he uses the instrumentation of pop, there is a neo-folkie aura about his vocals.

In this album Friedman celebrates and gently kids love in suburbia. His program begins with a rather tender description of a nervous girl making ready for her first date with a new boy and wondering about the future. At the end of the album, in *Marginal Middle Class* and *I Will Never Leave You*, a male protagonist takes stock of romance and security and opts for both. No rock-and-roll outlaw nonsense here.

If all this sounds cloyingly cutesie-poo, it's not. Friedman has accurate insights and writes some very funny lines. The only drawbacks are the occasionally plodding tempos and sluggish arrangements. "Rumpled Romeo" is a flawed gem, but a gem nonetheless. *J.V.*

RECORDING OF SPECIAL MERIT

MERLE HAGGARD: *That's the Way Love Goes*. Merle Haggard (vocals, guitar); the Strangers (instrumentals); other musicians. *That's the Way Love Goes; Don't Seem Like We've Been Together All Our Lives; If You Hated Me; I Think I'll Stay*; and six others. EPIC FE 38815, © FET 38815, no list price.

Performance: **Soulful and subdued**
Recording: **Very good**

Anyone coming out of a failed love affair would have to be masochistic or even suicid-

al to want to spend too much time with this album, a collection of gorgeously melancholy songs that reflect the Hag's own estrangement from his songwriter wife, Leona Williams. No one else in country music is quite as good as Merle Haggard at conveying devastation and desolation, partly because he stays away from self-pity, relying instead on understatement and irony.

Haggard copied a lot of his vocal licks and nuance from the late Lefty Frizzell, and one of Frizzell's songs serves as the title tune here. But seven of the songs are new originals, and while some of them sound written out of need rather than inspiration, several others are classic country performances. *If You Hated Me*, with a wistfully bluesy Reggie Young guitar solo, is a quiet Haggard masterpiece. This is Haggard's fifty-second album in eighteen years, and although it's a downer, it's a *wonderful* downer, the kind that makes you say, "Okay, I've bled enough for now; let's get on with it." Overall, a magnificently moving album. *A.N.*

HEART: *Passionworks*. Heart (vocals and instrumentals). *How Can I Refuse; Johnny Moon; Sleep Alone; Blue Guitar; Love Mistake; Allies*; and five others. EPIC QE 38800, © QET 38800, no list price.

Performance: **Spotty**
Recording: **Loud**

A typical Heart album has two or three good songs interspersed with several pieces of tripe sung in a blunderbuss manner and

dominated by clumsy, overrecorded drums. The howlers can be most convincing, however, and in this typical Heart album there are two gems: *How Can I Refuse*, which is credited to the whole band, and the wonderfully constructed *Johnny Moon*, written by Heart's two lead singers, Ann and Nancy Wilson, along with Sue Ennis. *Johnny Moon* is almost a jazz tune in its lengthened breaks, and the vocals are steamily sexy. For the rest of the album, unfortunately, the band plows, plods, and pummels its way through the kind of showbiz stuff its income depends on. The Wilson sisters deserve better of themselves. *J.V.*

JOE JACKSON: *Mike's Murder* (see Best of the Month, page 65)

RICK JAMES: *Cold Blooded*. Rick James (vocals, keyboards, guitar, percussion); the Stone City Band (instrumentals); the Mary Jane Girls, Smokey Robinson, Grand Master Flash, Billy Dee Williams (vocals). *U Bring the Freak Out; Ebony Eyes; P.I.M.P. the S.I.M.P.; Tell Me (What You Want); New York Town*; and four others. GORDY 6043GL \$7.98, © 6043GC \$7.98.

Performance: **Predictably palpitating**
Recording: **Good**

You don't walk away from a Rick James performance humming the melody, because there usually isn't one. But if you are turned on by long, repetitive rhythmic patterns, he won't let you down. On "Cold Blooded" James actually gives us a brief break from

We Sell Every Major Brand of Audio - Video - Home Computers

COMPARE PRICES!



SONY
STRVX 550
Remote Control Unit Extra
\$232

50 watt per channel Direct Access Quartz Tuning Receiver with Remote Capability

MONTHLY SPECIALS

- **AIWA ADM800U**
BELOW DEALER COST
3 motors, 3 head with wireless remote. Limited Quantities **\$299**
- **Audiovox AT21**
Cordless tele² phone w/2-way intercom **\$72**
- **Technics SL6**
Programmable linear tracking turntable **\$153**
- **KOSS K4DS**
Digital time delay system w/speakers **\$218**
- **TDK SA90**
CASE QUANTITIES ONLY **\$2.10**
- **Sony SL2700 & SL5200**
Beta Hifi **CALL FOR PRICE**

- ★ Multi-Million Dollar Inventory
- ★ Most Orders Shipped within 48 Hours
- ★ We Service What We Sell
*Power rates from 20-20KHZ with no more than .08% THD.

TOLL FREE 800-356-9514



C.O.D. Weekdays 9-9 Saturdays 9-5

WDS
WISCONSIN DISCOUNT STEREO
2417 w. badger rd. madison, wi 53713

the funk by including a pleasant near-ballad, *Ebony Eyes*, featuring Smokey Robinson: it does not, however, go well with James's gaudy, drag-queen image. There is also a perfectly dreadful track called *Tell Me*, which exploits actor Billy Dee Williams's much touted sex appeal and features him in a narration that sounds more like a bad parody. I don't know why James felt a need to include guest performers on this album, for he could certainly have performed as well himself. It is not always apparent, but beneath that make-up and wig, behind the glitter and funk, hides a talent we only rarely get a glimpse of.

James's instrumental contingent, the Stone City Band (which now also has its own album) sounds hot, and with a Princely vocal assist from the Mary Jane Girls (James's answer to Vanity 6) it's all quite functional, so to speak. This is not exactly a classic release, but "Cold Blooded" is a hot album, and that spells money. Objective attained, I suppose. C.A.

PAUL KANTNER: *The Planet Earth Rock and Roll Orchestra*. Paul Kantner (vocals, guitars); Grace Slick (vocals); other musicians. (*She Is a Telepath*; *Circle of Fire*; *Mount Shasta*; *Lilith's Song*; and six others. RCA AFL1-4320 \$8.98, © AFK1-4320 \$8.98.

Performance: **Interplanetary bombast**
Recording: **Very good**

Here's an album that raises an unpleasant question: Was the original Jefferson Air-

plane really that great, or were we all just too stoned to tell? If you're expecting this record to be a return to the psychedelic glories of decade-old Kantner and Slick albums such as "Sunfighter," you're going to find it somewhat disappointing. The man who made the very first Hugo Award-winning science-fiction record now offers nothing more visionary or interesting than the arena-rock sludge that is his current band's stock in trade. While it's nice to hear Kantner and Slick's soaring harmonies again (and so prominently), this all sounds intolerably retro to me. Of course, so does nearly everything on the radio at the moment. Given a pop climate in which Journey remains the biggest concert draw in America, I probably have no right to carp about Paul Kantner's attempt to duplicate that sound. Still, this is emphatically not recommended for aging flower children. S.S.

THE MOODY BLUES: *The Present*. The Moody Blues (vocals and instrumentals). *Blue World*; *Meet Me Halfway*; *Sitting at the Wheel*; *Going Nowhere*; *Hole in the World*; *Under My Feet*; and four others. THRESHOLD TRL-1-2902 \$8.98, © TCR4-1-2902 \$8.98.

Performance: **Good**
Recording: **Excellent**

For a band that seemed to have no future five years ago, the Moody Blues seem pretty robust in "The Present." It's fitting that this band has survived to see rock enter the age of technology, which they presaged

more than a decade ago with fanciful flights into the Cosmos while the rest of the rock world was wearing blue jeans and figuring out how many ghetto kids could be fed on the money Uncle Sam spent putting one man into orbit. Now it's 1984, Major Tom is back, synthesizers hold sway, and even though the future isn't as touchy-feely as the Moodies imagined it, they can still say "I told you so."

"The Present" finds the group doing what it does best: spinning rich, harmonically ornate magic carpets of sound that float dreamily above the real world. It is a better record, even, than their surprisingly successful comeback album, "Long Distance Voyager." Focus on any part—Justin Hayward's economical yet rocking guitar, Patrick Moraz's rhapsodic synthesizer, the music-of-the-spheres vocals, even Graeme Edge's sober drumming—and you begin to understand how hard this band works to create their sonic tapestries. Songs such as *Blue World*, *Meet Me Halfway*, and *Sitting at the Wheel* are masterpieces of harmony, balancing acoustic- and electric-guitar voicings and a wash of synthesizer with a strong rhythmic edge to flesh out the sensuous arrangements. Forget about the lyrics or anything not written by Hayward or John Lodge. (Graeme Edge, with the blubbering *Going Nowhere*, and Ray Thomas, the perpetrator of *I Am* and *Sorry*, once again prove themselves incapable of writing a song with backbone. These two don't compose; they snivel.) Just lean back, set the controls for the Milky Way, and blast off

illinois audio

SAVE MONEY • TIME • FREIGHT ON NAME BRAND STEREO





CASSETTE TAPES

SONY UCXS-90 NEW HIGH BIAS TAPE	\$26.00/10
SONY FECR-90 HIGH BASIS PREMIUM	20.00/10
SCOTCH XSM-IV 90 NEW METAL SPECIAL!	35.00/10
TDK MA-90 METAL CASSETTE TAPE	49.50/10
TDK SA-90 SUPER AVILYN TAPE	22.00/10
TDK SAX-90 DOUBLE COATED SA TYPE	32.00/10
TDK AD-90 NEW AUDUA TAPE	19.00/10
TDK D-90 LOW NOISE TAPE	15.00/10
BASF PRO II-90 CHROME TAPE	22.00/10
MAXELL UD-90 ULTRA DYNAMIC	25.00/12
MAXELL XL-90 TYPE I OR II	31.00/12
MAXELL XL-S 90 TYPE I OR II	40.00/12

AUDIO TECHNICA

V-15 TYPE 5	\$120.00	MODEL AT-125LC	\$45.00
V-15 TYPE 4 or LT	\$60.00	MODEL AT-140LC	60.00
M 111HE Reg. & P Mount	\$50.00	MODEL AT-122LP	41.00

\$3.00 Minimum Freight on Cartridges & Tapes
CALL FOR JENSEN, SONY AND SANYO AUTOMOTIVE

COMPONENTS

AKAI GXF-51 COMPUTER CONTROLLED CASS DECK	229.00
AKAI GX-7 NEW CASS. DECK IN STOCK!	CALL
ADC SS-20 12 BD PER CH. EQUALIZER SPECIAL!	176.00
ADC SS-3 IC TOP OF THE LINE EQUALIZER SPECIAL!	227.00
JVC RX-60 55/55 PER CH DIGITAL RECEIVER	215.00
JVC KDV-40 DOLBY B & C, AUTO-REV. CASS. DECK	WRITE
JVC SKS-44 12", 3-WAY SPEAKER SPECIAL (EACH)	67.50
JVC PC-11 4 PIECE PORT. COMPONENT SYSTEM	210.00
KENWOOD KR-820 DIGITAL RECEIVER SPECIAL!!	151.50
KENWOOD KR-950 NEW DIGITAL RECEIVER IN STOCK!	CALL
MARANTZ SR-8100 SUPER RECEIVER DEAL	SPECIAL
SANSUI Z-7000 DIGITAL RECEIVER FINAL SALE!	450.00
SANSUI AUD-9 HIGH POWERED INTEGRATED AMP	399.00
SONY TC-FX45 NEW DOLBY B & C CASS. DECK	160.00
SONY STR-VX 550 NEW DIGITAL RECEIVER IN STOCK!	CALL
SONY WM-5 PERSONAL PORT. CASSETTE DECK SPECIAL	66.00
TEAC V-2RX 3-HD. 2-MOTOR, dbx@ CASSETTE DECK	309.00
TECHNICS SL-5 LP SIZE, LINEAR TRACKING TURNTABLE	124.50
TECHNICS SL-QL1 FULL-SIZE, BLACK, LINEAR TRACK.TT.	240.00
TECHNICS RSM-235X DOLBY B,C & dbx@ CASS. DECK	180.00
JENSEN RE-518 IN-DASH, AUTO-REV. ELECT TUNING	239.00
JENSEN J-1069 6x9, CO-AX CAR SPEAKERS.(PAIR)	42.00
TOSHIBA KT-VS-1 AM-FM, CASSETTE, PERSONAL PORT.	72.00
CD PLAYERS! NOW IN STOCK, AT LOW PRICES!	CALL OR WRITE

SEE A BETTER PRICE? CALL US! WE WANT YOUR BUSINESS!!

Prices and Availability Subject to Change

— send for free price list —

Name _____

Address _____

City _____

State _____ Zip _____

or use your address label

illinois audio




Phone Now
1-312-664-0020

Hours:
10:00-5:00
Mon. thru Sat.

TOLL FREE
1-800-621-8042

12 E. Delaware Pl., Chicago 60611

Stephanie Mills Hits Her Stride



Ron Wolfson/LGI

STEPHANIE MILLS has done some floundering about over the years looking for a way to focus her considerable singing talent. When disco was the rage she tried that, then she attempted to come across as an abrasive punk when the popular mood shifted. Later she sank to the lowest common denominator of funk in a grab for the largest possible audience. But for her new album, "Merciless," she has finally learned to exploit her own special gifts: a wonderfully robust and immediately responsive voice with a delicate shiver at its edge, a marvelous sense of phrasing, and boundless expressiveness. The result is perhaps her best album yet, with a panoply of different emotions conveyed through her finely tuned vocal instrument.

All of Mills's talent bubbles up to the surface here in *Endless Love*, a ballad with a bittersweet tang that recalls songs by Jacques Brel and Edith Piaf. As with all the best singers, Mills does more with this song than just perform it; she uses it to touch her listeners' deepest feelings.

A new steadiness and self-confidence shows throughout the album in the selection of material and pacing. Mills is not afraid to

start out with an off-beat, slow-tempo blues number, *How Come U Don't Call Me Anymore?*, where she gives Aretha Franklin a run for her money. On a lilting little number called *His Name Is Michael* that's similar in theme to Michael Jackson and Paul McCartney's *The Girl Is Mine*, Mills and Peggy Blue sing together as effectively as Jackson and McCartney did. Another highlight is the rakish *Pilot Error*.

"Merciless" suggests, overall, that Stephanie Mills has hit her stride. She's already lived up to her promise as a teen star on Broadway in *The Wiz*, and on the evidence here she could surpass even that in the future. As long as she keeps singing from the heart instead of according to popular formulas, she can't miss. —Phyl Garland

STEPHANIE MILLS: *Merciless*. Stephanie Mills (vocals); vocal and instrumental accompaniment. *How Come U Don't Call Me Anymore?*; *Never Get Enough of You*; *Eternal Love*; *His Name Is Michael*; *Here I Am*; *My Body*; *Do You Love Him?*; *Pilot Error*; *Since We've Been Together*. CASA-BLANCA 811 364-1 M-1 \$8.98, © 422-811 364-4 M-1 \$8.98.

with a band that's turned out to have the Right Stuff after all. M.P.

RECORDING OF SPECIAL MERIT

THE MOTELS: *Little Robbers*. The Motels (vocals and instrumentals). *Where Do We Go from Here*; *Suddenly Last Summer*; *Isle of You*; *Trust Me*; *Monday Shutdown*; and five others. CAPITOL ST-12288 \$8.98, © 4XT-12288 \$8.98.

Performance: **Arresting**

Recording: **Clean**

The first time she walked into my office, I knew this woman would be nothing but trouble. Name? "Martha Davis." Address? "Just say, the Motels." It wasn't exactly love at first sight. She was a big woman with an assured yet surprisingly girlish voice. Fragile, but tough. Somehow she didn't look like the type who could deliver serious rock-and-roll.

Man, was I wrong. By the second time through "Little Robbers," I knew this wasn't just another slick Sunset Strip caper. The way she belted out sizzling rockers like *Trust Me*, *Monday Shutdown*, and *Into the Heartland* . . . well, she bit off those lyrics and spit them in my face like the cap off a bottle of Moxie. The drummer had his hands full keeping up with her. That was my first clue. Then, before you knew it, she was jerking my heart strings with *Suddenly Last Summer*. The way that low, gritty guitar curled around her voice, like a smoke ring around a careless remark. I'm telling you, it was haunting.

Before long, I was hooked. She could be funny (*Little Robbers*, a snappy study in paranoia) or chillingly mysterious (*Where Do We Go from Here*). And that guitar she always had with her—driving, hard-nosed, a heartbeat but also a buzzsaw. I hadn't heard a guitar like that since I stopped taking heavy-metal cases back in '75.

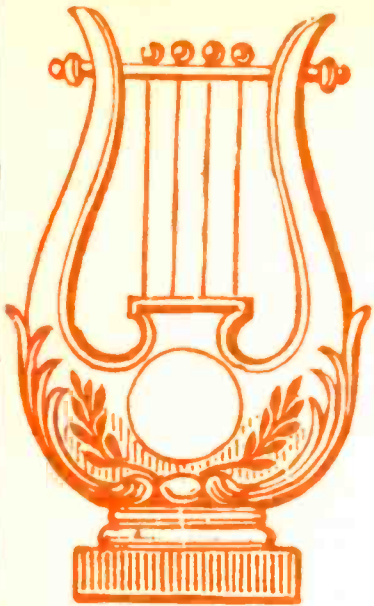
And then she was gone without a trace. Left me with this album. I can't stop playing it. I guess that's one of the risks you take in this business. M.P.

(Continued on page 91)

If we made them look like other loudspeakers... that's all they would sound like.

New PS-8 and PS-10 Point Source Loudspeaker Systems

DCI DESIGN™ ACOUSTICS
An Audio-Technica Company



FREE INFORMATION SERVICE

There's an easy way for you to get manufacturer's information about products advertised or mentioned editorially in this issue. Just follow the directions below...and the literature will be sent to you free of charge from the manufacturer.

a Tear out one of the perforated postage-free cards. Please print or type your name and address where indicated. Use only one card per person.

b Circle the numbers on the card that correspond to the key numbers at the bottom of the advertisement or editorial mention that interests you. (Key numbers for advertised products also appear in the Advertisers' Index.)

c Simply mail the card. One card per person is all that is necessary. No postage is required.

d This address is for our "Free Information Service" only. All other inquiries are to be directed to, Stereo Review, One Park Ave., New York, N.Y. 10016.

