

# Stereo Review

JULY 1983 ● \$2.25

REPORT FROM JAPAN: NEW TECHNOLOGY, NEW CHALLENGES

A ROUNDUP OF PORTABLE CD PLAYERS

TESTED: SOUNDCRAFTSMEN PREAMP, LINN SPEAKERS, DENON AMP



MR DAVID S BUCHANAN  
8900 YELLOW WOOD PL  
LOUISVILLE KY 40222

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Accelerate to audiophile performance in the automotive environment. Introducing the first high-power, pull-out cassette/receivers good enough to be called Harman Kardon.

Harman Kardon autosound is backed by more than thirty-five years of leadership in advanced audio technology. Always innovative, Harman Kardon is responsible for such audio breakthroughs as ultrawidebandwidth, low negative feedback, High instantaneous Current Capability, Phase Locked-Loop FM tuning and the world's first stereo and high fidelity receivers. Applying its technical expertise to autosound, Harman Kardon delivers quality performance that's designed for the home, built for the road.

The latest components from Harman Kardon's complete line of mobile electronics are designed to perform both together and in conjunction with existing systems. Sleekly styled, these units offer American-designed ergonomics for ease of operation: A calculated, precise front panel layout truly makes listening easy, even under the most demanding conditions.

The CR131 and CR151 powered\* cassette/receivers feature the same premium heads used in Harman Kardon's renowned high-end home systems. Teamed with Dolby B noise reduction and precise, bi-directional azimuth adjust, they provide true 20Hz to 18kHz bandwidth (+/- 3dB) while driving hiss and distortion to new lows. Both models include quartz-synthesized FM sections, 18 FM and 6 AM presets, and dual fader-controlled pre-amp outputs. The CR151 adds Dolby C, full-logic feather-touch transport, special Hi-Q interference rejection and external processor loop.

To double the output, add the CA212 half-DIN in-dash power amplifier for solid, clean, reliable power\* with advanced protection circuitry and 0.5% THD. Incorporate the CQ10 7-band equalizer and you can optimally contour the sound to the specific environmental conditions of any automotive system. Convenience features include a front panel mini-jack input for portable stereos or CD's. It offers a built-in electronic crossover to allow for additional subwoofer system expansion. The CQ10's extraordinary flexibility makes it an important addition to any sophisticated component system.

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\*Our ratings are as distortion-free as our amps. Unlike many manufacturers, Harman Kardon uses only the conservative FTC measurement standard. The CR131 and CR151 deliver 12 Watts per channel into 4 Ohms, 20Hz-20kHz with less than 0.9% THD. Beware of "peak power" ratings, measurements at 1k bandwidth only or those with as much as 10% harmonic distortion.

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Autoreverse Hi-Power Pull-Out Cassette/Receiver

- PLL quartz tuning • Hi-Q interference rejection • 18 FM / 6 AM presets with scan • Dual azimuth heads • Dolby B/C\*\* NR • Music search • Full logic transport • Key-off release & tape end eject • Separate bass/treble • External processor loop • 2 preamp outputs • 12 + 12W RMS/ch.



#### CQ10

1/2-DIN Equalizer/Electronic Crossover • 10dB boost/cut •

- 50, 200, 500, 1K, 3.2K, 8K & 16K bands • Portable CD/tape player front & rear panel jacket • 80/125/200Hz 2-way electronic crossover • Fader



#### CA212

1/2-DIN Power Amplifier •

- 12 + 12 W RMS into 4 Ohms 20-20kHz w/less than 0.5% THD • Low negative feedback design • Advanced protection circuitry

\*\*Dolby is a trademark of Dolby Licensing Corp.

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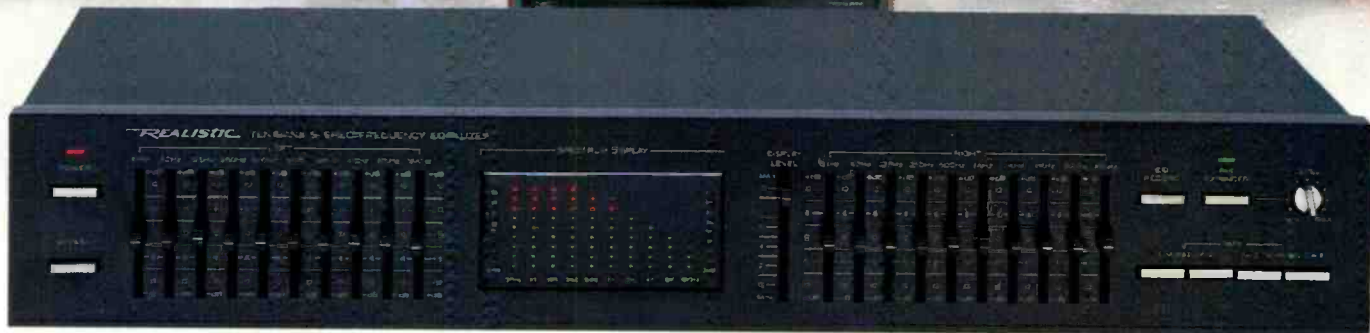


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Unleash the potential of your stereo system with our Realistic 10-band graphic frequency equalizer. With its patented IMX\* Stereo Expander circuit, you'll hear sound that's remarkably similar to a live concert. And, with the equalizer's 3-color spectrum display, you'll see the results as you customize your system's sound.

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Come in today for a demonstration of our #31-2020 stereo graphic equalizer. Only \$129.95, or low as \$15 per month\*, and only at Radio Shack.

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Cover: The pride of Japan is exemplified by the Technics SL-P1300 CD player (top) and Sony's two-piece professional DAI player, the PCM-2500A and 2500B. Design by Sue Llewellyn, photo by Roberto Brosan. Traditional robe from East East.

STEREO REVIEW BUYER POLL, SEE PAGE 101  
Please fill in if you bought equipment in the past thirty days.  
READER SERVICE INFORMATION CARD, FACING PAGE 101  
Circle the items you want to know about.

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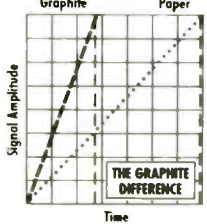


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At Phase Linear, our new U.S. made graphite subwoofers and two-way speakers perform with amazing clarity, at any level.

Each is constructed, (as are all the speakers in our line) of our exclusive felted and molded graphite fiber. A material, because of its unsurpassed lightness and strength, that responds more quickly and accurately than heavier paper cones to intense fluctuations in the dynamic range and peak power levels of your amp.

The result? Car stereo music with such



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### OUR GRAPHITE SPEAKERS AND SUBWOOFERS

**HANDLE TREMENDOUS AMOUNTS OF POWER. TREMENDOUSLY QUICKLY.**

Both our new subwoofers, and all our speakers, boost their power handling on a moment's notice from an amp.

Our 8" PLS 800 handles 100 Watts RMS, 300 Watts Peak. Our 10" PLS 1000

an even more impressive 150 Watts RMS, 450 Watts Peak. In addition, both subwoofers have remarkable systems compatibility. Simply stated, they can be crossed over, up to 1000 Hz, to complement any other series of drivers.

This power and flexibility provide you with tremendous volume and depth of sound, as well as a tremendous variety of sound.

Our new PL 2690 6" x 9" two-way is not to be outdone, however. It handles an exceptional 80 Watts RMS, 180 Watts Peak. Plus we've built into it bi-amplification capabilities. Which means you can hook up a separate amp to each speaker for even clearer highs and lows than you'd normally get with our 2½" polycarbonate dome tweeter, alone.

### THEY'RE DESIGNED TO PERFORM SUPERBLY NO MATTER HOW YOU MOUNT THEM.

As a 6" x 9" speaker, the new PL 2690 two-way, (much lower priced than any previous Phase Linear 6" x 9") can be

mounted in almost any rear deck. Which makes it an excellent full range, or bi-amplified rear channel/rear fill/mid bass driver you can use in component systems.

Our graphite subwoofers can be mounted in rear decks, behind your seats, or in custom-built enclosures for deep rumbling bass well into the 20-30 Hz range. The graphite drivers are optimally designed for free air installations and are also great in ported or sealed enclosures if you want tighter bass response.

### WE ALSO BUILD A POWERFUL LINE OF AMPS.

Luckily, at Phase Linear we build amps with enough power to give our speakers a good run for their money. Amps like our new PLT 150 Turbo, and its smaller companion, the PLA 15.



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CIRCLE NO. 145 ON READER SERVICE CARD

by Christie Barter  
and Michael Smolen

## RECORDABLE CD'S

Tandy Corporation, the parent company of Radio Shack, has announced the development of Tandy THOR-CD, "the first record and erase CD-compatible optical disc" system. Tandy claims that with its technology it will be possible repeatedly to record, play back, store, and erase music, video, or other data on discs that can be used with all existing CD audio and CD-ROM players. Consumer equipment incorporating this new technology could be on the market within two years, Tandy says. Target price: under \$500.