FREE INFORMATION SERVICE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160					

4 Please send me 12 issues of Stereo Review for \$4.99 and bill me. (Full subscription price \$9.98)

PLEASE PRINT— Use only one card per person.

SR1843

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

(Zip Code must be included to insure delivery.) Void after March 31, 1984.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160					

4 Please send me 12 issues of Stereo Review for \$4.99 and bill me. (Full subscription price \$9.98)

PLEASE PRINT— Use only one card per person.

SR1842

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

(Zip Code must be included to insure delivery.) Void after March 31, 1984.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160					

4 Please send me 12 issues of Stereo Review for \$4.99 and bill me. (Full subscription price \$9.98)

PLEASE PRINT— Use only one card per person.

SR1841

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

(Zip Code must be included to insure delivery.) Void after March 31, 1984.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT #27346 PHILADELPHIA, PA.

POSTAGE WILL BE PAID BY—

Stereo Review

P.O. BOX 13878
PHILADELPHIA, PA. 19101



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

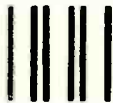
BUSINESS REPLY CARD

FIRST CLASS PERMIT #27346 PHILADELPHIA, PA.

POSTAGE WILL BE PAID BY—

Stereo Review

P.O. BOX 13878
PHILADELPHIA, PA. 19101



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT #27346 PHILADELPHIA, PA.

POSTAGE WILL BE PAID BY—

Stereo Review

P.O. BOX 13878
PHILADELPHIA, PA. 19101



Revised and updated!
Stereo Review's SRT14-A

STEREO TEST RECORD



THE EDITORS AND TECHNICAL STAFF OF STEREO REVIEW PRESENT THE MOST COMPREHENSIVE, ACCURATE, AND EASY-TO-USE TEST RECORD EVER DEVELOPED—REVISED AND UPDATED FROM THE ORIGINAL SRT14 VERSION.

This latest version contains everything you need to get the fullest, most realistic reproduction from your stereo equipment. You can actually perform a complete stereo system checkup by ear alone.

A test lab in a record jacket

Employing the most advanced recording, mastering, and pressing techniques, the Stereo Review SRT14-A is produced to strict laboratory standards. Engraved in its grooves are a series of precisely recorded test tones, frequency sweeps, and pink noise signals that enable you to accurately analyze and check your stereo system for:

- Frequency response.
- Stereo separation.
- Cartridge tracking ability.
- Channel balance.
- Hum and noise, including turntable rumble.
- Wow and flutter.
- Optimum speaker placement.
- Cartridge Tracking Force & Anti-skating.
- Musical Instrument Tuning Standards, and more . . . much more.

Step-by-step instructions

Included with SRT14-A is a detailed instruction manual, complete with charts, tables, and diagrams. It explains the significance of each test. It tells you what to listen for. It clearly describes any aberrations in system response. And it details corrective procedures.

For professionals too

Included on the record are a series of tests that call for the use of sophisticated measuring instruments, such as oscilloscopes, chart recorders, and distortion analyzers. These tests permit the advanced audiophile and professional to make precise measurements of transient response, recorded signal velocity, anti-skating compensation, IM distortion, and a host of other performance characteristics.

SRT14-A record contents

- CARTRIDGE TRACKING, HIGH FREQUENCY
- FREQUENCY RESPONSE, 20 kHz to 25 Hz
- SEPARATION, LEFT-TO-RIGHT
- SEPARATION, RIGHT-TO-LEFT
- CARTRIDGE TRACKING, LOW FREQUENCY
- CHANNEL BALANCE
- CARTRIDGE AND SPEAKER PHASING
- LOW-FREQUENCY NOISE
- TURNTABLE FLUTTER
- FREQUENCY-RESPONSE SWEEP, 500 to 20,000 Hz, LEFT CHANNEL
- FREQUENCY-RESPONSE SWEEP, 500 Hz to 20,000 Hz, RIGHT CHANNEL
- TONE-BURST
- INTERMODULATION DISTORTION
- ANTI-SKATING ADJUSTMENT
- 1000-Hz REFERENCE TONES
- FLUTTER AND SPEED ACCURACY
- STEREO SPREAD
- CHROMATIC OCTAVE
- STANDARD "A"
- GUITAR TUNING TONES

The final step

Start getting the most out of your stereo system. Make the SRT14-A your next record purchase. Just complete the coupon and mail it along with your remittance . . . today!

HERE'S HOW TO ORDER

 CHARGE ORDERS—for your convenience
PHONE TOLL FREE 800-526-0790.
In NJ only 201-540-0445.

CASH: mail your order along with your name, address, and remittance in the amount of \$9.95 (\$11.95 outside U.S.A.) Resident of CA, CO, CT, DC, FL, IL, MA, MI, MO, NJ, NY STATE and VT add applicable sales tax.

CHARGE: your American Express, Visa or Master Charge Account. Mail your order with your name, address, credit card #, and expiration date (Master Charge customers include 4-digit Interbank # above your name). Be sure to include your signature.

ORDER FROM: TEST RECORD, Dept. 30013, CN 1914, Morristown, NJ 07960.

Join Our Exclusive Buying Group for Guaranteed Savings!

Only \$15 a year entitles you to the benefits of international buying. Includes: **THE SOURCE** Newsletter with industry news, new product reviews, and inside information
 ■ \$15 discount coupon ■ Exclusive deals ■ Extended warranties and much more.

SUBSCRIBER	
RECEIVERS	RETAIL COST*
Yamaha R1000	\$700 \$498
Denon DRA-600	\$540 \$398
H/K 670 (60 W/ch.)	\$570 \$199
H/K 450 (30 W/ch.)	\$330 \$118
H/K 340 (20 W/ch.)	\$300 \$98
Sansui Z9000	\$960 \$551
TURNTABLES	
Denon DR-DCOL	\$585 \$389
Sony PSX-800	\$850 \$397
Dual 508-55	\$270 \$117
Sony PSX65	\$400 \$212
PHONO CARTRIDGES	
Ortofon OM 10/20/30	\$36/\$63/\$82
Dynavector 10XIII	\$150 \$82
Fid. Research FR-1MK3F	\$232 \$98
Fid. Research MC201	\$300 \$126
Grace F9C Ruby	\$300 \$143
CASSETTE DECKS	
Nakamichi LX-3	\$595 \$447
H/K 705 (dobby HX)	\$450 \$188
H/K 3500	\$549 \$199
Denon DRF8	\$575 \$399
SPEAKERS	
B&W DM110	\$300/pr \$218./pr.
Mission 700s	\$399/pr \$278./pr.
JBL L212	Call For Quote
CAR STEREO	
Alpine 7138	\$300 Call
Alpine 3502	\$350 \$197
Kenwood KRC-1022	\$650 Call
CD PLAYERS/VIDEO	
Sanyo DA08	\$1,000 \$488
Hitachi DA1000	\$1,000 \$567
Sony CDP101	\$900 \$699
Sony Belamovie	\$1,500 \$1,275
Sony KV4000	\$580 \$399

*All offers subject to availability. \$15.00/yr. subscription fee not included. 20 Nassau St., Princeton, N.J. 08542 609-921-0800

Orders Only Call 1-800-443-HIFI

CIRCLE NO. 22 ON READER SERVICE CARD

STEREO & TAPE OUTLET

Call Toll Free 800-272-1362

CAR STEREO		SONY	
Pioneer KE-6100	199.99	All In Stock	CALL FOR PRICE
Pioneer KE-7200	239.99		
Pioneer UKE-7100	224.99		
Pioneer KEX-65	279.99		
Pioneer KP-A-400	138.99		
Pioneer KP-A500	159.99		
Pioneer KP-A600	164.99		
Pioneer KP-A700	169.99		
Pioneer UKE-3100	179.99		
Pioneer GM-5	53.99		
Pioneer GM-120	109.99		
Pioneer TS-108	45.99/pr		
Pioneer TS-1044K	49.99/pr		
Pioneer TS-1200K	62.99/pr		
Pioneer TS-1633K	53.99/pr		
Pioneer TS-1644	43.99/pr		
Pioneer TS-1655K	83.99/pr		
Blaupunkt BEA-155	139.99		
Blaupunkt Frankfurt	119.99		
Blaupunkt Vancouver	274.99		
Blaupunkt Manhattan	239.99		
Blaupunkt Tucson-BPA-415	449.99		
Blaupunkt Richmond	229.99		
Blaupunkt Seattle	189.99		
Panasonic CQS-768	211.99		
Panasonic CQS-793	219.99		
Panasonic CQS-903	288.99		
Panasonic CQS-788	218.99		
Jensen RE-530	309.99		
Jensen RE-520	251.99		
Jensen RE-512	221.99		
Jensen J-3033	82.99/pr		
Jensen J-1065, J-1365	67.99/pr		
Jensen J-3023	73.99/pr		
Jensen J-1069, J-1369	46.99/pr		
Jensen J-3013	58.99/pr		
Jensen J-3003	49.99/pr		
All JENSEN In Stock			
CALL FOR LOWEST PRICES			

We carry a full line of Car Stereo & Accessories. Sorry, no C.O.D.'s. We accept money orders, cashier's or certified checks, as well as MasterCard & Visa (3% Surcharge) and American Express (5% Surcharge). Personal checks 3 week delay. Shipping to Continental USA 4% of order. Minimum \$4.00. All items have manufacturer's guarantee. Write for our latest FREE CATALOG, NJ, Alaska, Hawaii call (201) 572-1001. Mon-Sat 9AM-6PM.

STEREO & TAPE OUTLET
1849 Route 27, Edison, NJ 08817

CIRCLE NO. 29 ON READER SERVICE CARD

SMOKEY ROBINSON: Blame It on Love and All the Great Hits. Smokey Robinson (vocals); vocal and instrumental accompaniment. *Just a Touch Away; Blame It on Love; Tell Me Tomorrow; Baby Come Close; Cruisin'*; and five others. TAMLA 6064 TL \$7.98, © 6064 TC \$7.98.

Performance: **Silken soul**
Recording: **Quite good**

Smokey Robinson's new Tamla release spans roughly a decade of recording activity. There is nothing rough about the music, however. The so-called Motown sound has long since spread thin beyond recognition, but Smokey's high-pitched voice is intact, and here he delivers three new songs—*Just Like You, Don't Play Another Love Song, and Just a Touch Away*—with as smooth a sound as on the older recordings. The style, too, is the same easy reading that launched Motown twenty-five years ago. This collection may lack the spunk of funk and the steely edge of synthesized New Wave, but it has personality, and as enduring pop fare it will always find attentive ears. Count mine among them. **C.A.**

PETER SCHILLING: Error in the System. Peter Schilling (vocals); instrumental accompaniment. *Only Dreams; Lifetime Guarantee; The Noah Plan; Major Tom (Coming Home); Major Tom, Part II; (Let's Play) USA*; and three others. ELEKTRA 60265-1 \$8.98, © 60265-4 \$8.98.

Performance: **The synthesized man**
Recording: **Very good**

"Error in the System" is a grim study of the death of humanity, of the substitution of order and science for desire and will, of steel and plastic for flesh and blood. Peter Schilling's cold, mechanical synthesized compositions create a vision of man swallowed by his own inventions—computers, television, and other products of technology. *Only Dreams*, for instance, deals with the internalizing of experience, the intellect's retreat from reality, a consequence of an automatized existence that makes no demands on humans other than to watch. In *Major Tom (Coming Home)*, a sequel to David Bowie's seminal *Space Oddity* (although its chorus sounds more like the Moody Blues), an astronaut is carried into deep space, the prisoner of a machine that has failed to respond to a human command.

It is a powerful but troubling and somehow hollow achievement. The album is engineered with razor-sharp, almost sterile precision, as if it had been recorded in a germ-free environment. To add to the inhuman feel, Schilling, who is German, sings in a perfectly unaccented English, much as you'd expect a robot to sound. There is irony in an album that exploits technology in order to convey the theme of man enslaved by machine: by dehumanizing his music, Schilling has re-created the very condition he's trying to warn us about. If you find yourself enjoying it, perhaps that means you've succumbed too. **M.P.**

SISSY SPACEK: Hangin' Up My Heart (see Best of the Month, page 64)

STRAY CATS: Rant n' Rave with the Stray Cats. The Stray Cats (vocals and instrumentals). *Rebels Rule; Too Hip Gotta Go;*

CONSUMERS CO.

TAPES-DISCOUNTS-STEREO
Min. Order—10 Audio or 5 Video Tapes or assorted

SA-90	2.29	TDK	
SA-60	1.95	MAR-90	6.39
SAX-90	3.18	MA-90	4.39
ADX-90	3.15	D-60	.99
		D-90	1.19
		MAGNEX	
XL I OR II 90	2.49	UDC-90	2.25
XL I OR II 60	2.25	LNC-60	1.10
XL I OR II-S90	3.19	LNC-90	1.39
		SONY	
UCX-S-90	2.53	LNK-C60	.89
UCX-90	2.39	LNK-C90	1.10
UCX-60	1.89	LNK-C120	1.99
		FUJI	
FR-METAL C90	4.35	ER-90	2.19
FR I OR II C-90	2.39	DR-60	.99
FR I OR II C-60	1.99	DR-90	1.19
		VIDEO TAPE	
		BETA	
VHS		SONY L500	6.69
TDK T-120	7.55	SONY L750	7.98
TDK T-120 EXHG	9.79	SONY L830	9.65
FUJI T-120	7.85	SONY L750 HG	9.29
FUJI T-120 SHC	9.89	SONY L830 HG	12.75
BASF T-120	7.49	FUJI L500	6.69
BASF T-120 HG	9.79	FUJI L750	8.15
MEMOREX T-120 PRO	7.35	FUJI L500 HG	7.89
SONY T-120	7.55		
		PIONEER	
UKE-7100	224.90	TS-6907	109.90
KEX-50	289.90	TS-6906	94.90
KPA-600	167.90	TS-108	45.90
KPA-700	172.90	TS-1644	51.50
		SANYO	
FTX-180	288.90	FT-C70	154.89
FTX-160	254.90	FT-C48	134.90
FT-V100	149.90	FT-C46	125.90
FT-V90	128.90	PA-6100	109.90
		JENSEN	
RE-530	325.90	J-3023	77.90
J-3033	64.90	J-3013	62.90
J-2020	79.90	J-1279	72.90

All Merchandise Fresh, Manufacturer Guaranteed.

CALL 914-664-2909

Free home delivery use Money Order, Cashiers or Certified Check or credit card. (Add 3% for Credit Card Orders.) Add 5% for shipping and handling (Minimum \$3.50). N.Y. Residents must add sales tax. Personal checks held 2 weeks. Send \$1 for Catalog. Minimum COE Order \$100.

CONSUMERS CO.

P.O. Box 550 Dept. SR 184 Mt. Vernon, N.Y. 10551

CIRCLE NO. 42 ON READER SERVICE CARD

AUDIO and VIDEO

ALL THE TOP BRANDS FOR THE
SAME PRICE
DEALERS PAY

★ SAME DAY SHIPPING
★ NO-LEMON GUARANTEE
★ NO DEPOSIT

CALL OR WRITE FOR OUR
FREE BOOKLET
"ULTRA HI-FI DIGITAL
at HALF THE COST"

9-9 DAILY-TIL 5PM ON SATURDAY
1-301-488-9600



**INTERNATIONAL HI-FI
DISTRIBUTORS, INC.**
MORAVIA CENTER
INDUSTRIAL PARK
BALTIMORE, MD.
21206

CIRCLE NO. 40 ON READER SERVICE CARD

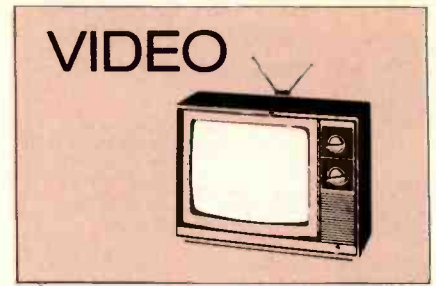
Look at That Cadillac; Something's Wrong with My Radio; 18 Miles to Memphis; How Long You Wanna Live, Anyway?; and four others. EMI AMERICA SO-17102 \$8.98, © 4XO-17102 \$8.98.

Performance: **Good, but . . .**
Recording: **Good**

The Stray Cats are not a genuine rockabilly band. Despite a reasonably authoritative grasp of the genre's musical vocabulary, they're no more a bunch of Southern crackers than the Rolling Stones are a bunch of Delta bluesmen, which is not necessarily a criticism. The question with these three Long Islanders, as with the Stones, is whether they transcend their influences,

whether they've created something new. I don't think so in this case, but I'm willing to remain open-minded and concede that the jury is still out.

In the meantime, though, the Cats do make entertaining, if limited, records, and this new one is no exception. I could do with a little less of the teenage attitudinizing, but songs like *Sexy and Seventeen* swagger attractively. Brian Setzer does terrific Scotty Moore guitar imitations, and, as usual, Dave Edmunds's production couldn't be bettered. Also as usual, I don't get the sense that these guys particularly mean what they're singing, but I suppose if I was fifteen and had never heard "The Sun Sessions" I might feel different. S.S.



RECORDING OF SPECIAL MERIT

DURAN DURAN. Duran Duran (vocals and instrumentals). *Is There Something I Should Know?; The Chauffeur; Careless Memories; Girls on Film; Planet Earth;* and six others. PIONEER LASERDISC PA-83-044 CX stereo, standard-play \$24.95.

Performance: **In the vernacular**
Recording: **Fine video and audio**

I wondered how long it would take before video-disc producers began utilizing the ever-growing number of music videos as source material. Concert footage has the distinct advantage of presenting artists in actual performance, but no matter how interesting the music might be, watching an hour or more of any group miniaturized by the tube easily becomes trying when the actual concert atmosphere is missing. The music can be captured quite vividly with today's technology, but no way has been found so far to reproduce the feeling of being part of the audience at a live performance. Duran Duran has come out instead with a LaserDisc consisting entirely of videos—the group's first eleven, to be exact, filmed on location in England, Antigua, and Sri Lanka. Who cares if it's all lip-synched? The music is good, and the visual accompaniment is even better.

Two of the tracks, *Lonely in Your Nightmare* and *The Chauffeur*, make their debut with this album, and another, *Girls on Film*, here contains the parts that even cable left out. The following for Duran Duran's music probably includes very young people, but some of this material is clearly adult oriented, as a note on the jacket points out. There is some sadomasochism and explicit lesbianism in *Girls on Film* and *The Chauffeur*; frame 18903 is, well . . .

Whether you are a Duran Duran fan or not, this disc will give your imagination plenty to work with. The individual segments are well conceived and crammed with wonderful visual tricks. Compiler Russell Mulcahy has cleverly woven them into a fifty-five-minute whole that bears repeated viewing. You may have seen some of this on cable, but it could not have been reproduced with the same quality. C.A.

RECORDING OF SPECIAL MERIT

A FLOCK OF SEAGULLS: A Flock of Seagulls (vocals and instrumentals). *Wishing (I Had a Photograph of You); Nightmares; I Ran (So Far Away).* SONY stereo Video 45, VHS \$19.95, Beta \$15.95.

Performance: **Glitzy**
Recording: **Good**

I never expected to cotton to this band, but, somewhat tardily, I have. A Flock of Sea-

YOU CALL IT!
Just dial us toll-free and name your price. Give us the chance to meet or beat the best price you can find.
Call Toll FREE!
800-221-0974
(ex. N.Y., AK, HI.)

RECEIVERS	CASSETTE DECKS	VIDEO	VIDEO
Technics SA-510 \$274	Technics RS-M245X \$206	Panasonic PV-1220 \$429	Sony TA-AX44 Call
Technics SA-410 \$196	Technics RS-M222 \$193	Panasonic PV-1320 Call	Sony ST-JX44 Call
Technics SA-810 \$339	Teac V-909RX \$395	Panasonic PV-1520 Call	Technics SU-V303 \$170
JVC RX-44 Call	Teac V-4RX \$255	Panasonic PV-1720 Call	Technics SU-V707 \$235
Sony STR-VX750 Call	Teac V-500X \$205	Panasonic PV-6500 Call	Technics ST-S707 \$170
Sony STR-VX550 Call	Sony TC-FX505R Call	Panasonic PV-957 Call	PORTABLES
Sansui Z-9000X Call	Sony TC-FX600 Call	TURNTABLES	Alwa HS-J300 Call
Akai AA-R42 Call	Akai GX-7 \$260	Technics SL-6 \$158	Sony WM-10 \$81
Akai AA-R22 Call	Akai HX-R5 \$228	Technics SL-QX300 \$146	JVC PC-11 \$219
SPEAKERS	BLANK TAPE	Sony PS-FL77 Call	Panasonic RQ-J20X \$110
Technics SB-L51 pr. \$104	(Sold in carton lots only.)	Sony PS-LX500 Call	Panasonic RX-C45 \$153
Technics SB-L71 pr. \$140	TDK, BASF, Sony, 10/Box.	Sony PS-LX2 Call	Panasonic RX-5085 \$174
Technics SB-X700 Call	Maxell 12/Box.	Technics SL-QL15 \$179	Panasonic RX-F15 \$131
JVC SK-S44 Call	BASF PRO II C-90 \$25	JVC QL-L2 Call	Alwa HS-P02 \$84
Sansui S-930 Call	TDK SAX C-90 \$34	CARTRIDGES	CAR STEREO
PLEASE CALL OR WRITE FOR QUOTES!	TDK SA C-90 \$25	Shure V15-MR Call	Sony XR-65B Call
EQUALIZERS	Maxell UD-XLII C-90 \$44	Shure V15-4 \$69	Sony XR-45B Call
ADC SS-315 \$240	Sony UCX C-90 \$24	Shure M111HE \$45	Jensen RE-530 \$300
JVC SEA-33 Call	Sony UCX-S C-90 \$28	Shure M110HE \$36	Jensen J-3033 pr. \$80
ADC SS-20 \$159	VIDEO TAPE	Shure V15-5-P \$103	CD PLAYERS
Sansui SE-8X Call	TDK, BASF, Maxell or Sony	Ortofon (all models) Call	Technics SL-P10 Call
Technics SH-8055 \$215	T-120 VHS ea. \$8.29	AMPS & TUNERS	Technics SL-P7 Call
Akai EA-G90 \$182		Sony TA-V7 Call	Technics SL-P8 Call

ALL MERCHANDISE IS BRAND NEW & FULLY WARRANTED.
Quantities limited. Prices subject to change without notice.

Call or Write for FREE Catalog!

CALL OR WRITE FOR THE LOWEST PRICES ON OVER 80 MAJOR BRANDS.
Call Toll Free! 800-221-0974 (ex. N.Y., AK, HI.)
Mon. - Sat. 9AM-5:30PM E.S.T.
or CALL 212-253-8888

NIGHT OWL LINE! Call Toll Free! 800-327-1531 Mon. - Fri. 5:30 - 10PM E.S.T.

STEREO CORPORATION OF AMERICA
Dept. 101
1629 Flatbush Ave., Brooklyn, N.Y. 11210
MasterCard VISA

Use your convenient Mastercard, Visa, American Express, Diners Club. Ask about details on COD orders. Money orders accepted. Allow 4 weeks clearance on personal checks

LABELLE

Send \$1 For Our Catalog

CAMERA & STEREO OF MAINE

Prices And Products In Effect Dec. 20-Jan. 20, 1984

NOW AT 2 LOCATIONS:
155 MAIN STREET
BIDDEFORD, MAINE 04005

220 WEST JERICO TURNPIKE
SYOSSET, L.I., NEW YORK 11791
 Call information for phone number

CLOSED SATURDAY
OPEN SUNDAYS
10 A.M.-8 P.M.

FOR MAIL ORDERS **CALL TOLL FREE 1-800-341-0783**

In Maine, Alaska and Hawaii, Call 1-707-283-1401

Call for shipping and handling charges

SONY Walkman Cassette Stereo

\$49.95
 Complete Set

WM10 \$89.95
 WM5 \$79.95
 WM7 \$119.95
 PROWD6 \$239.95

SONY FM Stereo Cassette FM-1

\$77.95
 Complete Set

FM2 \$129.95
 WA33 \$119.95
 WA55 \$129.95
 SRF 80W \$99.95
 SRF 30W \$49.95

TOSHIBA FM Stereo Cassette KT-S3

\$54.95
 Complete Set

KTA-SI \$109.95
 KT-VSI \$79.95

SANYO AM/FM Stereo Cassette MG-31A

\$49.95

MG 10 \$44.95 MG-7 \$24.95
 MG 90 \$69.95 MG-100 \$99.95
 MG 15 \$49.95 MG-1 \$59.95
 MG 12 \$44.95 MG110DT \$109.95
 MG34DT \$89.95 M5550 \$59.95

AIWA AM/FM Stereo Cassette W/Recording & Auto Reverse HS-J02

\$129.95
 Complete Set

HS-T02 \$109.95

TURNTABLES

Technics

SL-5 LINEAR \$109.95
 SL-B100 \$62.95
 SL-B200 \$72.95
 SL-B300 \$82.95
 SL-Q200 \$79.95
 SL-Q300 \$89.95
 SL-QX200 \$139.95
 SL-QX300 \$149.95
 SL-6 \$149.95
 SL-7MD \$199.95
 SL-10 \$399.95
 SL-V5 \$129.95
 SL-DL5 \$129.95
 SL-BL3 \$119.95
 SL-QL15 \$179.95
 SL-B5 \$139.95
 SL-D500 \$169.95
 SL-1200 MKII \$289.95

CALL FOR OTHER TURNTABLE MODELS AND PRICES

PIONEER

PL-2 \$ 62.95
 PL-4 \$ 78.95
 PL-5 \$ 94.95
 PL-88F \$259.95

SONY

PSLX-500 CALL
 PSLX-55 CALL
 PSFL-1 CALL
 PSFL-77 CALL

CARTRIDGES SHURE

DT-15P \$ 39.95
 DT-25P \$ 59.95
 DT-35P \$ 79.95
 V15 TYPE 4 \$ 79.95
 V15 TYPE 5 \$124.95

STANTON

PRO-16 \$ 39.95
PICKERING

TL-2 \$ 29.95

RECEIVERS Technics

SA-110 \$109.95
 SA-210 \$134.95
 SA-310 \$164.95
 SA-410 \$189.95
 SA-510 \$279.95
 SA-810 \$329.95
 SA-1010 \$519.95

PIONEER

SX-202 \$119.95
 SX-303 \$139.95
 SX-7 \$329.95
 SX-8 \$439.95
 SX-40 CALL
 SX-50 \$289.95

Sansui

Z-3000X CALL
 Z-5000X CALL
 Z-7000X CALL
 Z-9000X CALL

JVC

RK-22 \$159.95
 RX-44 \$199.95
 RX-60 \$249.95
 RX-80 \$359.95

NIKKO

NR-320 \$149.95
 NR-700 \$199.95

ALPHA 230 CALL
ALPHA 450 CALL
BETA 30 CALL
BETA 50 CALL
GAMMA 30 CALL

SONY

STRVX-450 CALL
 STRVX-550 CALL
 STRVX-750 CALL

marantz

SR-520 \$209.95
 SR-620 \$269.95
 SR-8100 \$409.95

CASSETTE DECKS Technics

RS-M205 \$99.95
 RS-M224 \$109.95
 RS-M227X \$134.95
 RS-M234X \$149.95
 RS-M235X \$174.95
 RS-M245X \$204.95
 RS-M253X \$289.95
 RS-M222 \$209.95

TEAC

V-400X CALL
 V-707RX CALL
 V-909RX CALL
 V500X CALL

Sansui

D-370 CALL
 D-570 CALL
 D-990 CALL
 D-W9 CALL

J.V.C.

KDV-33 \$149.95
 KDV-40 \$184.95
 KDV-44 \$195.95
 KDW-5 \$209.95
 KDD-50 \$159.95

SONY

TCFX-44 CALL
 TCFX-505R CALL
 TCFX-600 CALL
 TCFX-555 CALL
 TCFX-1010 CALL

PIONEER

CT-4 \$99.95
 CT-5 \$139.95
 CT-30 \$189.95
 CT-50R CALL
 CT-70R CALL
 CT-80R CALL
 CT-90R CALL

AKAI

HX-2 \$159.95
 HX3 \$179.95
 GX-7 \$269.95
 GXF-91 \$487.95
 GX-R5 \$229.95
 GX-R6 \$274.95

EQUALIZERS

ADC-SS-5 \$89.95
 ADC-SS-115 \$159.95
 ADC-SS-215 \$209.95
 ADC-SS-315 \$249.95

SANSUI

SE-8 \$229.95

SONY

SEH-310 CALL
 SEQ-11 CALL

AUDIO SOURCE

EQ-1 \$239.95

BLANK TAPES

VIDEO MAXELL

MAX T-120 \$ 8.49 ea.
 MAX T-120 H.G. X \$10.95 ea.
 TDK-T-120 \$ 8.49 ea.
 TDK-T-120 H.G. \$10.95 ea.
 L-750 \$ 8.45 ea.
 L-750 H.G. \$10.95 ea.

UD-XLIC-90 \$ 2.49 ea.
UD-XLIC-SC-90 \$ 3.19 ea.

SA-C90 \$2.39 ea.
SA-XC90 \$3.39 ea.

MINIMUM ORDER 10 TAPES

VIDEO RCA

SL-2400 VGT-500 \$154.95
 SL-2500 VGT-700 \$179.95
 SL-5200 VJP-170 \$179.95
 SL-2700 VJP-900 \$179.95

VIDEO RECORDERS

PANASONIC JVC

PV-1220 HRD-120
 PV-1220 HRD-225
 PV-1520 HR-7650
 PV-1720 HR-2650
 PV-1720 HR-2650
 PV-6600 GX-N5U
 PK-557 GX-N70U

Call for other models and prices on Hitachi, Quasar, Olympus, Minolta, GE, Akai

TELEPHONES & ANS. MACHINES

UNIDEN PANASONIC

EX-2600 \$139.95
 EX-3000 \$119.95
 EX-4000 \$149.95
 EX-4500 \$169.95
 EX-5000 \$159.95
 EX-6000 \$189.95
 EX-7000 \$149.95

KXT-1505 \$ 99.95
 KXT-1515 \$139.95
 KXT-1521 \$179.95
 KXT-1525 \$189.95
 KXT-1530 \$299.95
 KXT-2010 \$109.95
 KXT-3830D \$169.95
 KXT-3802D \$149.95

KXT-2220 \$119.95
 KXT-2130 \$159.95
 VA-8020 \$199.95
 VA-8030 \$219.95
 TH-1010 \$129.95
 TH-1015 \$ 89.95
 TH-2000 \$159.95

AM/FM CASSETTE CAR STEREO'S CAR SPEAKERS RADAR

PIONEER

KPA700 \$174.95
 KP2500 \$109.95
 KPA400 \$139.95
 KPA600 \$164.95
 KPA500 \$149.95
 UKE3100 \$179.95
 KE5100 \$179.95
 KE6100 \$199.95
 KP7500 \$169.95
 KE7200 \$229.95

JENSEN

RE-530 \$299.95
 RE-520 \$259.95
 RE-518 \$239.95
 RE-512 \$219.95
 RE-508 \$179.95
 R-408 \$179.95
 R-220 \$149.95
 EQA5000 \$89.95
 A-35amp \$49.95

CONCORD

HPL-101 \$149.95
 HPL-118F \$249.95
 HPL-122 \$279.95
 HPL-502 \$189.95
 HPL-504 \$219.95
 HPL-532 \$389.95

CALL FOR NEW MODELS

MITSUBISHI CAR AUDIO

CZ-757 \$249.95
 RX-735 \$209.95
 CZ-727 \$159.95
 RX-707 \$154.95
 RX-726 \$129.95
 RX-723 \$99.95
 RX-909 \$209.95
 RX-755 \$169.95
 CV-23 \$89.95

PIONEER

TS-1633K \$59.95 pr.
 TS-6905 \$74.95 pr.
 TS-6906 \$89.95 pr.
 TS-6907 \$99.95 pr.
 TS-6904 \$49.95 pr.
 TS-T3 \$32.95 pr.
 TS-1655K \$74.95 pr.
 TS-167 \$49.95 pr.
 TS-108 \$39.95 pr.
 TS-1044K \$49.95 pr.

JENSEN

J3033 \$89.95 pr.
 J2020 \$79.95 pr.
 J3013 \$69.95 pr.
 J2037 \$69.95 pr.
 J2054 \$34.95 pr.
 J3003 \$56.95 pr.
 J1242 \$84.95 pr.
 J1065 \$59.95 pr.
 J1401 \$69.95 pr.
 J1405 \$44.95 pr.

Whistler

Spectrum \$229.95
 Z-70 \$79.95
 Q2000 \$199.95
 Q1200 \$119.95
 Intercept \$219.95

Fuzzbuster

Het Model2 \$169.95
 Call For Other Models & Prices

BLAUPUNKT

Seattle \$189.95
 Richmond \$219.95
 Manhattan \$219.95
 CR-3003 \$264.95
 Tucson \$339.95
 Washington \$439.95
 BEA155 \$129.95
 BE-55 \$69.95
 BPA-415 \$89.95

Clarion

4350R \$89.95
 5100R \$119.95
 6300R \$129.95
 5500R \$139.95
 6700RT \$159.95
 8100R \$159.95
 6900RT \$169.95
 6950RT \$169.95
 7500R \$189.95
 8500R \$179.95
 8550R \$179.95

SONY

XR-15 CALL
 XR-25 CALL
 XR-45 CALL
 XR-55 CALL
 XR-65 CALL
 XR-75 CALL
 XR-85 CALL
 XR-100 CALL
 XR-M10 CALL
 XM-120 CALL
 XM-E7 CALL

PANASONIC

CQS-958 \$329.95
 CQS-903 \$289.95
 CQS-818 \$239.95
 CQS-788 \$219.95
 CQS-763 \$209.95
 CQS-747 \$189.95
 CQS-717 \$164.95
 CQS-668 \$129.95
 CY-SG100 \$169.95
 CQS-793 CALL

SANYO

FTV-100 \$159.95
 FTC-1 \$49.95
 FTV-90 \$129.95
 FTC-38 \$89.95
 FTC-120 \$199.95
 FTX-140 \$229.95
 FTX-150 \$249.95
 FTX-180 \$289.95

Send \$1 for your copy of Labelle's catalog, over 300 pages of super buys.

Name _____
 Address _____
 City _____
 State _____ Zip _____

35MM CAMERAS

Canon

AE1 with 50mm 1.8 FD Lens \$179.95
 AE1 PROGRAM w/50mm 1.8 FD Lens \$219.95
 A-1 w/50mm 1.8 FD Lens \$259.95
 SURE SHOT 35M w/Case \$119.95

CASES FOR CANON \$18

MINOLTA

XGM w/50mm f1.7 \$169.95
 X700 w/50mm f1.7 \$219.95
 XG-1 w/50mm f1.7 \$149.95
 X-570 w/50mm f1.7 \$189.95

CASES FOR MINOLTA \$18

PENTAX

K 1000 w/50mm f2.8 \$119.95
 ME SUPER w/50mm f2.8 \$159.95

Super Program w/50mm f1.7A \$249.95

CASES FOR PENTAX \$18

NIKON

FE w/50mm 1.8E \$239.95
 FM2 w/50mm 1.8E \$239.95
 FG w/50mm 1.8E \$234.95
 F3 Body w/Highpoint \$489.95

CASES FOR NIKON \$18

FAMOUS MAKER

80-200mm MACRO ZOOM \$69.95



30 day return policy: All returns must be phoned in for prior authorization. All products must be returned in original factory packaging, clean and unscratched. Do not write, tape, or deface manufacturers original cartons. Please include blank warranty cards. If there should be a problem or a question upon receipt of your order, please feel free to call our customer relations dept. toll free 1-800-328-6800 or write to us

Open Mon. Thru Fri. And Sunday, 9 A.M.-8 P.M. Closed Saturday

These Products Are For Mail & Phone Orders Only • All Merchandise Is New And Guaranteed • Quantities Are Limited And Subject To Availability



And Spangier/Reina Ltd.