## RECORD BREAKER

Whitney Houston set an all-time record when *Where Do Broken Hearts Go*, off her second album, hit the top of *Billboard's* Hot 100 chart in April. It was her seventh consecutive No. 1 single. The previous record of six consecutive No. 1 singles was set by the Beatles in 1966 and matched by the Bee Gees in 1979.

## TECH NOTES

Final figures released by the Electronic Industries Association for last year reveal a healthy 2-percent growth in consumer electronics for the 1987 calendar year over 1986. Sales to dealers totaled almost \$30.3 billion. For the consumer electronics portion of the industry the EIA projects nearly 7 percent growth for 1988. . . . NHT recently introduced the Octave bass-extension module (\$230), designed by Ken Kantor, to augment its Model I speakers. . . . After a two-year hiatus, Wharfedale loudspeakers will be returning to the United States through an exclusive distribution agreement with Vector Research. . . . Infinity is launching a year-long celebration in honor of its twentieth anniversary in the hi-fi industry. . . . Acoustic Research has released for sale its new small-footprint TSW-710, a full-range floor-standing speaker aimed at music lovers with little

space. AR also announced a strengthening of its service policies. . . . Eclipse, Fujitsu Ten's high-end division, has developed an automotive digital audio tape (DAT) player, with thirty-selection programming capabilities, that the company claims will access tracks faster than any other car DAT player on the market. . . . Long a supplier of high-quality speakers and electronics, Bozak, Inc., has ceased speaker production, and a new company, New England Audio Research, Inc. (N.E.A.R.), has been formed to continue the Bozak tradition in loudspeaker manufacturing. . . . Bose has announced its participation with Honda in exporting U.S. products to Japan in the form of a special music system for the 4,000 Accord coupes being built in Ohio for sale in Japan.

## RODRIGUES BOUND

A collection of cartoons by Charles Rodrigues that have appeared in *STEREO REVIEW* has been published under the title *Total Harmonic Distortion*. The 128-page paperback is priced at \$7.95 a copy (plus \$1.50 postage and handling in the U.S.; \$1.75 outside the U.S.) and is being sold, mail order only, by the publisher, Perfectbound Press, 1120 Avenue of the Americas, Suite 4118, New York, NY 10036.

## MUSIC NOTES

Paul McCartney has reportedly signed with Russia's state-owned record company, Melodiya, for an album to be distributed exclusively in the U.S.S.R. Recorded last year and set for release this fall, the album will contain thirteen rock classics. . . . Columbia will record an album by the Soviet rock star Boris Grebenshikov and his group, Aquarium, in New York this summer. . . . A \$2.5 million gift from Herb Alpert (the "A" in A&M) to the University of Southern California will go toward the building of a new concert hall. Alpert is a USC alumnus. . . . The Smithsonian Institution in Washington has

acquired some 200,000 pages of documents related to the life and career of Duke Ellington. . . . The First New York International Festival of the Arts winds down on July 11 with a free concert by Placido Domingo in Central Park. . . . Beverly Sills has announced that she will retire as general director of the New York City Opera on January 1, 1989. Effective the same date, she will assume the vacant position of president of the City Opera's board of directors.



## BULL MARKET IN RECORDS

The dollar volume of American manufacturers' net shipments of prerecorded LP's, cassettes, and compact discs jumped 20 percent last year, according to the Recording Industry Association of America. Shipments in 1987 were valued at \$5.57 billion, as against \$4.65 billion in 1986. At the same time, the total number of units shipped (706.8 million) fell just short of the all-time high reached a decade ago. Unit shipments of CD's rose a dramatic 93 percent in 1987 while LP's and EP's continued to decline, but at a slower pace than in previous years.



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



# The Polk Revolution Continues!

*"Polk reinvents the loudspeaker"*

*High Fidelity Magazine*

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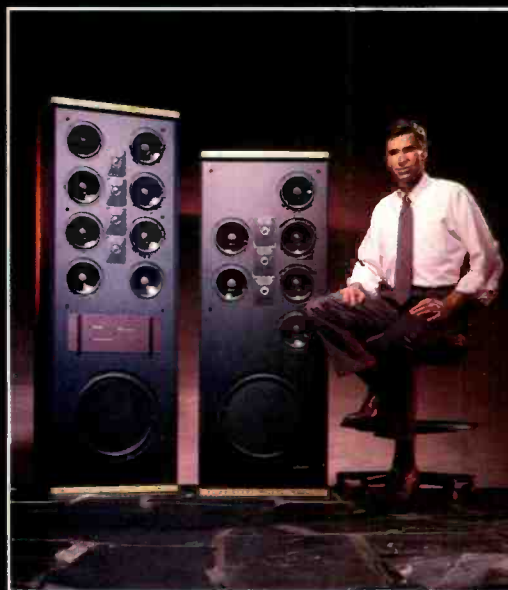
True Stereo SDA technology maintains stereo separation all the way to your ears, something which no conventional speaker can achieve. Conventional speakers make it sound like the musicians are trapped in the speaker boxes or in the small space between them. Polk's patented SDA speakers fill the entire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

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

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

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



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**Where to buy Polk Speakers? For your nearest dealer, see page 112.**

## Stereo Review

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## LETTERS

### Misdirections

Your May "Bulletin" reported that "the National Bureau of Standards (NBS) has determined that the CBS copycode system for DAT [recorders] 'does not work, audibly degrades music, and can easily be bypassed.'" This "determination" does not surprise me. What does surprise me is the ethical issue it raises. Did the recording industry lobbyists mislead Congress? Did CBS management mislead the lobbyists? Did the engineering supervisors at CBS mislead CBS corporate management? Did the engineers and scientists at CBS Labs mislead their supervisors? I'm glad that the public escaped this time. Now I wonder how many other "copycodes" have been perpetrated upon us by self-interest groups.

BRUCE A. RUBIN  
Rochester, NY

### Invisible Black

My great frustration with "high-tech fashion" for black electronics coincides with Julian Hirsch's comments about the human engineering of car stereo equipment in May's "Technical Talk." All black controls are close to unreadable; black car controls are absurd. No aesthetic objection here: It's just exasperating to need a flashlight to see which control to push/twist/slide. There are at least two home components I would buy today if only they weren't black.

As for use on the road, there are times when you need to park in order to operate the equipment—try this on the freeway! I wonder how many accidents are caused, even during the daytime, by nearly invisible black car stereo controls?

EDWARD CLAYMORE  
San Francisco, CA

### Travelin' Music

Editor in Chief Louise Boundas made some valid points when she spoke her piece in the May issue. Travelin' music really was liberated by the advent of the tape cassette and the CD. But she included one remark that nettled me: "You don't like to listen to country-and-western music just because you are traveling across the western part of the country?" (italics mine).

I'm sure Ms. Boundas is too nice a lady to insinuate that we westerners are poor, benighted provincials whose musical taste never got beyond the banjo-guitar-fiddle genre, but that's what her remark sounded like. Sure, we like Hank Williams out here. But we like Ralph Vaughan Williams, too. One day in Salt Lake City last summer I pulled

up to a traffic light—yeah, we even have those dad-blamed things out here too—and the guy in the car next to me was actually listening to Beethoven, and I actually recognized it.

JACK HANCEY  
Clearfield, UT

*The Editor replies: The rhetorical device I used in the sentence Mr. Hancey quotes was not intended as an assessment of anybody's musical taste, and I apologize if what I said seemed judgmental. Incidentally, I like Hank Williams too.*

### Rodrigues Caption Contest

For the past three years I have been racking the right side of my brain to come up with the funniest caption for STEREO REVIEW's annual Rodrigues Cartoon Caption Contest. And each year I was sure my efforts would be rewarded with fame, money, and an original Rodrigues drawing adorned with my witty masterpiece.

Nevertheless, for reasons apparently as valid as that my last name does not begin with "B" or that I do not make my living as a systems programmer, my captions were not selected as winners or even as runners up. To make matters worse, the entries that did win have struck me as being about as humorous as a blown speaker.

This year, instead of frustrating myself, I decided not to enter your contest. Instead, I am sending to the "Letters" department a pair of captions that I predict will be funnier, more creative, and more appropriate to the cartoon than the winning entry. Now, if you are adventurous enough to print this, your readers can judge my certain-to-have-lost captions next to the winners. If mine get a "thumbs down," then I, and the myriad of other readers who share my convictions, will stop scoffing and find renewed faith in your selection process:

"Actually, the really odd thing about it was that his wife requested I use speaker insulation for the job."

"It all started the day he mistook my store for the stereo shop next door and asked me for the best stuff money could buy."