The Stones: A New Intensity

THE new Rolling Stones album, "Under Cover," is a nervy release: powerful and even scary at times. I have to admit I didn't think the Stones still had it in them.

It's not a departure, really. A lot of familiar Stones riffs turn up throughout, and while the songs have been dressed up with appropriately up-to-date electronic and percussion effects, you're not likely to mistake, say, *It Must Be Hell* or *Tie You Up* for the work of anybody else. The basic theme of the album, sex and violence, isn't new for the Stones either. What *is* new is the bleak intensity with which these concerns are addressed. If "Under Cover" has a message, it's that chaos has arrived and the only way to survive it is to dig yourself a foxhole, climb in, and hope for the best.

The lead song, *Undercover of the Night*, the first explicitly political piece this band has done since the late Sixties, is particularly spectacular, conjuring up nightmare vistas of unending brutality while the guitars simulate explosions and the sound of machine guns punctuates Charlie Watts's drumming. But most of the rest of the record is on the same level; even the throw-aways don't feel like fluff. This could be considered the real blues album that the Stones have always threatened to make.

There's genuine pain and terror here, and the music seems like a kind of exorcism.

At the same time, if you want to dance to it, you can. This is one of the Stones' best party records ever, especially the almost nonstop rockarama on side two. But it's a party record for a world in flames, a cry of confusion and desperation without even a hint of the drugged-out, tongue-in-chic decadence of some earlier Stones albums.

In short, "Under Cover" is a brutal, uncompromising, possibly even uncommercial piece of work, the hardest shot of the hard stuff the Rolling Stones have given us in far too many years. It may even be a masterpiece. In any case, it is perhaps the first real Eighties record, and if that seems an unlikely achievement for a bunch of middle-aged, jet-setting millionaires—well, stranger things have happened. Whatever it is, however, you should hear it. —*Steve Simels*

THE ROLLING STONES: *Under Cover*. The Rolling Stones (vocals and instrumentals); other musicians. *Undercover of the Night; She Was Hot; Tie You Up (The Pain of Love); Wanna Hold You; Feel On Baby; Too Much Blood; Pretty Beat Up; Too Tough; All the Way Down; It Must Be Hell.* ROLLING STONES 90201-1 \$8.98, © CS 90201-1 \$8.98.

gulls makes the most entertaining schlock pop around these days, and the odd thing is that I suspect it's because of, rather than despite, the band's futurist affectations. It's fairly obvious that the Seagulls know how silly their Flash Gordon by way of David Bowie posturing really is. When you listen past the fashionable wall of synthesizers and sonic glitz on their records, you discover the most unashamed bubblegum rock since the heyday of the 1910 Fruitgum

Company, and the contrast between the surface pomp and the banality at the heart of it is really rather breathtaking. And let us not forget lead singer Mike Score: after all, who can resist a performer whose hairstyle is identical to the helmet Hawkman used to wear in the comic books?

This new video compilation of the Seagulls' work is every bit as seductive as their music. It's flashy and empty, but knowingly so; it says nothing, but says it very well; and

it's resolutely entertaining. The best thing here is *I Ran*, cleverly done as an almost continuous succession of 360-degree pans and edited with a real feeling for the rhythm of the song. But both *Wishing*, the most genuinely affecting number, and *Nightmares*, which finds the boys dressed up as men in white coats, have their moments too. Actually, my only complaint concerns the omission of the recent clip to *It's Not Me Talking*, a big-budget parody of Fifties sci-fi B movies that makes the kitschiness at the core of this band's work fairly explicit. Still, what is here makes very pleasant viewing and listening.

—*Louis Meredith*

RECORDING OF SPECIAL MERIT

GIRL GROUPS: THE STORY OF A SOUND. The Angels: *My Boyfriend's Back*. Frankie Lymon: *Why Do Fools Fall in Love?* The Chantels: *Maybe*. The Marvellettes: *Mr. Postman*. The Shangri-Las: *Leader of the Pack*. The Ronnettes: *Shout*. The Supremes: *Stop in the Name of Love; Back in My Arms Again*. And eighteen others. MGM/UA mono CED MD 100194 \$29.95, VHS cassette MV 600194 \$59.95.

Performance: **Rock heaven**

Recording: **Okay**

Based on Alan Betrock's book with the same title (from Delilah), this video program chronicles a magical era in American pop music, from roughly the late Fifties to the beginning of the British Invasion. It was a time when the Brill Building was pop's Mecca, when there were singing groups in every high-school washroom, and when rock was still innocent: the time of Motown, Phil Spector, and a hundred one-shot groups whose records still resonate in our collective unconscious.

Naturally enough, the emphasis here is on the music. Priceless TV clips by the Exciters, the Ronnettes, Martha and the Vandellas, the Shangri-Las, and the Chantels, to name only a few, are interwoven with fascinating recent interviews with people who shaped the sound of the time, from such backstage figures as songwriter Ellie Greenwich (*Chapel of Love*) to such performers as Mary Wilson of the Supremes. The result is an evocative and often very funny portrait of a time that now seems as remote as the Civil War.

Conventional wisdom has long held that these were culturally barren years, that between the time Elvis Presley was drafted and the Beatles arrived rock-and-roll was at its all-time low ebb. "Girl Groups" rather convincingly helps put the lie to that. It's also so much fun to watch that you probably won't even notice that this is time-capsule stuff, a slice of genuine Americana. I could quibble about the choice of producers interviewed (Shadow Morton remains just a shadow) or about what songs are given short shrift (the unutterably sublime *One Fine Day*), but, given the limitation of an hour's running time, I don't see how it could have been done much better. If the words "da doo ron ron" ever meant anything to you, you're going to *have* to have "Girl Groups." In fact, I can't imagine *anyone* with even a casual interest in rock-and-roll being without it for a moment.

—*Louis Meredith*

JAZZ



MOSE ALLISON: *Lessons in Living*. Mose Allison (vocals, piano); Jack Bruce (bass); Billy Cobham (drums); Eric Gale (guitar); Lou Donaldson (alto saxophone). *Lost Mind; Middle Class White Boy; Your Mind Is On Vacation; Night Club; Seventh Son; Wild Man on the Loose*; and three others. ELEKTRA/MUSICIAN 60237-1 \$8.98, © E4-60237 \$8.98.

Performance: **Good**
Recording: **Excellent**

Mose Allison has been a jazz cult figure since the Fifties, a "hipster" from the era when to be a hipster was avant-garde. Like Jon Hendricks, with whom he shares a talent for satirical lyrics, he is a jazz entertainer. His eccentric piano playing and wafer-thin vocals are acquired tastes, and the targets of his satire (the musician's life, the middle class) are somewhat passé. Yet he remains a skillful and ingratiating performer. This album, recorded live at the Montreux Jazz Festival in 1982, has terrific sound, and Allison puts on a professional, zippy show for an enthusiastic crowd. *J.V.*

RECORDING OF SPECIAL MERIT

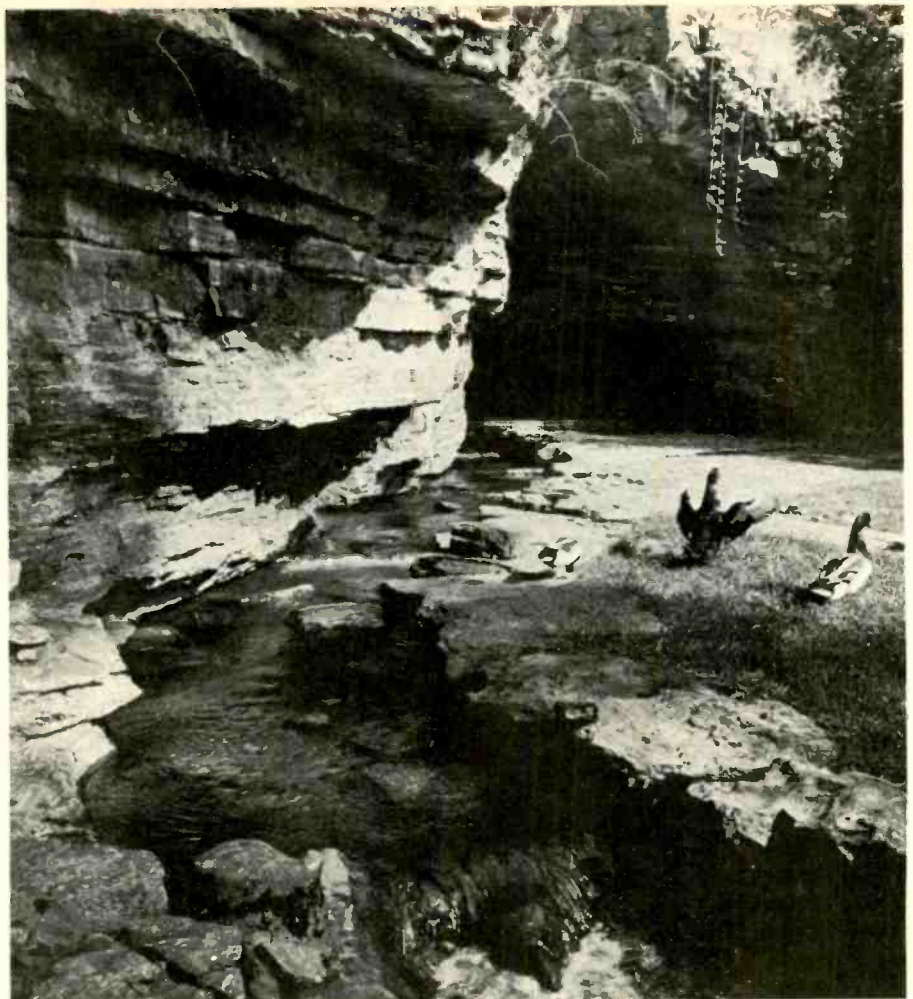
HERB ELLIS, BARNEY KESSEL, CHARLIE BYRD: *Great Guitars at Charlie's Georgetown*. Herb Ellis, Barney Kessel, Charlie Byrd (guitars); Joe Byrd (bass); Chuck Redd (drums). *Where or When; Change Partners; Opus One; Old Folks; Get Happy*; and three others. CONCORD JAZZ CJ-209 \$8.98, © CJ-209 \$8.98.

Performance: **Excellent**
Recording: **Excellent**

Charlie Byrd, Herb Ellis, and Barney Kessel are three very accomplished guitarists. For more than a decade they have operated as a trio with verve and subtlety. Each artist retains his individuality while blending and contrasting their ideas as well as the different sounds of their guitars—Ellis's and Kessel's are amplified instruments, Byrd's is an acoustic gut-string model. The trio also makes excellent, and sometimes surprising, choices of material. Hoagy Carmichael's lovely *New Orleans* is not heard often enough, and the rearrangement of *When the Saints Go Marching In* gives new life to a tune that has been done to death. This album is an exquisite display of talent and taste. It was recorded live with the crisp sound that, in studio or out, we have come to expect from Concord Jazz releases. *J.V.*

RECORDING OF SPECIAL MERIT

LINDA HOPKINS: *How Blue Can You Get*. Linda Hopkins (vocals); Rod Holloway (tenor and alto saxophones); Clora Bryant (trumpet); Art Hillery (organ); Gerald



If you'd like to know more about our water, just write.

A SLIGHT DISTURBANCE of the earth created the Jack Daniel's cave spring some 400 million years ago.

The disturbance, so say geologists, caused a crack in the surface of the earth and allowed a stream of iron-free water to spring up from underground. Luckily, Jack Daniel discovered the stream in 1866 and we've been using it to make our whiskey ever since. Today, a second movement of earth could seal off our water entirely. Which, to a Jack Daniel's drinker, would be no slight disturbance.



CHARCOAL
MELLOWED
DROPS
BY DROP

Tennessee Whiskey • 90 Proof • Distilled and Bottled by Jack Daniel Distillery
Lem Motlow, Prop., Route 1, Lynchburg (Pop. 361), Tennessee 37352

Placed in the National Register of Historic Places by the United States Government.



Darryl Pitt/Reems Ltd

Jaco Pastorius

MOST jazz musicians play in a big band at some point in their careers, usually early on. They hone their chops, learn a little about arranging, and then get out at the first opportunity—for big-band jazz is largely seen as a moribund art form. Jaco Pastorius is trying to do something about that image, and he appears to be succeeding. His second large-ensemble album is "Invitation," which he recorded on tour in Japan (a country that seems to be extraordinarily receptive to swing bands judging from the number of concert albums recorded there). The album is a condensed version for U.S. release of a two-disc set released in Japan in 1982 under the title "Twins I and II." Like bassist/leader/composer Pastorius himself, it's playful, inventive, and energized.

The title cut is straight out of the Stan Kenton book: driving percussion and tricky horn charts that bob and weave beneath a soaring trumpet solo by Randy Brecker. *The Chicken* is served in a tasty Memphis-style soul stew spiced with the Caribbean flavor of Othello Molineaux's steel drum. Side two features the inestimable Toots Thielemans on harmonica, cavorting through Pastorius's flamboyant *Liberty*

City and caressing Duke Ellington's *Sophisticated Lady*, the latter an especially fitting choice for Pastorius since it was a member of Ellington's band, Jimmy Blanton, who practically invented the modern jazz bass.

Having nodded to Kenton and Ellington, Pastorius caps the album with the John Coltrane classic *Giant Steps* and the Gil Evans/Miles Davis tune *Eleven*. Both are parts of medleys: *Steps* rises up in the middle of an electrifying, breakneck Pastorius composition called *Reza*, and *Eleven* is really just a coda to the swinging twelve-bar blues *Fannie Mae*. By referring to so many jazz legends, Pastorius does more than pay homage to some of band music's central figures; he infuses his own music with their spirit. And in so doing, he injects some much-needed life into the sleeping giant of swing. —Mark Peel

JACO PASTORIUS: Invitation. Jaco Pastorius (bass); Word of Mouth Big Band (instrumentals). *Invitation; Amerika; Soul Intro/The Chicken; Continuum; Liberty City; Sophisticated Lady; Reza/Giant Steps/Reza; Fannie Mae/Eleven.* WARNER BROS. 23876-1 \$8.98, © 23876-4 \$8.98.

Wiggins (piano); Calvin Newborn (guitar); Bob Maize (bass); Jimmie Smith (drums); Leonard Feather (piano). *Salty Papa Blues; Born on a Friday; Why Don't You Do Right; Evil Gal Blues; Counting My Tears; I'm Hungry;* and four others. PALO ALTO JAZZ PA 8034-N \$8.98.

Performance: **Pure joy**
Recording: **Good**

Here's the absolutely terrific Linda Hopkins in an almost equally terrific album. "How Blue Can You Get" is not quite a complete show-stopper because of the decision by Leonard Feather, who co-produced

with Herb Wong, to fill most of the album with his own songs. While Feather is a fine writer of blues—most of these date from the Fifties—it would have been nice to hear from some other talents. Nonetheless, Hopkins gives her considerable all to such things as the old Dinah Washington hit *Evil Gal Blues*, the saga of an ugly woman who was *Born on a Friday*, and the classic *Why Don't You Do Right?* She has a wonderful right-on approach to her material, and her freewheeling way with a lyric is a pure joy to hear. She's supported by a fine group of musicians, including the legendary Clara Bryant on trumpet. This is Linda Hopkins's

first album in several years. Why on earth do the great brains of the recording industry let such talent languish? P.R.

ART PEPPER: Art Lives. Art Pepper (alto saxophone); George Cables (piano); David Williams (bass); Carl Burnett (drums). *Allen's Alley; Samba Mom Mom; But Beautiful; For Freddie.* GALAXY GXY-5145 \$8.98, © GXY-5145 \$8.98.

Performance: **Fine Pepper**
Recording: **Good remote**

If you liked "Roadgame" (Galaxy GXY-5142), one of the first Art Pepper albums to be released after his death, you will not be disappointed in "Art Lives," which contains more material recorded at Maiden Voyage, a Los Angeles club, in mid-August 1981. Pepper is in wonderful form, playing far better and with a great deal more zeal than he did on his final dates the following year. Pianist George Cables also shines on all four selections, especially *Samba Mom Mom*. My favorite, however, is a very intense blues called *For Freddie*. C.A.

CARRIE SMITH: Fine and Mellow. Carrie Smith (vocals); instrumental accompaniment. *God Bless the Child; I Cried for You; Don't Explain; Lover Man;* and eight others. AUDIOPHILE AP-164 \$8.98 (from Audiophile Records, 3008 Wadsworth Mill Place, Atlanta, Ga. 30032).

Performance: **Pleasant**
Recording: **Good**

Carrie Smith shines on "Fine and Mellow," a new release that she recorded in 1976. The material consists of songs associated with Billie Holiday, and though Smith's range is limited, she has the good sense to stay within it. Pleasant listening. C.A.

RECORDING OF SPECIAL MERIT

STEVE SMITH: Vital Information. Steve Smith (drums); Dave Wilczewski (tenor saxophone); Mike Stern, Dean Brown (guitars); Tim Landers (bass). *Looks Bad, Feels Good; Questionable Arrivals; V.G.; All That Is;* and three others. COLUMBIA FC 38955, © FCT 38955, no list price.

Performance: **Hard-blowing**
Recording: **Excellent**

If you know Steve Smith at all, it's probably from his stint as a drummer for Journey between 1979 and 1981. "Vital Information" is his recording debut as leader of a jazz fusion group. In the tradition of such drummer-bandleaders as Art Blakey, Elvin Jones, and Billy Cobham, Smith has put together a hard-blowing all-pro session with alumni of the Miles Davis, Cobham, and Jean Luc-Ponty groups.