PAT PORTFOLIO  
Huntington Beach, CA

*This year's contest winner and runners up are on page 20.*

### Our Errant Advertisers

Regarding the Nakamichi advertisement on page 4 of the May issue: Why are there electric poles in the rear-view mirror of the car and none on the side of



RZ-7000 Computerized Stereo A/V Receiver

# Artistry in engineering.

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

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## LETTERS

the oncoming highway? Did the dancer flying across the road knock them down?

RON BROVIAK  
Lombard, IL

I want to point out two inaccuracies in one phrase in the advertisement for Carver's Amazing Loudspeaker on pages 28-29 of the May issue: "... the sheen of a #4 drumstick on a Ziljan hi-hat cymbal." I've been drumming for slightly over thirty years, and I have no idea what a #4 drumstick is. Of greater importance is the misspelling of the name of a company that has been around for 365 years, the *Zildjian* Cymbal Company, which was founded in 1623 A.D.

CHRIS GREGORY  
Roanoke, VA

### Crossover

I received a compact disc player for my birthday last year. My taste in music centers mostly around jazz and rock, but a curious thing has happened: I am being drawn to classical music. The

names of the pieces are still foreign, but I recognize the composers. I'm learning of a whole new world of music that I had no interest in before CD's. And it's not only me; a friend I work with is also "getting into" the classics now that he owns a CD player.

Classical music on compact disc is breathtaking. The prices for classical discs are also within my budget; many times I have found a great bargain in a department-store sale bin. Classical music has found a new listener because of compact discs.

THOMAS CHEESMAN  
Escondido, CA

### LP's on DAT

I love CD's, but there are hundreds of thousands of fabulous LP's that will never, ever find their way to digital remastering. We must simply buy the best copies of them we can and use the finest combinations of turntable, cartridge, and stylus to enjoy them. But I see in digital audio tape decks the possibility of making a digital recording of the best playing of each of these records. A DAT

recording can be played again and again without wear and tear on the record, stylus, or cartridge, and it could be backed-up digitally for archive purposes, so that as one DAT copy wears out, there is always another perfect copy.

I couldn't care less about copying CD's, which have random-access perks that DAT will never be able to match, when I can use a DAT deck to preserve my valuable vinyls.

ERIK J. SAWYER  
Arlington, MA

### The Long and the Short of It

I recently purchased the Columbia CD "Bennett/Berlin." I looked at the package for a list of the recordings and the total time; only the names of the songs were given, no timings. When I returned home and opened it up I looked again for timings. Nothing. It was only when I put the CD in the machine that I saw clearly why no timings were given. The total time is thirty minutes, thirty-two seconds. And this for \$14.99.

While the sound is fine, I think the CD



## LETTERS

is a bit expensive for that amount of music. No more Columbia CD's for me unless timings are clearly visible on the packaging. How about some truth in advertising?

GREGORY SALOMONE  
Washington, DC

Which greedy individual at MCA Records decided to rip off consumers by issuing the Who's wonderful rock opera *Tommy* on two CD's? The entire work in my two-LP set is barely over sixty minutes long. If they must charge more than the price of one CD for it, fine, but issue it on one disc. I will not buy two CD's with barely thirty minutes each!

WALTER SCHOENHEIM  
Tucson, AZ

### *The Pogues and the IRA*

There's something offensive in Mark Peel's description of the Pogues (in May "Best Recordings of the Month") as being "as tightly knit as a band of IRA irregulars out for an evening raid." The difficulty for anyone not an IRA parti-

san springs from the fact that calling a band of musicians "tightly knit" is generally a form of praise, whereas many of us wish that the IRA (and its Protestant counterpart) were considerably less effective and well coordinated.

Music may express anger, frustration, or despair, but it doesn't release those emotions in the form of a bullet or a bomb. Therein lies much of its appeal.

MARK ANDRUSS  
Kansas City, MO

By comparing the Pogues to "a band of IRA irregulars out for an evening raid," Mark Peel insults both his readers and the band. Those bodies littering the evening news after such "tightly knit" raids are (were) real people, usually English and Irish bystanders.

RONALD STONE  
Lexington Park, MD

### *How to Buy a Tuner*

I did not read the article "How to Buy a Tuner" by Peter W. Mitchell in the November 1987 issue until a month ago, when I started to check back issues

for receiver and tuner test reports for friends in the market for new equipment. Although I am perhaps more familiar with the meanings and relative importance of equipment "specs" than the average reader, I still learned from the article. I am writing to thank you for printing it. It was pleasant to read, unpadded, and, so far as I could judge, complete and with suitable emphases, such as about antennas. I cannot imagine a better article of its length on the subject.

JOHN H. HENDERSON  
Ft. Lauderdale, FL

### *Correction*

In Richard Freed's May review of Seiji Ozawa's new Deutsche Grammophon recording of Prokofiev's *Romeo and Juliet*, he said that Ozawa's splendid recording of Tchaikovsky's *Swan Lake* on the same label "did not stay in the catalog very long." After the issue went to press, Mr. Freed realized that Ozawa's *Swan Lake* is not only still available on DG in its original LP form but is on CD as well.

There it is, spread before you in all its impossibly complicated, completely unmanageable glory. Your life.

Just one short week of which might consist of 22 meetings, 134 messages, 297 calculations, 5 lunch dates, 1 business trip, your Aunt Sally's 80th (81st?) birthday, your child's first grade recital...

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Dr. Sidney Harman, Founder and Chairman of Harman Kardon.

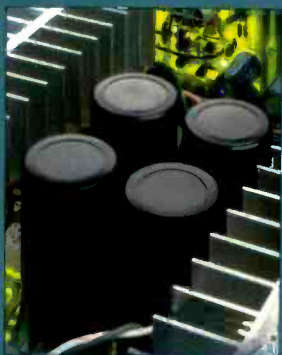
*Steeped in audio breakthroughs and advanced designs, Harman Kardon's Citation division introduced the world's first Ultrawideband amplifier in 1963—the Citation 2 vacuum tube amplifier. In 1972, the Citation 14, the first FM stereo tuner with Phase Locked Loop (PLL) MPX decoding*

*was introduced. In 1977, the 150-Watt-per-channel Citation 19 became the first power amplifier to feature low negative feedback. 1981 saw the introduction of the Citation XX. Its exclusive High instantaneous Current Capability (HCC) design provided the instantaneous current required to precisely drive and control any loudspeaker system.*

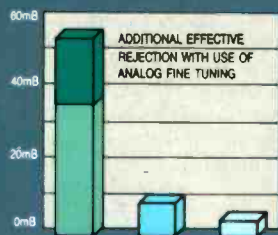
*Now, just as the original Citation separates established design innovations that were years ahead of their time, the new Citation series sets the standards for the decade to come.*

*The new Citation twenty-three makes tuner design history as the world's first Active Tracking tuner and the world's first synthesized tuner with Analog Fine Tuning. This patented system delivers two aspects of tuner performance that were previously mutually exclusive: high selectivity and high fidelity. Its*

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A thorough analysis of internal layout and a strict code of symmetrical circuitry ensure rapid, accurate reproduction of the music signal.



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■ NARROW MODE OF TYPICAL WIDE/NARROW TUNER

In contrast to traditional methods, the Citation twenty-three's Active Tracking circuitry provides previously unheard of adjacent channel selectivity, with little or no sacrifice in stereo separation or THD.

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**Citation**  
harman/kardon

\*20Hz-20kHz = 0.08% THD into 8 Ohms and into 4 Ohms.

*Citation. The next generation.*



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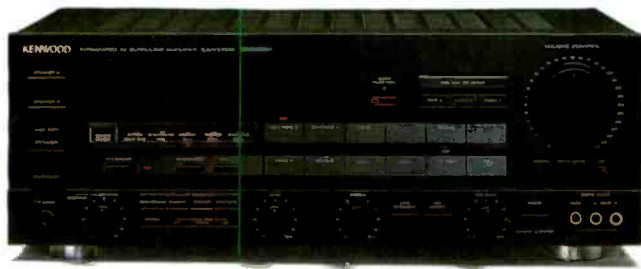


## ECLIPSE™ THE DIFFERENCE IS NIGHT AND DAY.

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## NEW PRODUCTS



### Kenwood

The Kenwood KA-V1000R audio/video control center is a four-channel integrated amplifier with six audio and six video inputs. Its programmable remote-control unit can memorize up to fifty-eight additional functions for other remote-controlled components. The amplifier is rated at 80 watts per channel for the front outputs and 20 watts

per channel for the rear, and it incorporates four modes of surround sound, including Dolby Surround. It has three independent recording selectors, enabling the user to record from up to three different program sources simultaneously while viewing or listening to a fourth program. Price: \$875. Kenwood, Dept. SR, 2201 E. Dominguez, Long Beach, CA 90810.

**Circle 120 on reader service card**

### Numark

The Numark DM1775 stereo preamp mixer with a 4-second digital sampler is said to be the first mixer to offer both home users and DJ's the ability to loop sampled material through a digital delay circuit. It has variable delay rates, from 15 milliseconds to 4 seconds, features a 16-bit microprocessor, and has inputs for up to two turntables, four stereo line sources, and two microphones. Price: \$829.95. Numark Electronics, 503 Newfield Ave., Raritan Center, Edison, NJ 08837.

**Circle 121 on reader service card**



### Dahlquist

The Dahlquist M903 two-way speaker has a 6½-inch cast-frame woofer and a 1-inch cloth-dome tweeter, both flush-mounted to an electrostatically flocked baffle. There is a tuned port below the woofer. The cabinet is constructed of damped, variable-density panels that are said to reduce enclosure energy storage and delayed resonances, and thus coloration. The crossover frequency is given as 2,800 Hz, frequency response as 48 to 24,000 Hz, and sensitivity as 90 dB sound-pressure level at 1 meter with an input of 1 watt. Nominal impedance is 8 ohms. Power handling is 20 to 75 watts. Dimensions are 17 x 8½ x 10¾ inches. Finish is black woodgrain laminate. Price: \$450 a pair. Dahlquist, Dept. SR, 601 Old Willets Path, Hauppauge, NY 11788.

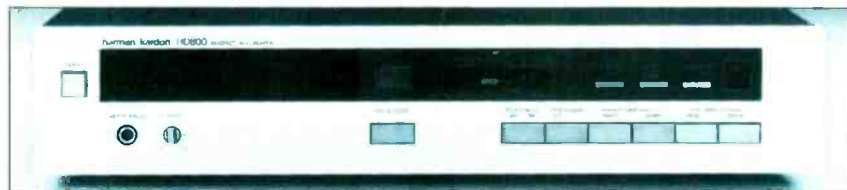
**Circle 122 on reader service card**

### Harman Kardon

The HD800 compact disc player from Harman Kardon features an analog output section that uses no negative feedback and is said to have exceptionally low intermodulation distortion all the way from 0 to 100,000 Hz. A separate 16-bit, quadruple-oversampling digital-to-analog converter is used for each

channel, and the digital and analog sections are isolated from each other. Other features include programming for up to thirty-six tracks and a headphone jack with a level control. Price: \$499. Harman Kardon, Dept. SR, 240 Crossways Park West, Woodbury, NY 11797.

**Circle 123 on reader service card**



### Proton

Proton's 200 series components include (top to bottom) the AM-200 integrated amplifier, the AT-200 AM/FM tuner, and the AD-200 cassette deck. The AM-200 is rated for 20 watts per channel with 6 dB dynamic headroom. It features a BASS EQ switch, to improve the bass response of smaller speakers, and adjustable capacitance for moving-magnet phono cartridges. The AT-200's FM section has a rated usable sensitivity of 1.8 mV, alternate-channel selectivity of 65 dB, AM rejection of 60 dB, capture ratio of 1.5 dB at 45 dBf, A-weighted signal-to-noise ratio of 74 dB in stereo, and stereo separation of 45 dB at 1,000 Hz.

The AD-200 has Dolby B and Dolby C noise reduction, a rated frequency response of 40 to 15,000 Hz ±3 dB with normal tape, and wow-and-flutter of 0.08 percent wrms. Prices: AM-200, \$239; AT-200, \$199; AD-200, \$219. Proton, Dept. SR, 737 W. Artesia Blvd., Compton, CA 90220.

**Circle 124 on reader service card**



## NEW PRODUCTS



### Celestion

The DL4, the smallest speaker in Celestion's DL Series II line, is a two-way acoustic-suspension system measuring only 15 x 8 x 10 inches. Shown on Celestion's optional 24-inch LS spiked stand, the DL4 has a 6½-inch paper-cone woofer and a 1-inch titanium-dome tweeter. Frequency response is rated as 70 to 20,000 Hz, sensitivity as 89 dB sound-pressure level at 1 meter with an input of 1 watt, and power handling as 75 watts continuous. Built of high-density particle board said to minimize cabinet resonances, the DL4 is available finished in either black or walnut-grain vinyl. Price: \$149 each; LS stand, \$18 each. Celestion, Dept. SR, Box 521, Kuniholm Dr., Holliston, MA 01746.

Circle 125 on reader service card

### Magneplan

The Magneplanar MG-2.5/R two-way speaker from Magneplan incorporates a true ribbon tweeter that is 40 inches long, ¼-inch wide, and 0.00015 inch thick. The low-frequency section is a 606-square-inch planar/magnetic driver. Crossover is at 1,000 Hz. Rated frequency response is 37 to 50,000 Hz ± 3 dB. Impedance is rated as 5 ohms, and the recommended maximum amplifier power is 200 watts per channel. Overall dimensions are 72 inches high, 22 inches wide, and 1½ inches deep. The solid-oak side rails are available finished or unfinished, and grille cloths are available in white, black, or brown. Price: \$1,550 a pair. Magneplan, Dept. SR, 1645 Ninth St., White Bear Lake, MN 55110.

Circle 126 on reader service card



### Autotek

The Autotek 7000 car stereo preamplifier/equalizer is part of the company's Professional Series of high-current amplifiers. The Model 7000 has a seven-band equalizer, variable 12-dB-per-octave electronic crossover, fader, volume control, and sensitivity control, all

with high-relief gold markings. It is rated for an output level of 1 volt and a frequency response from 20 to 20,000 Hz with less than 0.04 percent total harmonic distortion. RCA-type input and output jacks are used. Price: \$300. Autotek, Dept. SR, 855 Cowan Rd., P.O. Box 4391, Burlingame, CA 94010.

Circle 127 on reader service card



### Technics

The top-of-the-line SA-R530 audio/video receiver from Technics features Dolby Surround circuitry and six additional simulated surround-sound modes: "theater," "hall," "club," "concert hall," "studio," and "stereoplex." The 103-function unified remote control is capable of learning commands used by remotes for other brands of VCR's, TV sets, and cable boxes. The amplifier section is rated at 100 watts each for the stereo front channels, and there is a separate amplifier for rear speakers rated at 5 watts per channel. A built-in seven-band graphic equalizer has ten preset curves, five of them fixed and five programmable by the user. There are five audio inputs and three A/V inputs. Price: \$850. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

Circle 128 on reader service card

The Onkyo TA-RW490.  
Technology with Imagination.



## TO MAKE THE JOURNEY SHORTER—

For most people, the so-called dubbing cassette deck is an example of frustration in action. That's because the promised convenience is more often offset by poor results.

To correct this, the new Onkyo TA-RW490 is a fundamentally different design. Rather than follow the conventional approach of adding an inexpensive playback-only transport to an existing deck, Onkyo combined two high quality decks in one chassis. This gives the TA-RW490 performance advantages unavailable anywhere else. And gives you the benefit of uncompromised sound quality.

Each two motor, auto reverse transport can record either simultaneously or sequentially. So you can make two recordings at once. Or one continuous recording up to four hours long.

The TA-RW490 is the first dubbing cassette deck to feature

Dolby HX Pro. This innovative system enhances a tape's ability to handle the extreme dynamic range that occurs when recording from today's demanding digital sources.

Two fully independent Real Time Counters show, to the second, elapsed and remaining time—particularly valuable when making dual recordings.

Additional convenience features include one touch, tape to tape standard or high speed dubbing with mic mixing, auto tape selection for proper bias and equalization, and, Onkyo's exclusive RI remote control.

The TA-RW490 proves once again that Onkyo designs components in which convenience complements quality.

It makes the journey to your music that much shorter.

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## NEW PRODUCTS



### Kalglo

Kalglo's DPC+ (Deluxe Power Console-Plus) is an eight-outlet surge suppressor and noise filter that is said to incorporate the quickest response time available, 1 picosecond. It also features 131-volt clamping, an outlet-wiring integrity checker, "massive" energy-handling capability (383 joules), and a fail-safe system cutout. There are two isolated banks of four individually isolated outlets so that motor-driven components such as tape decks and turntables can use one bank and electronic components the other, preventing AC motor noise from one part of an audio system from affecting the rest of the system. Price: \$125.95. Kalglo, Dept. SR, Colony Drive Industrial Park, 6584 Ruch Rd., Bethlehem, PA 18017-9359.