If it were just a matter of credentials, any five of a thousand jazz musicians could produce a great album. In the case of *Vital Information*, we have good players working with good material—ambitious compositions build around fast tempos, unusual time signatures and key changes, quick exchanges between soloists, and frenetic but uncluttered rhythmic backing. It's a distillation of the best ideas from such electronic jazz pioneers as John McLaughlin, Miles Davis, and the European ECM performers. Recommended. M.P.

Stereo Review 1983 Editorial Index

Prepared by Margaret Lidz

● AUDIO/VIDEO NEWS (Ranada)

Bits of the Future, Feb. 20
Digital-Audio Cassettes, Sep. 30

● EQUIPMENT TEST REPORTS (Hirsch-Houck Laboratories)

Amplifiers and Preamplifiers

Crown Power Line 3 (power), May 38
Kenwood C-1 (preamplifier) and M-1 (power), Feb. 50

Perreux PMF 2150B (power), Apr. 32
Sony TA-F555ES (integrated), Jun. 44
Tandberg Model 3012 (integrated), Sep. 40
VSP Labs Trans MOS (power), Oct. 36

Audio/Video Equipment

Jensen AVS-1500 receiver, Jan. 26
Sanyo VCR 7300 Beta Hi-Fi video-cassette recorder, Dec. 33
Sony SL-5200 Beta Hi-Fi video-cassette recorder, Apr. 29

Car Stereo (Greenleaf and Hirsch)

Alpine Model 7146, Jan. 46; Model 7347, Aug. 22
Blaupunkt CR-3001H, Mar. 26
Clarion 7500R, Jan. 46
Concord HPL-130, Jan. 46
Delco ETR-520, Jan. 46
Delco-GM/Bose Music System, Jun. 32
Fujitsu Ten CR-1134, Jan. 46; CM-6530, Oct. 22
Kenwood KRC-922, May 20
Jensen RE520, Jan. 46; RE530, Jun. 50
JVC KS-R7, Jan. 46
Lear Jet A-15, Jan. 46
Nakamichi TD-1200, Dec. 52
Panasonic CQ-S768EU, Jan. 46
Pioneer UKE-7100, Jan. 46; KE-7200, Nov. 46

Cassette Decks

Aiwa AD-F660, Sep. 37
Akai GX-R6, Nov. 40
Harman Kardon CD91, Mar. 40
Nakamichi Dragon, Apr. 38
Onkyo TA-2035, Jun. 48
Revox B710 MkII, Mar. 31
Sherwood S-6000CP, Jan. 32
Teac Z-6000, Jul. 24
Technics RS-M234X, Dec. 43
Vector Research VCX-800, Feb. 46
Yamaha K-2000, Aug. 42

Compact Disc Players

Akai CD-D1, Dec. 46
Hitachi DA-1000, Jul. 44
Kenwood L-03DP, Jul. 44
Kyocera DA-01, Jul. 44
Magnavox FD 1000SL, Jul. 44
Marantz CD-73, Oct. 27
Mitsubishi DP-101, Jul. 44
Phase Liner 9500, Jul. 44
Sharp DX-3, Jul. 44
Sony CDP-101, Jul. 44
Technics SL-P10, Jul. 44
Toshiba XR-Z90, Jul. 44
Yamaha CD-1, Jul. 44

Headphones

Koss K/20, Jul. 36
Sennheiser MS 100, Nov. 42

Phono Cartridges

Bang & Olufsen MMC 2, May 40
Dynavector DV10X Type 3, Mar. 52
Goldring Electro II, Sep. 52

Receivers and Tuners

ADS Atelier R1, Apr. 44
Denon DRA-300, Sep. 46
NAD 7150, May 25
Onkyo TX-51, Feb. 30
J.C. Penney MCS Series A Model 3285, Nov. 37
Pioneer F-90 (tuner), Oct. 40
Realistic STA-112, Aug. 30
Toshiba SA-R3, Jun. 36
Yamaha R-50, Dec. 36

Signal Processors

Ace Audio Model 4100-X24 (infrasonic/ultrasonic filter), Jan. 42

ADC Sound Shaper Thirty (graphic equalizer/analyzer), May 32
AudioSource EQ-One (graphic equalizer/analyzer), Mar. 46
dbx 4BX (dynamic-range expander), Jul. 30
Fosgate Research Model 101A Tate II Surround Stereo System, Oct. 32

Speaker Systems

Acoustic Research AR8B, Jul. 28
Allison:Seven, Jan. 36
Celestion Ditton F10, Oct. 30
DCM QED, Feb. 28
Design Acoustics PS-10, Sep. 50
Electro-Voice Type 35i, Jun. 40
IMF Professional Monitor, Mar. 39
Infinity RS6, Nov. 44
Jamo CBR 1303, Apr. 40
JBL J216, Aug. 36
KEF Carina II, Dec. 50
Mirage SM-.4/Subwoofer, Nov. 34
Mission 700S, Aug. 29
Snell Type J, Jun. 34
Technics SB-X700, May 31

Turntables

Denon DP-11F, Feb. 44
Hitachi HT-68, Aug. 39
Pioneer PL88F, Jan. 38
Sherwood ST-905, Jul. 38



Lincoln Perry

● TAPE TALK (Stark)

International Cassette Standards, Feb. 24
Reader Questions and Answers, Jan. 22, Mar. 24, May 18, Jun. 28, Jul. 20, Sep. 26, Oct. 20, Nov. 20, Dec. 26

● TECHNICAL TALK (Hirsch)

Closing Pandora's Box, Jan. 24
Do You Hear What I Hear?, Feb. 27
Upgrading Your Stereo System—Part I, Mar. 28; Part II, Apr. 25; Part III, May 23
The Delco-GM/Bose Music System, Jun. 32
Apples and Oranges, Jul. 23
How I Would Choose a Speaker, Aug. 24
Speaker Distortion Measurements, Sep. 35
Dynamic Range and Decibels, Oct. 24
The Myth of Concert Hall Realism, Nov. 31
Phase Shift and Group Delay, Dec. 29

● TECHNICAL FEATURES

Amplifier Buying Guide (Mitchell), Oct. 46
Audio Myths, Twenty-One (Mitchell), Jul. 60
Car Stereo: How Good Is It? (Greenleaf and Hirsch, Jan. 46); New Products at the Winter CES (Greenleaf), Apr. 22; Products and Trends at the Summer CES (Greenleaf), Sep. 28
Cartridge Buying Guide (Hirsch), Dec. 57
Cassette Deck Buying Guide (Stark), Mar. 60
Cassette Recording, How to Make a Good (Ranada), Mar. 71
Compact Discs: Hands on the Digital Disc (Ranada), Apr. 61; CD Player Buying Guide (Ranada), Jul. 57; Answers to Your Compact Disc Questions (Ranada), Nov. 59
Frequency Response (Mitchell), Mar. 66
Gift List (Staff), Dec. 69
Installation of the Month: Oct. 44 (Livingstone), Nov. 48 (Stark)
Jargon! (Bartlett), Oct. 57
New Audio Products: Winter CES (Hodges), Apr. 50; Summer CES (Meyer), Sep. 53

Personal Portable Buying Guide (Berger), Sep. 69

Record Quality: How to Judge a Record Without Playing It (Ranada), May 56

Sound and Your Listening Room (Berkovitz), Aug. 54

Speakers: Ten Tips for Buyers (Livingstone), Aug. 52; A Guide to Exotic Loudspeakers (Hodges), Nov. 50

Speaker Cables (Greenhill), Aug. 46

Styli: How to Clean a Stylus (Ranada), Jan. 58; Understanding Stylus Shapes (Burton), Dec. 60

Tape vs. Disc: Which Sounds Better? (Ranada), Jun. 62

Turntables: Buying Guide (Lofft), May 45; How to Evaluate the Specs (Hirsch), May 54
2008: A Sonic Odyssey (Lofft), Feb. 63
Video Hardware (Meyer), Dec. 74

● BEST OF THE MONTH

Classical

J. S. Bach: *Goldberg Variations*, Jan. 63
Bartók: *String Quartets Nos. 1-6*, May 65
Beethoven: *Spring Quartets Nos. 12, 13, 14, 15 and 16*, Oct. 69; *Piano Sonatas Nos. 4 and 7*, Apr. 67
Brahms: *Vocal Ensembles*, Sep. 81
Cesti: *Orantea*, Mar. 66
Fauré: *Songs*, Oct. 66
Handel: *Hercules*, Dec. 84
Mozart: *The Marriage of Figaro*, Jan. 61; *Piano Concertos Nos. 12, 15, 20, and 21*, Feb. 69; *Opera Arias*, Jul. 70; *Symphonies Nos. 31, 35, 38, 40, and 41*, Sep. 84
Poulenc: *Piano Works*, Jun. 72
Purcell: *The Fairy Queen*, Mar. 82
Rachmaninoff: *Symphony No. 3*, Jul. 67; *Symphony No. 3 and Youth Symphony*, Dec. 86
Reich: *Tehillim*, Feb. 68
Rossini: *The Barber of Seville*, Nov. 69
Schubert: *Piano Sonata in B-flat Major*, Aug. 67
Schumann: *Symphony No. 3*, Mar. 79
Shostakovich: *Symphony No. 5*, May 61
R. Strauss: *Death and Transfiguration*, *Four Last Songs*, Jun. 70

Pogorelich, Ivo: *Ravel's Gaspard de la nuit* and *Prokofiev's Piano Sonata No. 6*, Nov. 73

Popular

Baez, Joan: *Very Early Joan*, Aug. 64
Bofill, Angela: *Too Tough*, Jun. 69
Bryson, Peabo, and Roberta Flack: *Born to Love*, Dec. 86
Captain Beefheart and the Magic Band: *Ice Cream for Crow*, Jan. 64
Clark, Guy: *Better Days*, Nov. 70
Collins, Phil: *Hello, I Must Be Going*, Jun. 71
Fagen, Donald: *The Nightfly*, Mar. 81
Jackson, Michael: *Thriller*, Apr. 67
Little Steven & the Disciples of Soul, Mar. 82
McCorkle, Susannah: *The People That You Never Get to Love*, Sep. 84
The McGarrigles: *Love Over and Over*, May 62
McLaughlin, John: *Music Spoken Here*, May 64
Meyer, Liz: *Once a Day*, Apr. 65
Parker, Graham: *The Real Macaw*, Nov. 73
Reed, Lou: *Legendary Hearts*, Jul. 69
Reeves, Dianne: *Welcome to My Love*, Jan. 62
The Roches: *Keep On Doing*, Feb. 69
Ryder, Mitch: *Never Kick a Sleeping Dog*, Oct. 66
Santana, Carlos: *Havana Moon*, Aug. 67
Simon & Bard Group: *Tear It Up*, Jul. 68
Simon, Carly: *Hello Big Man*, Dec. 83
Tillis, Mel: *After All This Time*, Jul. 68
Utopia, Feb. 67
Williams, Deniece: *I'm So Proud*, Oct. 69
Young, Neil, and the Shocking Pinks: *Everybody's Rockin'*, Dec. 85
ZZ Top: *Eliminator*, Aug. 63

Local Hero, Sep. 82

● GOING ON RECORD (Barter)

The Show Goes On, Jan. 98
Notes on the Cassette, Mar. 56

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Required by 39 U.S.C. 3685)

1. Title of Publication: *Stereo Review*.
a. Publication No. 00391220
2. Date of filing: October 1, 1983
3. Frequency of issue: Monthly
a. No. of issues published annually: 12
b. Annual subscription price: \$9.98
4. Location of known office of publication (*not printers*): One Park Avenue, New York, New York 10016.
5. Location of the headquarters or general business offices of the publisher (*not printers*): One Park Avenue, New York, New York 10016.
6. Names and complete addresses of the publisher, editor, and managing editor: Publisher, J. Scott Briggs, One Park Avenue, New York, New York 10016. Editor, William Livingstone, One Park Avenue, New York, New York 10016. Managing Editor, Louise Gooch Boundas, One Park Avenue, New York, New York 10016.
7. Owner: Ziff-Davis Publishing Company, One Park Avenue, New York, New York 10016; Ziff Corporation, One Park Avenue, New York, New York 10016.
8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None.
10. Extent and Nature of Circulation:

	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
A. Total no. copies printed (<i>net press run</i>)	644,272	678,778
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales	57,471	52,400
2. Mail subscriptions	487,042	521,409
C. Total paid circulation (<i>sum of 10B1 and 10B2</i>)	544,513	573,809
D. Free distribution by mail, carrier or other means, samples, complimentary, and other free copies	18,958	18,840
E. Total distribution (<i>sum of C and D</i>)	563,471	592,649
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	3,035	2,529
2. Returns from news agents	77,766	83,600
G. Total (<i>sum of E, F1 and 2—should equal net press run shown in A</i>)	644,272	678,778

11. I certify that the statements made by me above are correct and complete.

WILLIAM L. PHILLIPS,
Assistant Treasurer

● **SPEAKING MY PIECE (Livingstone)**

- Predictions, Jan. 6
- Twenty-Five, Feb. 4
- Audio/Video Wagner, Mar. 6
- Looking for Audio, Apr. 8
- Gimme Records, May 4
- Choice, Jun. 6
- Gluttony, Jul. 4
- Auditions, Aug. 6
- Software, Sep. 6
- Preferences, Oct. 6
- The Astute Buyer, Nov. 6
- Is Video Musical?, Dec. 6

● **MUSICAL FEATURES**

- Armstrong, Louis, and Roy Eldridge: *Jazz Masterpieces* (Albertson), Feb. 82
- Ashkenazy, Vladimir: Beethoven Symphonies Nos. 5 and 6, Brahms Piano Concerto No. 1, Rachmaninoff Symphony No. 2 and Piano Sonata No. 2 (Freed), Apr. 94; also see Chopin
- Audiophile Records (Weiss), Sep. 79
- Bach, J. S.: *Mass in B Minor* (Lincoln), Jan. 68
- Bagley, Ben: *Kenward Elmslie Visited, Leonard Bernstein Revisited* (Barter), Sep. 116
- Baker, Dame Janet: *Donizetti's Mary Stuart* and Gluck's *Orfeo ed Euridice* (Freed), Jun. 116
- Bandy, Moe: *I Still Love You in the Same Old Way* (Nash), Jun. 78
- Beethoven: *Piano Trios* (Freed), Feb. 86; the *Late Quartets* (Freed), May 68; also see Ashkenazy
- Bell, Delia (Nash), Oct. 74
- Berlioz: *Symphonie fantastique* (Hall), Aug. 92
- Bernstein, Leonard—see Bagley
- Bizet: *Carmen* (Salzman), Dec. 64
- Blakey, Art, and the Jazz Messengers: *Keystone 3* (Albertson), Apr. 88
- Blythe, Arthur, Quintet: *Elaborations* (Garland), Mar. 100
- Bowie, David: *Let's Dance* (Peel), Jul. 86
- Brahms—see Ashkenazy
- British Music for Cello and Orchestra (Hall), Oct. 98
- Bruckner: *Symphony No. 4* (Hall), Jan. 70
- Byard, Jaki: *To Them—To Us* (Albertson), May 78
- La Cage aux folles* (Barter), Nov. 122
- Carter, Elliott: *Night Fantasies*, Piano Sonata (Freed), Nov. 78
- Cash, Johnny: *The Adventures of Johnny Cash* (Coppage), Mar. 102
- Casino Lights* (Garland), Mar. 106
- Champaign: *Modern Heart* (Garland), Jul. 88
- Chapman, Marshall: *Take It On Home* (Coppage), Jan. 80
- Chess Reissues (Vance), Jan. 92
- Chopin: *Piano Music* (Freed), Jan. 72
- Compact Discs (Barter), Sep. 74; Telarc's CD's (Barter), Oct. 90
- Conley, Earl: *Don't Make It Easy for Me* (Nash), Dec. 90
- Deutsche Grammophon Collector's Series (Freed), Jan. 76
- De Lucia, Paco—see McLaughlin
- Digital Cassettes (Albertson), Sep. 76
- Di Meola, Al—see McLaughlin
- Donizetti—see Baker
- Echo and the Bunnymen: *Porcupine* (Peel), Aug. 76
- Electricity: *Language of the Heart* (Nash), Dec. 96
- Eldridge, Roy: *The Early Years* (Albertson), Feb. 82; also see Armstrong
- Elmslie, Kenward—see Bagley
- Etcetera (Freed), Sep. 94
- Feliciano, José: *Romance in the Night* (Albertson), Aug. 84
- Fischer, Annie: *Mozart Piano Concertos Nos. 20, 21, 22, 23, 24, and 27* (Barter), Apr. 96
- Gabriel, Peter: *Security* (Peel), Feb. 74
- Gift List (Staff), Dec. 69
- Gluck—see Baker
- Haden, Charlie—see Zeitlin
- Haggard, Merle, and Willie Nelson: *Poncho & Lefty* (Nash), May 78
- Hancock, Herbie: *Quartet* (Peel), June. 96;
- Future Shock* (Garland), Dec. 102
- Handel: *Messiah* (Salzman), Dec. 114
- Hardin, Gus (Nash), Nov. 92
- Henley, Don: *I Can't Stand Still* (Coppage), Jan. 82
- Janáček: *Jenufa* (Jellinek), Dec. 64
- Jarrett, Keith: *Concerts* (Peel), Jan. 88
- Jennings, Waylon: *It's Only Rock and Roll* and (with Willie Nelson) *Take It To the Limit* (Nash), Aug. 80