**Circle 129 on reader service card**

### Bang & Olufsen

Bang & Olufsen's Attyca audio-system furniture comes in two configurations: the Attyca 2, shown with B&O's Beogram 3300 turntable and Beocenter 9000, and the smaller Attyca 1 (not shown), which is designed to hold B&O's narrower stacking components. The shelving has an off-white, chip-resistant, double-lacquered finish, and

the support columns, which can hide excess wire or speaker cables, are available in chrome or matte black. The Attyca 1 measures 42½ inches wide, the Attyca 2 62¼ inches wide; both are 22⅞ inches high and 17⅞ inches deep. Prices: Attyca 1, \$560; Attyca 2, \$685. Bang & Olufsen, Dept. SR, 1150 Feehanville Dr., Mount Prospect, IL 60056.

**Circle 130 on reader service card**



### Magnavox

The CDB486 remote-controlled compact disc changer from Magnavox plays up to thirty selections in any order from a maximum of six CD's. Also included is a shuffle-play feature, which randomly plays selections from one disc at a time, and three-speed forward and reverse

search. Dual 16-bit digital-to-analog converters are used. Frequency response is rated as 2 to 20,000 Hz ±0.5 dB, dynamic range as greater than 83 dB. Dimensions are 16½ x 3¼ x 12½ inches. Price: \$370. Magnavox, Dept. SR, I-40 and Straw Plains Pike, P.O. Box 14810, Knoxville, TN 37914-1810.

**Circle 131 on reader service card**

### Coast

The PL-15 Caravelle "Patch-Leather" compact disc organizer from Coast Manufacturing holds up to fifteen CD's in upright positions. The discs are held in a die-cut, rubberized "Stay-Loc" cushion, and a foam inner wall provides further shock protection. Random-shaped pieces of leather are top-stitched together to form the padded exterior, closed by a two-way zipper. The PL-15, measuring 11 x 6½ x 6 inches, is available in chocolate or tan leather. Price: \$44.95. Coast, Dept. SR, 118 Pearl St., Mt. Vernon, NY 10550.

**Circle 132 on reader service card**



The Onkyo TX-850.  
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## ONE LESS BARRIER BETWEEN YOU AND YOUR MUSIC—

Most high fidelity systems are built around a receiver. After all, convenience is attractive. But convenience often has a price. And the price is usually performance.

That isn't the case with Onkyo. And a look at the TX-850 will show you just how seriously we value good sound.

Start with the amplifier. And Onkyo's Low Impedance Drive.

At 68 watts per channel RMS,\* the TX-850 provides more than enough power for realistic levels even with low efficiency speakers. Power into more demanding 4 ohm loads is an impressive 85 watts per channel. And for those occasions when digital sources demand instantaneous response to high level musical peaks, the TX-850 is capable of producing up to 160 watts per channel, even into 2 ohm loads!

The tuner section features Onkyo's famous APR (Automatic Precision Reception) system which continuously monitors the signal at the antenna and adjusts four critical circuits to assure you the best FM reception.

The TX-850 also gives you extensive signal processing capability. A continuously variable Dynamic Bass Expander gives you precise control of musical "punch." Onkyo's Selective Tone Control provides accurate tonal balance at any listening level. A Stereo Image Expander and Simulated Stereo circuitry extend the sense of spaciousness from any source you choose.

And a CD Direct selector allows you to bypass less crucial preamplifier circuitry so you can fully enjoy the clarity of digital.

Extensive video capability complements the audio performance. Remote control using Onkyo's new RI (Remote Interactive) system is standard, too. And the programmable remote transmitter means that you need just one control for all your components!

In short, the Onkyo TX-850 proves that you don't need to sacrifice sound quality for convenience. And stands as one less barrier between you and your music.

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*Thank God he's not rack-mounted.*

*Runners Up*

Sure, Joe's head's too big on Phil's bod, but—hey!—Joe had the golden ears.

BOB SEARLES  
 Northridge, CA

Would you believe the hardest part was finding the fake LED's? Eyeballs are easy.

VINCENT SCOTT  
 Columbia, SC

And so, when his nephew's lawyer advised that the warranties would indeed remain in force as long as the equipment remains in the hands of the original owner . . .

JUDSON S. HARMON, JR.  
 Whitley City, KY

Tipper Gore commissioned this one. She wanted to show her son what she thinks he'll look like in twenty years if he keeps listening to Mötley Crüe.

JEFF KAISLER  
 Davenport, IA

That's exactly the way his wife found him when the subwoofer kicked in.

PETER J. NICHOLS  
 DesPlaines, IL

Oh, mounting him was easy. The hard part was finding a cartridge-tonearm combination his family could agree on.

GENE TAYLOR  
 Toronto, Ontario

Julius has had several offers on the ashtray, but he just won't break up the set.

ROBERT M. MARKS  
 Kensington, MD

Yeah, once their ears go, it's cruel *not* to shoot reviewers.

DAN BERGGREN  
 Fredonia, NY

Their original plans were more ambitious, but Disney wouldn't have anything to do with it.

ROBERT R. JONES  
 Norcross, GA

**C**ONGRATULATIONS to Matt Mirapaul of Chicago, Illinois! He is the winner of the fourth annual Rodrigues Cartoon Caption Contest, and his winning entry is the one now under the cartoon.

As we did in previous years, in our issue of January 1988 we printed a drawing by our cartoonist Charles Rodrigues and invited readers to submit proposed captions for it. The prize offered for the one the judges considered to be the funniest is \$100 and the original drawing.

The editors of STEREO REVIEW thank the contestants for their entries, which came from all over North America and many faraway places. We also thank the previous winners—Thomas Briggle, of Akron, Ohio, Michael Binyon, of San Luis Obispo, California, and Bruce Barstow, of Philadelphia, Pennsylvania—who served on the panel of judges.

Frequently duplicated entries were variations on "His wife said he wanted to be remembered this way," "Is it live or is it Memorex?," and "He always said if he couldn't take it with him, he wasn't going." A number of knowledgeable audio-

philes based their entries on the live-end/dead-end listening room. There were references to copycode chips, couch potatoes, DAT, and the right stuff or stuffing.

Among musicians, the most frequently mentioned by far were Twisted Sister and the Grateful Dead. Others were Brahms, Mozart, Mendelssohn, Barry Manilow, Mike Oldfield, Ozzy Osbourne, Pink Floyd, and Talking Heads.

Classical compositions referred to in the submitted captions included (in order of frequency) Tchaikovsky's *1812 Overture*, Strauss's *Death and Transfiguration*, and Saint-Saëns's *Carnival of the Animals*. Other proper names that occurred in entries include Norman Bates, Bob Carver, Ray Dolby, Julius Futterman, Julian Hirsch, Jimmy Hoffa, and William Livingstone.

The judges report that choosing a winner from the thousands of entries was a barrel of laughs. Nine runners up are printed at right. Past experience has taught us that readers generally prefer one of the runners up, so you won't have to write in if that happens to you. Save your stamp to enter next year's contest.

—William Livingstone

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8H49

# More For My Money

I'd always thought you needed big speakers to get good sound. So every couple of years, some department store would have a sale and I would buy the biggest speakers I could find for the money. Then I moved across the country to take a new job. I left my old speakers behind. I was sure they wouldn't fit in my new apartment and I was ready for new ones anyway.

After the move, I went shopping for new speakers at a specialty hi-fi store near my apartment. I told the salesman to show me something under \$500. He took me into a room full of all kinds and sizes of speakers.

The first speakers he demonstrated were fantastic. The bass was big and tight. The stereo image was beautiful. Surely it was the biggest pair in the room.

"I don't have the room for those big speakers," I said. "And besides, I'm sure I can't afford them."

He stopped the demonstration to show me a KLIPSCH® kg<sup>2</sup>®, a compact and elegant model. "Yeah, this is more my size," I said, "let's hear a pair of these."

"You just did," he said.

I bought those kg<sup>2</sup>s. I paid a lot less than I had planned. And, believe me, I got a lot more for my money.

---

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CIRCLE NO. 2 ON READER SERVICE CARD





## SONY CDX-A20/RM-X2 COMPACT DISC SYSTEM

by Julian Hirsch and Ken Pohlmann

**S**ONY'S CDX-A20 ten-disc CD changer is designed to be installed in the trunk of a car and controlled from the passenger area by the RM-X2 Remote Commander or a Sony cassette receiver such as the XR-7300. The changer and RM-X2 can also be used with Sony's XT-20 AM/FM tuner and an outboard amplifier.

The system we tested consisted of the CDX-A20 and the Remote Commander. Both plug into a third, hideaway interface module, included with the CDX-A20, that has no controls and is also usually installed in the trunk. The RM-X2, which somewhat resembles a typical wireless remote control, can be left unmounted or be mounted in a standard DIN-size dashboard cut-out (a featureless plastic cover is provided to disguise its presence). It could also be installed in a sun visor or on the optional GMA-10 flexible stalk, which attaches to the floor near the driver.