- John Renbourn Group: *Live in America* (Coppage), Mar. 110
- Johnson, Jimmy: *North/South* (Albertson), Jun. 82
- Jones, George: *Shine On* (Nash), Sep. 98
- Khan, Chaka (Garland), Apr. 76
- Kodály: *Háry János* (Jellinek), Feb. 90
- LaGrene, Bireli: *15* (Albertson), Jul. 100
- The Light Blues: *Tour de France* (Freed), Nov. 84
- Lipskin, Mike: *Harlem Stride Piano* (Vance), Mar. 108
- Little Shop of Horrors* (Barter), Apr. 91
- The Lounge Lizards: *Live from the Drunken Boat* (Peel), Dec. 98
- Lynott, Philip: *The Philip Lynott Album* (Peel), May 88
- Marley, Bob: *Confrontation* (Peel), Oct. 78
- Marsalis, Wynton: *Think of One*, Classical Trumpet Concertos (Albertson), Sep. 110
- McDonald, Michael: *If That's What It Takes* (Coppage), Jan. 82
- McLaughlin, John, Al Di Meola, and Paco De Lucia: *Passion, Grace & Fire* (Peel), Nov. 96
- Monk, Thelonious: *Live at the Jazz Workshop* and (with Gerry Mulligan) *Round Midnight* (Albertson), Mar. 104
- Mozart: *Requiem, Other Sacred Works* (Salzman); *Così fan tutte* (Lincoln), Dec. 65; also see Fischer
- Mulligan, Gerry: *The Original Gerry Mulligan Quartet* (Albertson), Dec. 104; also see Monk
- Myers, Amina Claudine: *Salutes Bessie Smith* (Albertson), Apr. 84
- Nazareth, Ernesto: *Piano Pieces* (Freed), Dec. 122
- Near, Holly: *Speed of Light* (Nash), Apr. 78
- Nelson, Willie—see Haggard and Jennings
- Newman, Randy: *Trouble in Paradise* (Simels), Jun. 88
- Newton, James (Albertson), Oct. 86
- Offenbach: *Eight Operettas* (Jellinek), Jul. 78
- On Your Toes* (Reilly), Nov. 118
- Original Jazz Classics (Albertson), Jul. 102
- Ousset, Cécile: *French Piano Music* (Freed), Aug. 100
- Panufnik: *Symphony No. 8, Other Orchestral Works* (Salzman), Jul. 82
- The Police: *Synchronicity* (Peel), Sep. 102
- Prokofiev: *Piano Sonata No. 6* (Freed), Jul. 76
- Rachmaninoff—see Ashkenazy
- Rameau: *Anacron* (Lincoln), Mar. 88
- Richie, Lionel (Garland), Feb. 78
- Ronstadt, Linda: *Get Closer* (Coppage), Feb. 76
- Rossini: *Mosè in Egitto* (Freed), Mar. 90
- Say Amen, Somebody* (Garland), Aug. 88
- Schubert: *Symphonies Nos. 3, 5, 8, and 9* (Hall), Apr. 98
- Seeger, Bob, and the Silver Bullet Band: *The Distance* (Peel), Jun. 92
- Serkin, Peter—see Chopin
- Sessions: *Symphony No. 7, Divertimento and Concerto for Orchestra* (Salzman), Jul. 82
- Smetana: *The Bartered Bride* (Jellinek), Mar. 92
- Stewart, Billy: *The Greatest Sides* (Simels), Apr. 80
- Stone, Sly: *Ain't But the One Way* (Vance), Jul. 96
- Stravinsky: *Pulcinella, Concertino, Dumbarton Oaks Concerto* (Salzman), Jun. 102
- Szymanowski: *String Quartets* (Freed), Dec. 108
- Thin Lizzy: *Thunder and Lightning* (Peel), Oct. 82
- Thompson, Richard: *Hand of Kindness* (Simels), Oct. 84
- Three Dog Night: *It's a Jungle* (Vance), Dec. 94
- U2: *War* (Peel), Aug. 82
- Verdi: *Falstaff* (Barter), May 73; *Nabucco* (Jellinek), Sep. 88
- Video Discs and Tapes: *Pioneer LaserDiscs* (Livingstone), Sep. 77; *Video Software* (Albertson), Dec. 78
- Wagner: *Tristan und Isolde*, Apr. 110 (Jellinek), Dec. 66 (Freed)
- Wallace, Bennie: *Big Jim's Tango* (Albertson), Nov. 110
- Watkinson, Carolyn: *Recital at Wigmore Hall* (Jellinek), Nov. 86
- Watson, Gene: *Sometimes I Get Lucky* (Nash), Jul. 98
- Wilson, Carl: *Youngblood* (Vance), Sep. 104
- The Young Lions (Albertson), Aug. 86
- Zappa, Frank: *Zappa, Vol. 1 and The Man from Utopia* (Peel), Nov. 102
- Zeitlin, Denny, and Charlie Haden: *Time Remembers One Time Once* (Albertson), Nov. 116

STEREO REVIEW CLASSIFIED

CLASSIFIED RATES: Per Word, 15 Word Minimum. **COMMERCIAL:** \$4.60. **EXPAND-AD:** \$6.90. **PERSONAL RATE:** \$2.75. Ads set in all Bold Type @ 20% Premium. Ads set with Background screen @ 25% Premium. **DISPLAY:** 1" x 2 1/4", \$560.00. 2" x 2 1/4", \$1120.00. 3" x 2 1/4", \$1,680.00. **GENERAL INFORMATION:** Frequency rates and prepayment discounts available. Payment must accompany order except credit card—Am. Ex., Dirers, MC, VISA (include exp. date)—or accredited ad agency insertions. Copy subject to publisher's approval; must be typewritten or printed. First word set in caps. Advertisers using P.O. Boxes **MUST** supply permanent address and telephone number. Orders not acknowledged. They will appear in next available issue after receipt. Closing date: 5th of the 2nd month preceding cover date (e.g., Mar. issue closes Jan. 5th). Send order & remittance to: Classified Advertising, **STEREO REVIEW Magazine**, 1 Park Avenue, New York, NY 10016. To charge your ad to a major credit card, call Lols Price at (212) 725-7226. For customer service, call (212) 725-4312.

EQUIPMENT

EMPIRE SHURE

DIAMONDS ARE NOT FOREVER!

A worn stylus can do damage to your priceless record collection. It is more economical to replace your stylus periodically (every 500-600 hours) than to ruin your records — especially at today's prices!

We are specialists and carry in stock **FACTORY ORIGINAL REPLACEMENT STYLUS** for most of the popular lines.

For those with new Technics turntables we have P-mount cartridges in stock from \$14.95 & up.

Call Toll Free
1-800-221-0906
N.Y. (212) 871-3303

Full Price Cartridges & S.C. Order
(800) 221-0906
N.Y. (212) 871-3303

Full Price Cartridges & S.C. Order
(800) 221-0906
N.Y. (212) 871-3303

audio-technica

BEST IN THE WEST! Haffler, Nakamichi, Dahlquist, DCM, Magneplanar, Beveridge, APT, Threshold, Polk, Oracle, Bang & Olufsen, B&W, Adcom, Rocky Mountain HI-FI, 812 Central, Great Falls, MT 59401. (406) 761-8683.

CABLE TV CONVERTERS & EQUIPMENT. Plans and parts. Build or buy. For more information send \$2.00: C & D ELECTRONICS INC., P.O. Box 21, Jenison, MI 49428.

FREE CATALOG—LOWEST DISCOUNT PRICES on Stereo/esoteric components and accessories for the home and car: Sony, Bose, JVC, AR, SAE, other "high quality" brands. **AUDIO UNLIMITED**, 1798A Technology Drive, San Jose, CA 95110. (408) 279-0122, 1-6, M-Th.

ATTENTION HAFLER AND DYNACO OWNERS: We build new higher performance circuits in Hafler and Dyna audio components. Not "modifications", but new PC cards and stable, non-slewing circuits that drive real world loads with music signals. Write or call for free catalog and sample of our monthly newsletter, Audio Basics. Jensens Stereo Shop, 2202 River Hills Drive, Burnsville, Minnesota 55337. (612) 890-3517.

QUALITY USED AUDIO EQUIPMENT! Newsletter; hundreds of listings, items for sale, items sought, published 6x annually. \$8 one year subscription. Hard to find audiophile records! Play it Again Sam, 12611-SR, Madison Avenue, Lakewood, Ohio 44107. (216) 228-0040. MC, Visa.

WOOFERS-MID-TWEETERS-X-OVERS. THE BEST SELECTION AND PRICES and now TOLL-FREE ORDERING. 1-800-221-0251 (orders only-min. order \$25.00). ALL new 32 page Catalog with kit plans, polypropylene woofers and complete technical specifications. C.O.D. orders accepted. For 1983 catalog send \$1.00 to: SRC Audio, Dept. SR, 3238 Towerwood Dr., Dallas, TX 75234, (214) 243-4145.

FREE SPEAKER CATALOG! Woofers, mids, tweeters, hardware, crossovers, grille cloth, plans, kits, information, much more. Discount prices! **UNIVERSAL SOUND**, Dept SR, P.O. Box 36052, Sarasota, FL 33583. (813) 953-5363.

FREE! 1984 CATALOGUE. 1001 bargains. Speakers-parts-tubes-video cassettes—record changers—tape recorders—kits. **EVERYTHING IN ELECTRONICS.** Write: McGEE RADIO & ELECTRONICS, 1901 McGee Street, Kansas City, MO 64108-1891.

1-800-431-3232

audiofon

BROOKLYN, N.Y. 11218

P.O. BOX 37

PIONEER

SHURE

audio-technica

SENNHEISER

AUDIO TECHNICA

NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
GENUINES lowest prices, +CARTRIDGES +MICROPHONES, COD OK. **CALL: audiofon 800-431-3232, (212) 438-6400 Mon-Fri 10AM-7PM FOR CONSULTATION & TO ORDER.**

HIGH-END SPEAKER KITS, raw drivers and auto speaker systems from the world's finest manufacturers. For beginners and audiophiles. Audax, Dynaudio, Dalesford, Jordan, JVC, SEAS, Morel, Siare, Peerless. Free price list. **A&S SPEAKERS**, Box 7462S, Denver, CO 80207. (303) 399-8609.

HAFLER IN STOCK TRADES ACCEPTED. Morel Electronics, 57 Park Place-SR, New York, NY 10007. (212) 964-4570.

AUDIO DISCOUNTS offers quality audio equipment including esoterics and car stereo at **DISCOUNT PRICES!** Monday thru Saturday call: (301) 593-8833. **AUDIO DISCOUNTS**, 1026 McCeney, Silver Spring, MD 20901. VISA, M/C, C.O.D. for your convenience.

FREE SPEAKERKIT CATALOG, 17 proven designs. Also, 40 pages on 400 components. (JBL, ribbons, polypropylenes) \$2. **GOLD SOUND**, Box 141SR, Englewood, CO 80151. (303) 789-5310.

CALL TOLL FREE 1-800-826-0520 for Acoustat, Dahlquist, NAD, Denon, Thorens, Hafler, DBX, Tandberg, VSP, Grace, Grado, Dynavector, 3D, B&W, Proton, Belles, Snells, Nitty Gritty, Stax, Sota, Perreaux, Astatic Oracle, M&K, CWD, Audioquest, Amber. **THE SOUND SELLER**, 1706 Main St., Marinette WI 54143, (715) 735-9002

NAKAMICHI Shamefully Low Prices. New and used. BX-2, LX-3, LX-5, ZX-7, ZX-9, Dragon. **AudioWorkShop**, (206) 323-4987.

PEOPLE WHO KNOW STEREO BUY THEIR SOUND DIRECT. Now YOU can buy the finest in hi-fidelity components, including esoterics and auto sound, at unheard of prices. **DIRECT SOUND MARKETING** provides sensible, expert advice, **INHOUSE SERVICE FACILITIES** and factory fresh components on an in stock basis. Discover Americas best kept audio secret. Send for our free catalogues to: **DIRECT SOUND MARKETING**, Dept. S, 3085 Bolling Way, Atlanta, Georgia 30305 or call (404) 233-9500. M/C, VISA, AMEX accepted. Sales tax charged to Georgia residents only.

SONY DIGITAL: CDP-101, PCM-70les, PCM-F1: HAFLER, PS AUDIO, ACOUSTAT, PYRAMID, GRADO, STAX, DYNAVECTOR, dbx, THORENS. Authorized dealer, free shipping (617) 547-2727. Q Audio, 95 Vassar, Cambridge, MA 02139. Buy-sell-trade-consign new/used. MC/VISA/AMEX. COD ok.

MONSTER CABLE at LOWEST, LOWEST prices cut to any length. We carry all Monster Cable accessories. Hafler, Precision Fidelity, Systemdek, Grado, Thorens, C.J. Walker, DCM, Alpha I cartridge, MAXELL UDXL II C90, \$1.78 each, including rebate minimum of 12. Call or write for other great prices. \$3.00 shipping charge. MC/VISA. Trolly Stereo, 451 Moody St., Waltham, MA 02154. (617) 924-3336.

CLEARANCE SALE! FONS MARK I turntables. As Is Where Is. \$75.00 each, 2/\$130.00. Lot prices available. Colorado residents add tax. Lord Brothers. P.O. Box 6430, Denver, CO 80206. (303) 534-7590.

ATTENTION SOUTHERN AUDIOPHILES: Nakamichi, Polk Audio, Dahlquist, Carver, Ortofon, Jensen, Fulcrum, Proton, NAD, Yamaha. **SOUND ADVICE**, Village Plaza, Ruston, LA 71270, 318-255-8000.

MUSIC LOVERS AND AUDIOPHILES! We are proud to announce the **GRAND OPENING** of "APPLE AUDIO", featuring the finest such as: ADS, Amber, Audio Pro, Audio Control, Beyer, Blaupunkt, Celestion, Dynavector, Grace, Grundig, GEM, Last, Monster Cable, Sherwood, Sumiko, Sony, Thorens, 3D Acoustics, Ortofon, Ungo Box and more! Professional installations on Car Audio and Alarms. **FREE SHIPPING** in USA. Feel free to call for information. Open 7 days. 220 Volta Electronics for overseas also available. **APPLE AUDIO**, 74-18 37th Ave., Jackson Heights, NY 11372. **EXIT BROADWAY/ROOSEVELT ON BQE (278)**. MC/VISA, Tel: 212-507-0561.

BEST PRICE & IN STOCK! Perreaux, Bedini, Acoustat, ARC, Thorens, RGR, Hafler, Onkyo, Technics, B&W, Meridian, Vandersteen, Dynavector, Snell, Tascam, Sponder, Bryston . . . P.K. Audio, 4773 Convention St. Baton Rouge, LA 70806 (504) 924-1001.

COMPACT DIGITAL DISC and PLAYERS, HAFLER, FRIED kits, SONY, NAKAMICHI, KLIPSCH, ACOUSTAT, SAE, CARVER, MITSUBISHI, PROTON, more. Immediate, FREE shipping! **READ BROTHERS STEREO**, 593-C King Street, Charleston, South Carolina 29403. (803) 723-7276.

NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
NEEDLES! NEEDLES! NEEDLES! NEEDLES!
GENUINES lowest prices, +CARTRIDGES +MICROPHONES, COD OK. **CALL: audiofon 800-431-3232, (212) 438-6400 Mon-Fri 10AM-7PM FOR CONSULTATION & TO ORDER.**

The Lowest Price on Stereo Advice

An inexpensive phone call gets you the facts that make choosing a stereo easier. See how helpful professional personal attention can be.

Then, when you've compared equipment, compare stores. We have a super selection, fast free delivery, installation for a small charge and extended store warranties that include free pick up. We'll call to our low prices and you get real stereo value in fact. If you can prove that an authorized dealer offers the same product for less within 30 days of your purchase and has the same services, we will refund you the difference. Stop in or call **SOUND STAGE** today for friendly, money-saving advice.

Call: 212 762-3220 Ask for our FREE 24-page catalog.

ADD	ALPINE	DEWOW	PROTON	THE UNGO BOX
F&S	GRACE	CARVER	MITSUBISHI	B&O & OLUFSEN
NES	AMBER	LUSKIN	AUDIO-PRO	BOSTON ACoustics
DCB	NAD	ALLISON	BLAUPUNKT	CHAPMAN SECURITY
NAD	ADCOM	JENSEN	GRAND	PHILIPS TRASCAM
SONY	HITACH	PANASONIC	3D ACoustics	MEDCO HOOD LIDES

184-10 Horace Harding Expwy
Fresh Meadows, NY 11365
Exit 25 L.I.E., Utopia Pkwy

On premier car stereo and alarm installation. Also custom car stereos.



DYNACO OWNERS: 60,000 LBS parts/accessories/kits. Advent, Audio Control, Celestion, Marantz, others. **FREE CATALOG.** SCC, Box 551 (SR6X83), Dublin, Ohio 43017, (614) 889-2117.

RCA

BEAT PRICING On The Best Names In Video/Home & Car Stereo/Computers. **Over 400 Lines - MC & Visa/COD's Ok.** Catalogue. Color Literature. **THE STEREO FACTORY** 1010 10th Street East Huntington, WV 25705 (304) 522-8031

PIONEER

ADVENT RECEIVERS—Model 300, 15/15/W. \$199.90, model 350, 50/50/W. \$299.00 3 different direct-to-disc \$15.00 postpaid. Warranty. SCC, Box 551 (SR1183), Dublin, OH 43017. (614) 889-2117. MC/VISA/COD.

PHILIPS, AUDAX, PEERLESS, FOCAL, AND DYNAUDIO LOUDSPEAKERS in stock with good prices and competent service. Crossover components also. MADISOUND SPEAKER COMPONENTS, 8982 Table Bluff, Box 4283, Madison, WI 53711. (608) 767-2673.

ELECTRACRAFT features Aiwa, Audio Control, B&O, Concord, Dahlquist, DCM, Denon, Grado, Hafler, Linear, Mitsubishi, NAD, NEC, Signet, Snell, Spectrum, Tandberg, Thiel. ELECTRACRAFT, 212 North First Avenue, Sandpoint, ID 83864 (208) 263-9516.

DISCOUNT CAR STEREO 30 DAY MONEY BACK GUARANTEE

PRICES TOO LOW TO LIST
MANUFACTURER'S NAMES

NEW BREED MOST MAJOR BRANDS FOR PRICES AND INFORMATION
800-645-6607
NY (516) 665-6670
P.O. Box 10111 • Bay Shore N.Y. 11705

MIRAGE, 3D, SNELL, SPICA, HEYBROOK, RGR, Amber, Perreux, Counterpoint, A.A.D., Robertson, Dynavektor, Grado, Audioquest, MAS, Walker, Thiel, etc. Audio File, 1202 South Congress, Austin, Texas 78704. (512) 443-9295.

TATE II SURROUND STEREO SYSTEM. 3 dimensional realism from stereo audio/vision sources. Winner of 1982 Hi-Fi Grand Prix. Fosgate Research Incorporated, 215 W. Leroux, Prescott, AZ 86301, (602) 445-6999.

AUDIO DEN, call us for our service, our experience, and especially our prices. We carry Adcom, Audio Research, Denon, Infinity, Kilpsch, Nakamichi, Polk, SAE, Thorens. We ship anywhere in the USA. Experienced with overseas sales. AUDIO DEN LTD., Smith Haven Plaza, 2021 Nesconset Highway, Lake Grove, New York 11755. (516) 360-1990.

Electrified Discounters

203-937-0106

Lowest Possible Prices !!

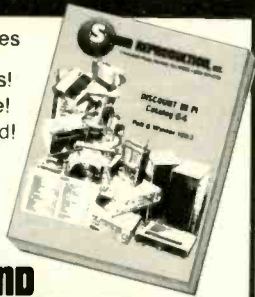
AUDIO VIDEO CAR PRODUCT
COMPUTERS — (HARDWARE - SOFTWARE)

996 ORANGE AVE.
WEST HAVEN, CT. 06516



FREE 40 PAGE HI-FI DISCOUNT CATALOG No.64

- Lowest prices on audio components!
- Fast service!
- Fully insured!
- In factory sealed cartons!



**SOUND
REPRODUCTION, INC.**
(201) 227-6720
7 Industrial Road, Fairfield, N.J. 07006

B&K COMPONENTS, LTD. rings to you—the SERIES 140 POWER AMPLIFIER. The 140 amplifiers are a 70 watt per side mosfet design that start at under five hundred dollars. Please write for information: B&K Components Ltd., PO 331, Orchard Park, NY 14127 or CALL TOLL FREE: 1-(800) 543-5252. (NY only 1-(800) 235-5020).

SEE THE SOUND... the ultimate and only LED VU Display Module for car audio. Provides dramatic microsecond visual display of selected audio program in dB. Compatible with any car stereo system. Available directly from manufacturer. Write for brochure. Dealer inquiries invited. BR Audio Inc., P.O. Box 184, Nesconset, NY 11767 (516) 467-4965.

GOETZ SYSTEMS—Manufacturer of new, state of the art loudspeaker systems, in a class by themselves. (404) 441-2190.

MIDWESTERN AUDIO/VIDEO mail order distributor for Kinetic Audio defined loudspeakers, and other well known products has enjoyed overwhelming customer satisfaction due to our affordable prices and experienced integrating of audio/video components. Send \$3.00 K.A.I.L. POB 2147, Des Plaines, IL 60018.



REMOVES VOCALS FROM RECORDS!

Our VOCAL ELIMINATOR can remove most or virtually all of a lead vocal from a standard stereo record and leave most of the background untouched! Record with your voice or perform live with the backgrounds. Used in Professional Performance yet connects easily to a home component stereo system. Not an equalizer! We can prove it works over the phone. Write or call for a free brochure and demo record.

Write to: **LT Sound, Dept. SR, PO Box 338
Stone Mountain, GA 30086
In Georgia Call (404)493-1258**

TOLL FREE: 1-800-241-3005 — Ext. 41

SAVE, BUILD THE FINEST ESOTERIC LOUDSPEAKERS. We've been making the best, affordable for years. Catalog—\$2.00 refundable. Audio Concepts, Dept. SR, 1631 Caledonia, LaCrosse, WI 54601.

CONNECTICUT: APT-Holman, Carver, Dahlquist, DCM Time Windows, Hafler, Mitsubishi, Nakamichi, Ortofon, Micro-Acoustics, N.A.D., Signet, Marcolf, Boston Acoustics, B&W, Walker, Dynavektor, Proton, Thorens, Fourler, Panasonic, Pioneer, Sanyo, KLH, will ship prepaid. SOUNDS INCREDIBLE, 39 Federal Road, Brookfield, CT 06804. Phone quotes only call Iria, (203) 775-1122.

ATTENTION HEADPHONE USERS, sound professionals. Finally available Binaural Converter. Restores space perspective. Industrial Cybernetics, P.O. Box 2477, Santa Barbara, CA 93120.

SMALL AD BIG SAVINGS
— PLUS PROFESSIONAL ADVICE —
Featuring: ADS, Advent, Aiwa, Alpine, Alltec, Amber, AR, Blaupunkt, Bose, Boston, Celestion DBX, Denon, Dual, Dynavektor, Energy, Grace, Grundig, Harman/Kardon, Hitachi, JBL, Kyocera, Mitsubishi, Onkyo, Phase Linear, Pioneer, Pyramid, SAE, Sherwood, Signet, Soundcraftsmen, Sound Dynamics, Sony, Thorens, Vampire Wire, Visikon, Walker, and more
• RETAIL • MAIL ORDER • EXPORT •
Call or Write Harold Minto
PERFORMANCE AUDIO/VIDEO
365 S Bayview Ave, Freeport, LI, NY 11520 516 378-4389
Open: 12 noon to 7pm EST Visa MC AMEX

NITTY GRITTY PROFESSIONAL RECORD CLEANING SYSTEMS. Acclaimed and used by leading recording studios, libraries universities, world-wide. Available through REFERENCE AUDIO SYSTEMS: 18214 Dalton Avenue, Gardena, CA 90248. (213) 398-4205.

ATTENTION! AUDAX, DYNAUDIO, Eclipse, Focal, Peerless, Morel, SEAS, and more! Meniscus Systems, 3275 S Gladiola, Wyoming, MI 49509.

ADCOM SUBWOOFER WITH CROSSOVER ON SALE. \$115. Postpaid USA. AHEAD STEREO, 7426 Beverly Blvd., Los Angeles, CA 90036. (213) 939-8081.

THE MOD SQUAD. Extraordinary handbuilt products: TRIPLANAR Tonearm, Oracle Power Supply, Interconnect Cables, TIPTOPS. Exceptional modifications: Quad amplifiers and speakers, Ittok, SME and Technics EPA-100 tonearms, Belles and Spatial preamplifiers, Rogers LS3/5A speakers. Request catalog from THE MOD SQUAD, 144 Athena Street, Leucadia, CA 92024 (619) 436-7666.

HARMAN/KARDON, Nakamichi, Crown, Revox, Tandberg, DBX, Hafler, Carver, Luxman, NAD DCM, Electro-Voice, and other quality components. Best prices—Professional Consultation. East: (904) 262-4000; West: (213) 840-0878.

BANG & OLUFSEN, ADS, Luxman, NAD, Thorens, Kyocera. Reasonable prices. Soundcrest Inc., (201) 756-4858.

ORDER FROM JAPAN before U.S. release! Nakamichi, Dynavektor, Koetsu, Stax, Micro, Esprit, more. These are just released: Yamaha's newest CD player CD-X1, Full-function, programmable memory, only \$475! Nakamichi RX-202 uni-directional deck, \$580; Dynavektor pure diamond cantilever DV-17DSMK2, \$199! Nakamichi computing turntable, \$1,750; Luxman's fantastic new C-05+ M-05, \$4,400; Goldbug Clement II, \$182; Sony's high-quality CDP-555ES, \$680. Also, Sony CDP-701ES, \$1,200; Nakamichi Dragon, 700 ZXL, 1000ZXL, Nakamichi car stereo: Best prices, excellent warranty! VISA, AMEX. Brochures on above free, catalog \$3. Japanese stereo 930 North LaCadena Blvd, Los Angeles 90069. (213) 652-3337.

Get It Free!

Luxman Harmon Kardon Tandberg Boston Acoustics Audio Control Sherwood Hitachi Denon Revox Onkyo Ortofon Hafler Thorens

ADS AIWA Grace M&K B&O SME & Many More

We Deliver FREE Anywhere in the Continental USA!

the SOUND Approach
6067 Jericho Tpke., Commack, NY 11725
Charge it...Call 516-499-7680

ESCAPE AUDIO MADNESS. We have the highend equipment you want at prices you can afford. Call before paying too much. Catalog \$1.00. Audio Advsor, Inc. (616) 451-3868. Box 6202, Grand Rapids, MI 49506. Amex, MC, VISA. We're your AUDIO ALTERNATIVE.

TAPES & RECORDERS

OLD TIME RADIO—original broadcasts on quality tapes. Free catalog. Carl R. Froelich, Route One, New Freedom, Pennsylvania 17349.

OPEN REEL TAPES. Pre-recorded. Catalogue. \$1.00. Barclay-Crocker, 313-S Mill Street, Poughkeepsie, NY 12601.

1930-1962 RADIO PROGRAMS. Beats Television!! Tapes, \$1.00 Hour! Established esteemed dealer. Informative 275 page catalog. \$1.25. AM Treasures, Box 192SR, Babylon, N.Y. 11702.

Quality Tapes

TDK SA 90	2.15	MAXELL UDRL II 90	2.29
TDK SA 60	1.85	MAXELL XL II 90	2.19
TDK SAX 90	2.79	MAXELL XL II 50	2.79
TDK SAX 60	2.49	MAXELL MX 90	4.69
TDK MA 90	4.29	MAXELL UD 90	2.15
TDK MA 60	3.89	MAXELL UD 60	1.85
TDK MAR 90	6.29	MAXELL LR 90	1.35
TDK MAR 60	5.79	MAXELL LR 60	1.05
TDK ADX 90	2.55	MAXELL UC35-90	4.95
TDK AD 90	1.85	MAXELL XL 135-90B	6.39
TDK AD 60	1.19	SONY UCX50	2.35
TDK D 90	1.19	SONY UCX 90	2.15
TDK D 60	.99	SONY LNX 90	1.40
TDK LX 35-90	5.15	SONY LNX 80	.95
TDK LX 35-90B	5.85	SONY L-500	6.49
TDK HD-01 DEMAG	12.75	SONY L-750	7.49
TDK T-120	6.95	SONY L-750 HG	8.99
TDK T-120 EX HG	9.50	SONY T-120	6.95
DISC WASHER DISCKIT	32.95	FLUJI FR METAL 90	3.69
DISC WASHER SYSTEM	8.79	FLUJI FR II 90	2.19
DISC WASHER DISCKET	16.49	BASE PRO II 90	2.39
DISC WASHER 16oz FLUID	9.99	MEMOREX HB 90	2.39

CALL NOW! 212-434-3417 or order by mail!
Add \$3.50 shipping on orders up to \$70. Over \$70 add 5% of total order.
Double above if parcel post. Outside USA write. MC/VISA add handling. 3%

QUALITY TAPES
864 East 7th Street, Dept. SR 1, Brooklyn, NY 11230

FREE CATALOG!! Complete selection of Consumer and Industrial Audio/Video tape and accessory products. COMPETITIVE PRICES! PROMPT DELIVERY! Corporate/Bid Solicitations Welcome. Wyco Sales, Dept. SR, P.O. Box 887, Cary, NC 27511. (919) 467-8113.

40,000 OLD RADIO SHOWS on Tape. Jazz Big Band remotes. Country Western, discographics, anthologies, chronologies. Send \$2 for huge catalog (refundable). McCoy's Recording, Box 1069S, Richland, Washington 99352.

OPEN REEL TAPE—Mostly Ampex 641/671, used once, unspliced, unboxed. 7" 1800' or 2400' 25 Reels: \$39.00. Sample: \$2.00. Ten 3600' 10½" Reels: \$32.00. Sample: \$3.50. New, premium cassettes/8 TRK cartridges available. Sample: \$1.00 each. AUDIO TAPES, Box 9584-K Alexandria, VA 22304. (703) 892-8722. VISA/AMC.

TAPE PLACE 1-800-645-6529 516-569-5978

	TDK	SONY		VIDEO ANY BRAND	
SA 90	\$2.15	UCX590	\$2.50	1120	\$7.49
SAK90	3.19	UCX90	2.29	1100MG, L750+G	9.99
MAR90	4.39	LNK90	1.19	L750	7.99
MAR90	6.49	LNK60	99	L500	6.89
AD90	1.89	MAXELL			SPECIALS
D90	1.25	XL290	2.29	ALLSOP 3	11.99
D50	99	XL2590	3.29	D4 SYSTEM	8.99
LK3590	5.19	ALL TDK REELS IN STOCK CALL			

UPS SHIPPING WITHIN 48 STATES. ORDERS UP TO \$70 ADD \$3.50 OVER \$70 ADD 5% TO TOTAL ORDER. ALL OTHER AREAS DOUBLE THE ABOVE. MC/ VISA WELCOME. TAPE PLACE BOX 248 HOWARD BEACH, NY 11414



EMPTY REELS AND BOXES

All Professional Tapes Reel to Reel & Cassette

3M
AGFA
AMPEX
BASF
TDK
MAXELL

PRO-TAPE
From Stock

Recording Supply Div. of Polyline Corp.
1233A Rand Road • Des Plaines, IL 60016

Write for our
44 Page CATALOG 36

AUDIO SPECIALTY SHOPS

FOR ALL MUSIC LOVERS! We have the widest selection of audio equipment available in all price ranges. Kycera, Sherwood, Allison, Harmon-Kardon, Infinity, Aiwa, Thorens, Ortofon, SAE, Hafler, Klipsch, Luxman and more. Call for information or stop in. CONTINENTAL SOUND, 98-77 Queens Blvd., Rego Park, NY 11374. (212) 459-7507. Immediate Delivery. MC/VISA.

WHAT IS THE LEAST EXPENSIVE WAY TO BUY AUDIO? Getting what you want! You test drive your car, why not your future AUDIO gear. To find out how you can—call: SALON ONE AUDIO, (715) 421-5910. 19121 West Grand, Wisconsin Rapids, WI 54494.

AUDIOPHILES!!!! Grado, B+O, NAD, DCM, Dahlquist, Boston Acoustics, Carver, Denon, Hafler, Signet. Best values available. CSA AUDIO, 193 Bellevue, Montclair, New Jersey, 07043. (201) 744-0600.

RECORDS

COLLECTORS' Soundtracks. Mint. List \$1 (refundable). Jemm's, P.O. Box 157, Glenview, Ill. 60025.

RARE ORIGINAL RECORDS. all kinds, mostly mint. 5000 list \$2.00, refundable. Carl. Box 828, Princeton, NC 27569.

DIRECT—DISC, DIGITAL, half-speed mastered, DBX encoded, and YSL Japanese Pressings. Send \$1.00 for catalog. DISConnection, P.O. Box 10705, Tampa, FL 33679.

RECORD COLLECTORS SUPPLIES. S.S.B. Cardboard jackets, 50¢. Plastic-lined sleeves, 15¢. Opera boxes, 78 sleeves, etc. Postage \$2.00. FREE CATALOG. VISA-MC phone orders. 614-299-0476. 614-272-6715 DAY OR NIGHT. CABC0. 400-3, Box 8212, Columbus, Ohio 43201.

AUDIOPHILE ALBUMS, COMPACT DISCS! DISCOUNT PRICES! Prompt shipping. FREE catalog. FOR THE RECORD, Box 21201QQ, Columbus, OH 43221.

ORGAN AND CHORAL RECORDS. For free catalog write: Gothic Records, P.O. Box 1576-F, Tustin, CA 92681.

JAPANESE RECORDS! Thousands of high quality Japanese records available, including the largest in-stock inventory and an extensive special order catalog. Send \$1.00 for our complete catalog, which also features imports from over 30 countries. Paradox Music Mail Order, 20445 Gramercy Place, P.O. Box 2896, Torrance, CA 90509. (213) 320-1331, MC/VISA. Established 1978.

INDIANA'S FINEST JAZZ AND FOLK: REDBUD RECORDS! Send \$1.00 for catalogue. 611(s) Empire Mill, Bloomington, IN 47401. VISA/MC (812) 824-2400. Immediate Delivery.

HAND NUMBERED LIMITED EDITIONS. Rare and unused boxed sets with booklets. Monk, Mulligan, Ammons/Lewis. For information write: MOSIAC RECORDS, 1341 Ocean Ave., Suite 135S, Santa Monica, CA 90401.

MELODIYA LABEL CLASSICS. Large selection. Catalog—\$1.00, refundable. Write ZNANIE IMPORTS, 5237 Geary Blvd, San Francisco, CA 94118, (415) 752-7555.

WORLD'S LARGEST, COMPUTERIZED CATALOG of rare records, 26,000 entries. Classical, showbiz, popular, jazz, comedy, spoken. \$4.00 refundable. Round Sound West, P.O. Box 2248, Leucadia, CA 92024.

PROTECT your LP's—Poly sleeves for jackets 13"; Square Bottom Inner Sleeves 8"; Poly lined paper 15" white jackets 35". Postage \$2.50. Record House, Hillburn, N.Y. 10931.

THOUSANDS of like new LPs, prerecorded tapes catalogue \$2.50. Records, Hillburn, New York 10931.

ORION RECORDS, CASSETTES, \$8.00 each postpaid. \$7.00, three or more. Free catalog. Box 4087, Malibu, CA 90265.

FREE RECORD CATALOGUE. New releases at discount prices and huge selection of classical, soundtrack, popular and jazz special values. Rose Records, Dept. R, 214 So. Wabash, Chicago, IL 60604.

WHILE YOU WERE LOOKING FOR "Out-of-Print" Records you should've been looking for us! DISContinued (213) 846-9192.

SUPERB SELECTION OF AUDIOPHILE RECORDINGS/IMPORTS. Detailed monthly bulletin offers latest releases, sales, more. Discount on initial order. Send for FREE catalog issue. The Essentials Marketing, Dept. SR-123, Box 7724, Eugene, OR 97401.

COMPACT DIGITAL DISCS exclusively in stock-classical jazz-catalog \$1, refundable with order. Ethel Enterprises, Box 3301, Dept. SR, Falls Church, VA 22043.