The CDX-A20 itself is a compact gray box that measures 11<sup>7</sup>/<sub>8</sub> inches wide, 7<sup>7</sup>/<sub>8</sub> inches deep, and 3<sup>7</sup>/<sub>8</sub> inches high and weighs slightly less than 7 pounds. It can be installed either vertically or horizontally, in the trunk or elsewhere, since the internal disc-playing mechanism is

floated on springs. A sliding door, normally closed to exclude dirt and dust, opens for loading or removing the ten-disc magazine. The changer has no controls except for a button inside the box to eject the magazine, and its only connector is the integral multiwire cable that goes to its companion interface module. The hideaway interface has four line-level output jacks (front and rear) to drive external power amplifiers and speakers and a pair of auxiliary line inputs. The connections to the Remote Commander and the CDX-A20 use DIN-type plugs.

The RM-X2 controller is the only part of the system that the user sees or handles while driving. Installed in the dashboard, it resembles a typical car stereo head unit, with a long LCD readout where the cassette or CD slot is usually located. All the normal operating controls are large pushbuttons with clear, unambiguous markings. Ten smaller buttons are used for manual track and disc selection and for programming. If the XT-20 tuner is used, these buttons can also store and retrieve channel presets. All the control buttons, like the display, are back-lit whenever the system is operating.

Some controls serve analogous functions in tuner and CD modes.

The SEEK/AMS button can either skip from track to track of a CD or scan the tuner until a station is received. The MANUAL button either tunes the radio or scans a CD at high speed.

The remaining control button, SHUFF(le)/PGM (program), is used only in CD mode. Pressing SHUFF plays all the tracks on the selected disc in random order, after which the changer goes to the next disc in the magazine and does the same, unlike home changers from many other manufacturers, which can shuffle tracks from all the discs in a magazine in one sequence. The PGM side of this button is used to play a programmed sequence of up to ten tracks in any order. In this case, each selection can be from any disc in the magazine. Prices: CDX-A20 changer, \$750; RM-X2 Remote Commander, \$230. Sony, Dept. SR, Sony Drive, Park Ridge, NJ 07656.

### Lab Tests

All measurements were made with an EIA standard load of 10,000 ohms and 1,000 picofarads across the front-channel line outputs. Tone-control characteristics were measured through the auxiliary inputs, which become active when the player is put into its standby mode. The CD player's output clipped at 1.5 volts with a 0-dB test signal at 1,000 Hz and the level control set somewhat below its maximum. Playing a disc with the volume close to maximum would risk hard clipping of high-level peaks approaching a 0-dB level.

The frequency response of the player was well within its rating of  $\pm 3$  dB from 20 to 20,000 Hz, varying only  $\pm 0.5$  dB over that range. The tone controls had good characteristics, with the bass turnover frequency sliding between about 100 and 400 Hz and the treble curves hinged at 2,500 Hz. The 1,000-Hz level was absolutely unaffected by any tone-control settings.

Distortion at 1,000 Hz was about 0.06 percent for recorded levels of 0, -10, and -20 dB. The A-weighted noise level was -89 dB, and the dynamic range was 80 dB (as rated). Channel separation was not as great as with most home CD players, rang-

## CAR STEREO

ing from a maximum of 80 dB at 1,000 Hz to a minimum of 50 dB at 20,000 Hz. The low-level linearity errors of the digital-to-analog (D/A) converter were very low at any listenable level, less than 0.5 dB down to -80 dB and only +2.5 dB at a -90-dB level. The error at -100 dB, however, was +10 dB.

The interchannel phase shift reached 20.5 degrees at 20,000 Hz, a relatively low reading, roughly what you would expect from a double-oversampling digital filter and D/A converter multiplexed between the stereo channels. Since the specifications make no mention of the D/A and filtering parameters, however, and the square-wave response of the player was typical of *analog* filter performance, we have no explanation for the measurement.

The slew time of the laser transport from Track 1 to Track 15 of the Philips TS4 test disc was 2.5 seconds, a typical figure for a current home CD player, and its cueing from Track 17 to Track 18 (with no silent interval between them) was accurate. About 12.5 seconds were required to change from one disc to another in the magazine. The impact resistance of the

CDX-A20 was good, as it would have to be in an automotive installation, although it seemed to be affected somewhat by the rigidity of the supporting surface. Overall, however, its impact resistance was not quite equal to that of the first Sony car stereo CD changer, the CDX-A10, which we tested a couple of years ago.

The only respect in which the performance of the CDX-A20 was disappointing was its error-handling ability. Virtually every CD player we have tested in the past several years has had no difficulty in tracking through all the calibrated defects on the Philips TS5A test disc, but this one was unable to correct for information-layer damage exceeding 500 micrometers in size. According to Philips, correcting for a defect of



that size is a minimum requirement for a properly functioning CD player. With larger defects, there was at first an occasional dropout and eventually, at 800 and 900 micrometers, a total interruption of play. The full range of black-dot defects on the disc's surface was handled with no difficulty, as were all the commercial CD's we played on the machine.

A trunk-mounted automatic disc changer is probably the ideal, and certainly the safest, way to enjoy compact disc programs in a car, as it solves the problem of storing and handling the discs while driving and gives no external indication of its presence in the trunk. The compact and rugged Sony CDX-A20 meets these requirements, and in addition it has an exceptionally well-designed control unit. Installed in the dashboard and hidden by its plastic cover, it would be nearly as invisible as the CD player itself.

Although we only used the CDX-A20 on the test bench and connected to a home music system, we speedily came to appreciate the human engineering that entered into the design of the RM-X2 Remote Commander. It is unquestionably one of the most easy-handling and logically designed automotive control units we have seen, with none of the arcane or impractical features found on some head units.

The operation of the system was flawless in almost every respect. A minor annoyance was that each time the unit was turned on, its volume setting was close to minimum and the output of the system was total silence. A default setting that produced an audible output would have been preferable.

Otherwise, the Sony system earned our respect and appreciation. Its track-access time was on a par with that of most of today's home players, and even the disc-changing time was reasonable (the LCD readout displays messages such as WAIT and LOAD to reassure the user that the system is still functioning during these periods). *J.H.*

### Road Tests

Road-testing the Sony CDX-A20 and its companion RM-X2 Remote Commander presented a particular

### FEATURES

- Trunk- or floor-mounting automatic CD changer
- Remote Commander with all controls and LCD readout: can be hand held, installed in DIN-size dashboard opening, or stalk mounted
- Interface module with line outputs for front- and rear-channel amplifiers, line-level auxiliary inputs
- Programmable for up to ten selections in any order
- Disc magazine holds ten CD's
- Track stepping in either direction
- Fast search in either direction with audible sound
- Display of disc, track, and program numbers, elapsed time in track, and relative settings of level controls
- Direct access to any numbered track or disc in magazine
- Optional AM/FM tuner module

### LABORATORY MEASUREMENTS

**Maximum output level:** 1.5 volts at clipping

**Total harmonic distortion** at 1,000 Hz: 0.06% at 0, -10, and -20 dB

**Signal-to-noise ratio** (A-weighted): 89 dB

**Dynamic range:** 80 dB

**Channel separation:** 80 dB at 1,000 Hz, 50 dB at 20,000 Hz

**Frequency response:** ±0.5 dB from 20 to 20,000 Hz

**Maximum phase shift** (from 100 to

20,000 Hz): 20.5 degrees at 20,000 Hz

**Cueing time:** 2.5 seconds maximum on same disc, 12.5 seconds between discs

**Cueing accuracy:** A

**Impact resistance:** top, A; sides, A

**Defect tracking:** tracked black-dot surface defects of Philips TS5A test disc at maximum (800-micrometer) level; tracked information-layer defects to 500-micrometer level

## CAR STEREO

psychological challenge to me. I used Sony's original DiscJockey, the CDX-A10 changer, and became a real fan. Because of its innovative concept and its excellent mechanical and sonic performance, I regarded it as one of the top car audio components of all time.

Now along comes its successor, implicitly claiming to be new and improved. How could that be possible? Improve on genius? Improve on perfection? It was, therefore, with healthy skepticism that I unpacked the new Sony changer.

Installation of car CD changers is almost a pleasure because most of the typical behind-the-dash agony is avoided. Even if you do put the RM-X2 control unit in the dash, it is a real cinch to mount. Of course, the changer can also be controlled through several Sony head units, such as the XR-7200 and XR-7300, which do exact the requisite agony. I chose the hang-loose installation approach for this test and left the RM-X2 unmounted. The supplied 16-foot cable was plenty long enough and should be adequate for all but the biggest of rigs.

The changer itself is a small package indeed (40 percent smaller than the original DiscJockey) and can be mounted either vertically or horizontally. I chose a vertical location directly behind the driver in the never-used back seat of my Porsche 911. I lifted the carpet and used the supplied sticky tape to mount metal brackets solidly to the floor, and then I attached two plastic brackets to hold the changer. Installation note: Remember to re-align the two internal springs for whichever type of placement you choose. Also, the placement angle must not exceed 15 degrees.

The remote, the changer, the front and rear amplifiers, the auxiliary inputs, and the optional tuner must all be connected to an interface box. Although various mounting options are provided for, I simply stuffed the interface box under the driver's seat. Finally, to deter thieves, I cut a square of carpeting to cover the changer and keep it out of sight of inquisitive eyes. That completed an easy installation.

On the road, the Remote Commander was simplicity itself to use.

It is truly intuitively obvious in its operation—you'll never need the owner's manual. In addition, its great human engineering, coupled with an absence of disc-loading chores, meant I never had to take my eyes from the road for more than the briefest moment. Finally, the softly back-lit display provides total information at a glance, and it looks great at night.

Mechanically, the CDX-A20 worked like a charm. The ten-disc magazine is inserted through a sliding top door and retrieved with the eject button—simple, and a big improvement over the original DiscJockey. Inside, mounted on a well-engineered antishock system, is the equivalent of a disc jukebox. A miniature elevator moves across the disc magazine, stops at the disc you desire, withdraws it, and brings it to the transport, all in less than 10 seconds with my sample.

On the road, the changer's tracking stability was perfect. Sony's engineers have solved the shock and vibration problems common to first-generation car CD players. The CDX-A20 never mistracked during my lengthy road tests, and I'd personally guarantee it for any driving conditions except off-road in the Grand Canyon and on the streets of midtown Manhattan.

Sonically, the changer was as good as many home CD players. It includes double-oversampling digital filtering, and Sony's unique Unilinear converter uses a single master clock to eliminate beat-frequency components. Although not as tweaked up as the current generation of home players with eight-times oversampling and 18-bit D/A converters, the CDX-A20 is fully equal to its task. If anything, it could be argued that sonic fidelity beyond that provided by this player is not required for today's moving vehicles with their attendant road noise.

For my listening tests, I loaded the changer with a stack of oldies—*real* oldies from the Thirties, Forties, and Fifties in Angel's "Great Recordings of the Century" CD reissue series. What? Test state-of-the-art digital technology with a recording of Richard Strauss conducting his own music in 1944? You bet.

Don't be suckered by the myopia of modernism—recording engineers have been laying down good tracks ever since wax was introduced, and some early recordings are more accurate than some of the multimicrophone junk foisted on us today.

The real pleasure, of course, was in driving down the road with some of the greatest music making ever. The Sony CDX-A20 conveyed that experience fully and faithfully, cruising effortlessly through treasures of Western music. In the majority of installations, it will certainly be the downstream reproduction equipment—the amplifiers and speakers—that provide the limiting factor in the system's overall sound quality. Be assured that this compact disc source is among the best in car audio—the rest is up to the system you use it in.

All was not roses in my road tests, however. The original DiscJockey, the CDX-A10, provided both a dynamic-range compressor and a surround-sound decoder, and both circuits have been deleted in the CDX-A20. I especially missed the compression feature. Although I understand the need to contain costs, I regard a high-fidelity compression circuit for CD's as an absolute necessity on the road. The dynamic range of the compact disc—even CD's made from forty-year-old recordings!—requires compression if the music is to be heard above the ambient noise of most cars. Sony should get 44,100 lashes for deleting this feature—since this is stereo, better make that 88,200 lashes. Another complaint: Only ten tracks from ten discs can be programmed. Come on you guys, how about another fifty cents' worth of on-board memory?

Still, these complaints aside, the Sony CDX-A20 is a magnificent piece of automotive audio gear. There is no question that any serious car audiophile should consider a CD changer—the advantages are too great to ignore. And the CDX-A20 and RM-X2 Remote Commander combo is perhaps the best incarnation of the changer concept available today. Look into it. And once you have it, you'll wonder how you ever got along without it. *K.P.*  
**Circle 139 on reader service card**

by Ian G. Masters



## Adding an Amplifier

**Q** *I do some small disc-jockey jobs, and I would like to add a second amplifier and pair of speakers to my present system. I have two integrated amps, one with preamp-out/main-in jacks, the other without them. Is there any way I can tie these two amplifiers together and still use my mixer and equalizer?*

JEFF FEDELE  
Pittsburgh, PA

**A** There are several methods, depending on the specific nature of your equipment. Probably the best is to use the amplifier with pre-out jacks as the "master" and the other as the "slave." Simply use a pair of Y-cords to connect the preamp outputs to the main inputs on the master amplifier and to any high-level input on the slave. The input selector and volume control (and the tone controls, if you use them) on the master will control the whole system, so the only adjustment you will have to make on the slave is to use its level control to match the two systems. You may also wish to use the slave's tone controls to compensate for the characteristics of the second set of speakers.

If your equalizer is currently connected between the pre-out and main-in jacks on the master amplifier, simply replace its output cords with Y-cords and connect them to the two amplifiers as above. If the equalizer has two outputs, your connections will be that

much simpler. On the other hand, if you want to have independent control of the two amplifiers, the tape outputs on the master could be used to feed a high-level input on the slave. But this might prevent you from using your equalizer for both amps, depending on where it is connected.

## Recording Levels

**Q** *Can I record at a level higher than that recommended by my cassette deck's manufacturer by using a high-quality tape and an advanced noise-reduction system such as Dolby C?*

RONALD FRANCHINO  
Lyndhurst, NJ

**A** Generally, the premium grades of tape do allow higher signal levels before they reach their saturation point, but, as with any tape, they will only work properly if your cassette deck is set up for them. Every tape requires a very specific amount of bias from a cassette deck to function optimally; any variation in bias will cause degradation of the sound, so you can't simply upgrade your tape and expect better results unless your recorder has been adjusted accordingly.

As for using an advanced noise-reduction system, this would not in itself allow high recording levels—that's a function of the tape. The purpose of both the Dolby C and dbx systems is to provide improved performance at the level you are using now. Higher recording levels, assuming your cassette machine is adjusted for the tape, make these noise-reduction systems less effective than they would otherwise be.

## Crackling Vinyl

**Q** *My phono cartridge is new, and properly installed, but with some records it produces an irritating sound that resembles static. This happens occasionally with LP's, but it's most noticeable with 45's, and it occurs only with high-level passages, usually affecting only the left channel. The sound is always present at the same spot on any record where it happens, but another copy of the same disc may not have it. Is my new stylus more sensitive to this problem than others, or is the fault in the record pressings themselves?*

ROBERT J. GADBOIS  
Salinas, CA

**A** The pressings are probably okay, but I'm afraid your records have been permanently damaged by cartridge mistracking sometime in the past. Unless the stylus is kept firmly in contact with a record's groove it can bounce around, not only causing an extremely

unpleasant noise at the time but also breaking off bits of vinyl. The effect can be cumulative if tracking problems are not remedied, and it is not possible to reverse the damage.

High-level passages are the most susceptible to damage because a stylus has difficulty tracking them even under ideal conditions and is therefore most likely to lose contact. The greater linear speed of a 45-rpm single also makes that format more liable to damage than the LP—the vinyl peaks are moving much faster when the stylus finally crashes down into the groove. And the left channel is often affected more than the right because it is recorded on the outer wall of the groove; a stylus tends to hug the inner wall, particularly if the antiskating mechanism has been imperfectly adjusted, so there is less likelihood that groove contact will be lost in the left channel.

There's nothing much you can do about the records already showing these signs of wear, although listening to them in mono may soften the effect somewhat. You can minimize the chance of further damage by adjusting your stylus tracking force to the top of its range and making sure the antiskating is set correctly. If you continue to hear *new* instances of the problem, edge the tracking force up a bit.

## Recording from CD's

**Q** *I have heard that the outputs of a compact disc player should be connected directly to a cassette deck's inputs to avoid signal loss when recording. Is this true, or is it acceptable to record CD's through an amplifier?*

C. CHARDENSUWAN  
Bangkok, Thailand

**A** Theoretically, the fewer things you put in the way of any audio signal, the better. That is why several amplifiers on the market include bypass circuits that route CD signals around the preamplifier stages, directly to the power-amplification sections, to prevent unnecessary circuitry from degrading the sound. When it comes to recording, however, I doubt that it makes much difference.