\$8.75 FOR \$12.98 LIST DIGITALS! \$10.98 list—\$7.35 on all D.G., London, Philips, L'oiseau Lyre, Argo, Telefunken, Archiv. (NY add sales tax). Postage: \$2.00 1st L.P., 10¢ each additional. MODE RECORD SERVICE, specialists in hard-to-find European, Japanese and Domestic labels. Our 300+ page catalog (\$3.00) lists over 200 labels not found in the Schwann. Send to MODE, P.O. Box 375, Kew Gardens, NY 11415.

IMPORTED RECORDS. Pop, rock, classical. Free catalog. Fantastic Plastic, 762 Hawthicket, Des Peres, MO 63131-2128.

THE HIGHEST QUALITY HI-TECHNOLOGY RECORDINGS... L.P.s from Mobile Fidelity, Telarc, Delos, Sheffield, DBX, Realtime, Sefel, Reference Recordings, etc. Audiophile Cassettes from Mobile Fidelity, Debs In-Sync, DBX, etc. Compact Discs from Telarc, Delos, Realtime, etc. Plus hard to find audiophile accessories. Plus FREE GIFTS, SPECIAL SALES, FREE NEWSLETTER, TOLL FREE CREDIT CARD ORDERING, FREE CATALOGUES. The Quality Connection, Dept. S., 18653 Ventura Blvd., Suite 314, Tarzana, CA 91356. (213) 882-3542 for catalogue requests. (800) 423-0688 for Toll Free Orders.

PROTECT your LP's—Poly sleeves for jackets 13"; Square Bottom Inner Sleeves 8"; Poly lined paper 15" white jackets 35". Postage \$2.50. Record House, Hillburn, N.Y. 10931.

THOUSANDS of like new LPs, prerecorded tapes catalogue \$2.50. Records, Hillburn, New York 10931.

WANTED

CASH FOR Unwanted LP's, Pre-recorded Reel/Reel Tapes. Reder, Box 323S, Hillburn, NY 10931.

BUSINESS OPPORTUNITIES

ERASE DEBTS with little-known law—CREATE wealth! Details FREE—WealthKit, No. DD1, Billings, N.Y. 12510.

MAILORDER OPPORTUNITY! Start profitable home business without experience or capital. Information free. Mail Order Associates, Dept. 571, Montvale, NJ 07645.

BORROW \$300—\$30,000 INTEREST FREE! Keep indefinitely! Free Details. Write: American, 1601 Main, Plainfield, Indiana 46168.

AMAZING PROFITS SELLING HOW-TO-MAKE-MONEY BOOKS! Details \$1.00. Tom, 298 "S" Sandbug Lane, North Bend, OR 97459.

SALES REPRESENTATIVE. Part Time—For large national audio distributor. Knowledge of audio equipment important. Many areas still open. Call 9AM to 9PM daily or till 5PM Saturdays. International Distributors, Baltimore, MD 21206, Phone 1-301-488-9600.

ELECTRONIC REPRESENTATIVES NEEDED! Lowest possible prices!! Over 100 brands! Audio, Video, Car Stereo, Computers. Electronic Experts, 1000 Orange Ave., West Haven, CT 06516.

CAPTURE BOOMING MARKET. Huge profits, running your own stereo, video business at home. We stock and ship equipment for you. Details \$2.98. K.W. Egan, Box 172, Watervliet, NY 12189.

YES, IF YOU LIKE stereo headphones and are interested in making \$1,000 or more per month on your spare time write for more information to SUN MOON Enterprises Company, P.O. Box 85565, Seattle, WA 98145-1556.

EMPLOYMENT OPPORTUNITIES

OVERSEAS POSITIONS. Hundreds of top paying positions available. Tax free incomes. Attractive benefits. Opportunities for all occupations, skilled trades, professionals, management, technicians, etc. Free details. Overseas Employment Services, Dept. SR, P.O. Box 460, Town of Mount Royal, Quebec, Canada H3P 3C7.

INSTRUCTIONS

YOUR OWN RADIO STATION! AM, FM, cable, licensed, unlicensed, low-cost transmitters! Free information: Broadcasting, Box 130-R11, Paradise, CA 95969.

BE A RECORDING ENGINEER! New classes quarterly. Institute of Audio/Video Engineering, 1831 Hyperion, Dept L, Hollywood, CA 90027. (213) 666-3003.

"MAKING IT IN RADIO." New book reveals rewarding jobs on and off the air, how to break in. Free details. Write Radio, Box 31256 S, Hartford, CT 06103.

MOVIE FILMS/VIDEO TAPES

16mm SOUND Features, Shorts, New, Used for Sale. Free Catalog. National Cinema, P.O. Box 43, Ho-Ho-Kus, NJ 07423.

FREE DISCOUNT CATALOG. Super 8, 16MM, 35MM video equipment. Coastal, 1428-K, San Marco Blvd., Jacksonville, FL 32207.

BOOKS & MAGAZINES

PUBLISHERS' OVERSTOCKS. BARGAIN BOOKS 2,000 titles, all subjects! Free catalog: Hamilton's, 98-58 Clapboard, Danbury, CT 06810.

MOBILE DEEJAYS—FREE CATALOG. Lights, effects, equipment. Sights & Sounds, 1208 Henry Ave., Bowling Green, KY 42101.

EDUCATIONAL OPPORTUNITIES

LEARN WHILE ASLEEP! Hypnotize! Astonishing details, strange catalog free! Autosuggestion, Box 24-ZD, Olympia, Washington 98507.

FOR SALE

LOUDSPEAKERS! Electro-Voice raw HiFi components at competitive prices. FREE list. SONIX CO., INC. Box 58-SR, Indian Head, MD 20640. (301) 753-6432.

FOR INVENTORS

INVENTORS! IDEAS HAVE VALUE!

Ever think of an idea, forget it and see it later on the market? Many people don't forget, act quickly and are rewarded by American Industry. Write down your idea! We offer free disclosure registration and initial consultation regarding your idea's potential value. Call or write without delay for your free information package.

AMERICAN INVENTORS CORPORATION
82 Broad St., Dept. SR
Westfield, MA 01086
413-568-3753

A fee Based Marketing Company
Offices Coast to Coast

INVENTIONS, IDEAS, NEW PRODUCTS WANTED! Industry presentation/national exposition. Call free 1-800-528-6050, Arizona, 1-800-352-0458X831.

PERSONALS

MAKE FRIENDS WORLDWIDE through international correspondence. Illustrated brochure free. Hermes-Verlag, Box 10660/Z, D-1000 Berlin 11, W. Germany.

CORRESPONDENCE FOR FRIENDSHIP IN PHILIPPINES, MALAYSIA. Free information. AAWs-(SR), Box 2777, Orcutt, California 93455-0777.

ORIENTAL SINGLES seeking cultural exchange, friendship, sharing, marriage. WRITE: CHERRY BLOSSOMS, Box 1021P Honokaa, Hawaii 96727.

SCANDINAVIAN SINGLES. ALL ages, seek correspondence/sincere friendships. Details: (send stamp) ScannaClub SR, Box 4, Pittsford, NY 14534.

RUBBER STAMPS

RUBBER ADDRESS STAMPS, BUSINESS CARDS. Free Catalog 1-800-851-4945 Jackson's, Brownsville Road-E-101, Mt. Vernon, Ill. 62864.

The Basic Repertoire

By Richard Freed

FOR some years critic Richard Freed, a contributing editor of *STEREO REVIEW*, has listened to all available recordings of the nearly two hundred symphonic works that form the essential core of orchestral programs and classical record collections, selecting those versions he considered the best. We have published his choices in a pamphlet, which we have updated annually, and we are now publishing his selections of the best current recordings of the *Basic Repertoire* in a regular series in the magazine. If you want the pamphlet, the most recent updating (1982) is available for \$1 (check or money order) and a stamped (40¢) self-addressed No. 10 envelope; send to *Basic Repertoire*, P.O. Box 506, Murray Hill Station, New York, N.Y. 10156.

□ **MOZART: Clarinet Concerto in A Major.** With the disappearance of the stylish De Peyer/Maag version, the most appealing survivors are the durable Jacques Lancelot/Paillard recording, now on Musical Heritage Society (MHS 1391, © MHC 2068) and the more recent one by Harold Wright and Seiji Ozawa (DG 2531 254, © 3301 254).

□ **MOZART: Piano Concerto No. 20, in D Minor.** Rudolf Serkin is the commanding soloist in both the best-sounding recording of this work, his new one with Claudio Abbado conducting (DG ● 2532 053, © 3302 053), and the best low-priced version, with George Szell (CBS MY 37236, © MYT 37236). The reading by Stephen Bishop-Kovacevich and Colin Davis is especially fresh, cogent, and altogether compelling (Philips 9500 570, © 7300 703).

□ **MOZART: Piano Concerto No. 21, in C Major.** Alfred Brendel, with Neville Martinson conducting, presents an exceptionally bracing view of this frequently ceremonialized work (Philips ● 6514 148, © 7337 148, © 400 018-2). Ingrid Haebler's ingratiating performance with Witold Rowicki conducting (Philips Festivo 6570 077, © 7310 077) is not far behind. Other good, though somewhat less individual versions: Radu Lupu with Uri Segal (London CS 6894), Walter Klien with Günter Kehr (Turnabout TV 34504, © CT-2207), and Jörg Demus playing a restored 1800 instrument with the Collegium Aureum (Pro Arte PAL-1040, © PAC-1040).

□ **MOZART: Piano Concerto No. 23, in A Major.** For all-round style and freshness, the most appealing versions are those by Bishop-Kovacevich (on the other side of his No. 20), Demus (with his No. 21), Wilhelm Kempff (Leitner conducting, DG Privilege 2535 204, © 3335 204), and Brendel (Philips 6500 283, © 7300 227). Ashkenazy, conducting from the keyboard, makes a strong impression on CD (London © 400 087-2).

□ **MOZART: Piano Concerto No. 24, in C Minor.** Robert Casadesu and George Szell were at their awesome best in this work (CBS M 31814, © MT 31814). Murray Perahia, conducting from the keyboard, gives a poetic, well-proportioned account (CBS M 34219, © MT 34219). Kempff and Leitner are even more persuasive here than in No. 23 on the same record.

□ **MOZART: Piano Concerto No. 27, in B-flat Major.** There's not one major disappointment among current recordings of this final concerto, but those by Emil Gilels with Karl Böhm (DG 2530 456) and by both Perahia (CBS M 35828, © MT 35828) and Ashkenazy (London ● LDR 71007, © LDR5 71007, © 400 087-2) as pianist-conductors are a cut above the rest.

□ **MOZART: Violin Concerto No. 5, in A Major.** The radiantly communicative recording by Anne-Sophie Mutter, with Karajan (DG 2531 049, © 3301 049), holds a place of honor among those by such distinguished senior colleagues as Arthur Grumiaux, with Colin Davis (Philips 835 112, © 7505 003), Isaac Stern with George Szell (CBS MY 37808, © MYT 37808), Heifetz conducting for himself (RCA LSC-2957 or LSC-3265), and the elegant Josef Suk with Libor Hlaváček (Eurodisc 200 053, © 400 053, or in Supraphon set 1110 1521-5). Itzhak Perlman, with James Levine and the Vienna Philharmonic, is perhaps even more persuasive and surely the most radiantly recorded (DG ● 2532 080, © 3302 080, © 400 020-2).

□ **MOZART: Serenade in G Major ("Eine kleine Nachtmusik").** Karl Böhm's reissued Berlin Philharmonic recording (DG Privilege 2535 492, © 3335 492) exudes *Gemütlichkeit*. So does Karajan's latest remake with the same orchestra (DG ● 2532 031, © 3302 031, © 400 034-2). In the same mellow frame are the performances under Karl Ristenpart, with especially attractive companion works (Musical Heritage Society MHS 753, © MHC 2156), Daniel Barenboim (Angel S-36761, © 4XS-36761), and Bruno Walter (Odyssey Y 30048, © YT 30048).

□ **MOZART: Sinfonia concertante in E-flat Major for Violin and Viola.** Dated sonics fail to muffle the pleasure of the stylish performance by Arthur Grumiaux and Arigo Pelliccia with Colin Davis conducting (Philips 835 256, © 7505 003). Josef Suk and Josef Kodousek, with Hlaváček conducting, make a similarly happy impression (in Supraphon set 1110 1521-5), and Suk's earlier version with violist Milan Škampa and conductor Kurt Redel is a fine buy (Quintessence PMC-7106, © P4C-7106). Of the two Stern/Zukerman recordings, I prefer the earlier one, with Barenboim conducting (CBS M 31369 or in M2 36936).

ADVERTISERS' INDEX

READER SERVICE NO.	ADVERTISER	PAGE NUMBER
2	ADC Division BSR, (USA) Ltd.	10
	Alpine Electronics of America, Inc.	16-17
5	Angel/EMI Records	77
	Bose Corporation	43
11	Carver Corporation	21
24	Celestion Industries, Inc.	74
	Chrysler Corporation	40
42	Consumers Company	91
28	Denon America, Inc.	76
14	Design Acoustics	88
10	Discwasher	Cover 4
	Harman Kardon, Inc.	Cover 3
	Harman Kardon, Inc.	71
	Illinois Audio	87
40	International Hi-Fi Distributors, Inc.	91
	Jack Daniel's	95
39	J & R Music World	85
13	Jensen Sound Laboratories	83
7	JVC	11
4	Konica Audio Tape	8-9
8	Kyocera	47
30	LaBelle Camera & Stereo of Maine	93
	Marlboro	12
27	Maxell Corp. of America	19
32	McIntosh Laboratory, Inc.	76
	Mitsubishi	33
31	NAD USA	69
23	Nagaoka	75
	Onkyo	4
15	Ortofon	82
3	Perreux International	20
9	Philips Auto Audio	81
37	Polk Audio	72
	Radio Shack	2
	R. J. Reynolds/Camel	62
	R. J. Reynolds/Salem	36
	R. J. Reynolds/Winston	29
44	Sansui Electronics Corp.	Cover 2, 1
12	Sanyo	35
45	Shure Brothers	70
17	Sony Corp.	38-39
	Sony Corp.	24
26	Sony Corp.	25
	Sony Corp.	27
22	The Source	91
29	Stereo & Tape Outlet	91
38	Stereo Corp. of America	92
	Sterling Treasury	77
47	Studer Revox	81
50	Tandberg of America	75
48	TDK Electronics	30
1	Technics	7
56	Wisconsin Discount Stereo	86

READ THIS AD AND YOU'LL BUY A HARMAN KARDON CASSETTE DECK



That's a bold statement, but Harman Kardon has been making bold audio statements for over thirty years, introducing the world's first high fidelity receiver, the first stereo receiver and ultrawideband frequency response. Harman Kardon was also the first company to use Dolby¹ in a cassette deck.

Today, Harman Kardon products continue to be so technologically advanced that "state-of-the-art" falls short of describing them. They have become "state-of-the-mind," the highest level at which the mind can create.

The CD491 is Harman Kardon's most sophisticated state-of-the-mind cassette deck and one of the few in the world that can equal the full range of human hearing. The CD491 has a remarkable 20Hz to 24kHz frequency response using any tape formulation, not just expensive metal tape. An audiophile would settle for nothing less. Even more remarkable is that in a national challenge,² Harman Kardon measured frequency response and beat 98% of the competition, including units costing twice as much.

The CD491 incorporates a dual capstan transport with twin flywheels to insure perfect movement of the tape across its 3 high performance heads. The dual capstan serves to isolate the tape from the cassette shell while the dynamically balanced flywheels help generate a

consistently accurate tape speed. Together they enable the CD491 to reduce wow-and-flutter to an inaudible .025%. The only "wow" you'll ever hear is the reaction of people listening to your Harman Kardon cassette deck.

The CD491 incorporates Dolby HX Pro¹ for extended frequency response, plus Dolby B and C¹ for maximum noise reduction. Three precision heads offer improved performance and the convenience of monitoring while recording. Included is a Sendust head to withstand high record levels without overload and a ferrite payback head for extended high frequency response.

The combined benefits of the CD491's performance features allow for the accurate recording of more dynamic audio signals than previously possible. In fact, the large signal response (frequency response at 0V_u) of the CD491 is a virtually unrivalled 20Hz-20kHz \pm 3dB. This is especially significant as more demanding forms of software, such as digital audio, become available.

So, while other manufacturers continue to pile on unnecessary features and gimmicks, Harman Kardon continues to develop only fundamentally advanced audio equipment.

(1) Dolby is the registered trademark of Dolby Laboratories Inc.
(2) In 1982, Harman Kardon challenged individuals to bring in their cassette decks to a local HK dealer. All units were cleaned and demagnetized in order to insure fair test results. The Harman Kardon unit was factory packed.

harman/kardon

Our state-of-the-mind is tomorrow's state-of-the-art.

Your tape player deserves Discwasher® care as much as your records do.



For well over a decade, Discwasher has provided the music world with superior record care accessories and is most often considered the world leader in record care technology.

Don't settle for less when it comes to caring for your cassette players.

Discwasher Brand tape care accessories offer a high technology maintenance program for home, car or portable tape players.

The Discwasher® Perfect Path™ Cassette Head Cleaner safely removes dust and oxides from tape heads and from along the tape path with a single pass of its unique fiber matrix tape. Through its regular use, Perfect Path will preserve the fidelity and longevity of your player.

The Discwasher® C.P.R.™ Capstan-Pinch Roller Cleaner is

the only cassette cleaner specifically engineered to properly maintain a cassette player's critical capstan-pinch roller assembly. This scientifically safe system cleans away contamination that can cause jammed cassettes and "eaten" tapes.

The Discwasher® D'MAG™ Cassette Deck Demagnetizer demagnetizes not only tape heads but capstans, tape guides and other steel portions of a cassette player as well. The unique use of high energy samarium cobalt magnets eliminates the need for batteries or power cords.

When it comes to maintaining the quality sound of your cassette player, trust Discwasher. After all, we've never let you down before!

To learn more, write Discwasher for your free copy of "Guide to Tape Care."

discwasher

1407 North Providence Road, P.O. Box 6021, Dept. SR, Columbia, Missouri 65205 USA

A DIVISION OF JENSEN an ESMARK Company

CIRCLE NO. 10 ON READER SERVICE CARD