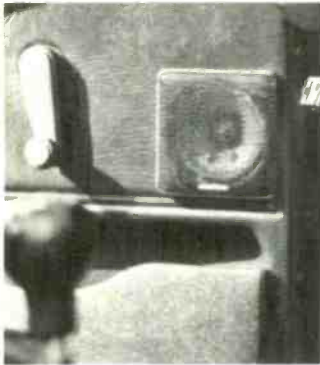
The typical preamplifier, whether part of an amplifier or not, simply takes any high-level signal, such as that from a compact disc player, and routes it to the tape-monitor outputs—there are no active elements in the circuit. The only things that could impede such a signal are the amplifier's input and tape-output jacks themselves and the contacts on the input-selector switch. Unless any of these are *extremely* dirty or corroded, they are unlikely to affect the signal quality audibly. □

# The **Boston** Acoustics

## Installation of the Month Contest



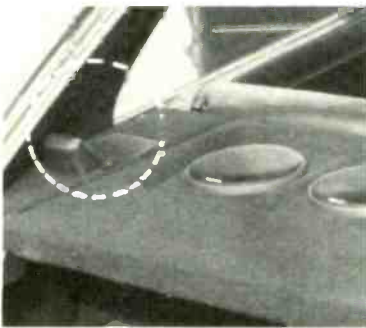
The 1987 VW GTI with this month's winning installation. (For Charles Nicol, GTI now means Great Tunes Inside.)



Boston 741 two-way component system in the front. The system's 4" woofers are mounted half way up the doors for broad dispersion. The patented Varimount tweeters, detached from their modules, are in the factory-dash locations.



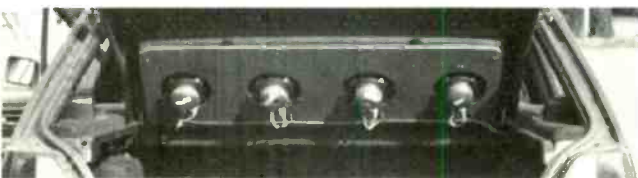
The 741's tweeters, without their removable modules, are located: out of sight under the grilles, in the original factory locations.



The second Boston 741 component system, in the rear deck, with the 4" woofers mounted under the factory grilles. The Varimount tweeters (surface mounted in their modules), face forward for better highs.



The complete rear system includes four Boston 760LF subwoofers mounted in hinged portion of deck. The 760LFs fit perfectly within the available flat surface on the deck.



Raised deck shows the reinforced (1/2" plywood) mounting of 760LF subwoofers. Says winner Charles Nicol of the system's bass response: "Excellent, extended, tight low bass."

### The July winner:

Charles Nicol, Greenland, New Hampshire

Charles Nicol knew what he wanted for the new system in his 1987 VW GTI: "Excellent bass response, overall imaging and sound quality—a full front-to-back sound." Also: "A clean factory look." The result? "A complete success." Four Boston 760LF 6 1/2" subwoofers mounted on the reinforced back deck deliver tight bass. Two pairs of Boston 741 two-way component systems, one in front, one in rear, allowed full use of the existing factory locations. The resultant midrange is, in his words, "clean and smooth." Nice work, Charles. That's why you won.

The winner's dealer: The New Audiophile, North Hampton, NH

The winner's salespersons: Eric Johnson and Steve Drelick

The winner's installation expert: Darryl Dietz

### The winning system:

#### Boston Acoustics speaker systems:

**Front:** 741 two-way component system, with the 4" woofers positioned half way up the door for consistent sound, and the patented 1" Varimount™ tweeters, concealed in the factory dash locations.

**Rear:** Second pair of 741s, with the woofers in the 4 x 6" factory locations, and tweeters on the rear deck, this time in their modules, facing forward. Four 760LF subwoofers are mounted on the hinged portion of the deck.

#### Electronics:

**Alpine:** 7380 cassette/tuner in dash. 3311 EQ/crossover under dash. Amplifiers: 3505 (13 watts x 2) powering the front 741s. 3519 (30 watts x 2) powering the rear 741s, 3528 (30 watts x 4) powering the four 760LF subwoofers.

## How you can be a winner too!

Listen carefully to your present car system, then drive to your Boston Acoustics dealer to hear how much better it can sound with Boston Acoustics speakers. Ask him for the contest rules and requirements. Or call or write us.

If you're proud of your Boston Acoustics car system, tell us all about it. And let's see it in *good* photos showing installation details like those shown at left. Black & white is preferred, though color is acceptable. Either way, we'll need the negatives and prints. Please, no Polaroids or slides.

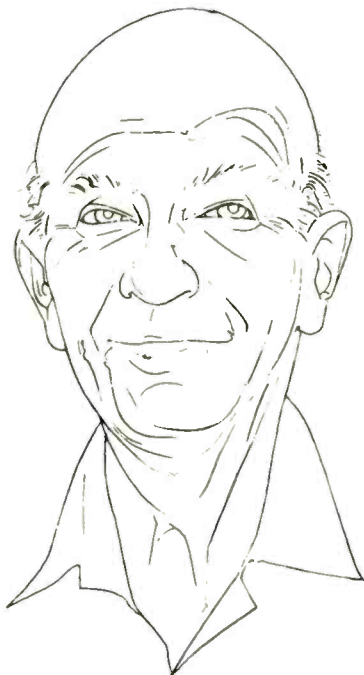
The prizes. Each month through December, we'll announce the winning Installation of the Month in *Stereo Review*. And each month's winner will receive our T830 tower design home loudspeakers. (\$500 suggested retail value.) What's more, the first 500 readers who submit qualified entries between now and October 5 will win a full year's subscription to *Car Stereo Review*. Free! (Newsstand value, \$23.70.)



## **Boston** Acoustics

247 Lynnfield Street Peabody, MA 01960 (617) 532-2111

by Julian Hirsch



## "Fast Bass" and Fast Fourier Transforms

**W**Henever I see the term "fast bass" used as a description of speaker performance, I feel that I am entering the Twilight Zone, where all kinds of illogical things take place. "Fast bass" is an oxymoron, a complete contradiction in terms, making about as much sense as "static speed" or "frigid heat."

"Fast" usually describes an event that takes place during a short time interval. For a sound wave, or the driver motion that creates it, a short time implies the presence of a high frequency, since time is the reciprocal of frequency. Any portion of a complex waveform in which the level changes during a short time interval corresponds to the high frequencies in that signal. The more gradual changes are associated with the lower frequencies.

These are fundamental relationships, not matters of arbitrary definition. One cycle of a 100-Hz waveform has a duration of 10 millise-

conds. A single cycle of a 20-Hz signal lasts 50 milliseconds. Any duration in the order of milliseconds is *slow* by the standards we apply to most music. But, you may ask, "What about the transient impact of the tympani? Isn't that fast?"

It certainly can be, but its subjective "speed" is the result of the high frequencies in the total sound. The woofer may reproduce the bass portion of the total sound, but the tympani's attack transients come from the midrange and tweeter. There can be no "fast" bass transients from any source. The bass portion of a transient is the *slow* build-up and decay of the sound. Under ideal conditions, the higher frequencies "fill in" the waveform to re-create the fast attack or decay that may have existed in the original sound.

This brings us to the matter of *group delay*, one of the measurements we routinely make on loudspeakers, and its importance, at least theoretically, to a realistic transient sound quality. A speaker's group delay, expressed in units of time, is the first derivative (slope) of the plot of the speaker's phase shift versus frequency—in other words, the amount of time delay that is undergone by signal components in different sections of the frequency range. If all frequencies are delayed by the same amount, the high- and middle-frequency transients will reach the listener at the same time as the low frequencies. The drum beat I mentioned above will then be accurately reconstructed in the playback process, emerging as a twin of the original recorded sound.

In general, the motion of a woofer's cone, and thus its acoustic output, will lag somewhat behind the higher-frequency drivers in a multi-

way system, in part because of the woofer cone's greater moving mass. There can also be differences between the delay characteristics of the other drivers if they are not in the same *effective* vertical plane. The result is that the sounds from the several drivers arrive at the listening position at slightly different times. Since each driver handles a different portion of the frequency range, a plot of group delay versus frequency will sometimes show distinct "steps" at the speaker system's crossover frequencies. Keep in mind, though, that it is not the *amount* of group delay that affects the sound you hear, but only its *variation* over the frequency range. After all, programs recorded on disc or tape may have been "delayed" for years after the original performance before you play them, with little or no effect on the sound!

Recognizing that group-delay distortion is undesirable, many speaker designers have attempted to minimize it in various ways. Speakers with uniform group-delay characteristics are often described as "linear-phase" designs. In addition to the physical displacement of the driver planes, which can be corrected by a stepped front panel or by using separate mounting boards or enclosures for the drivers, the drivers themselves have inherent delays, and the crossover networks contribute still more. Since the delay variations from these sources do not necessarily combine in an additive way, the faults of one part can sometimes help compensate for those of another.

It should be pointed out that psychoacoustic studies have not shown any significant correlation between delay variations of the magnitude existing in speaker systems and the sound quality of a system. In fact, studies made using headphones have indicated that delay magnitudes typical of most speakers cannot reliably be detected by human listeners.

Nevertheless, because our IQS FFT analysis system readily provides group-delay measurements on speakers, we have been accumulating data for several years. Most speakers we test show relatively small delay variations across the au-

### Tested This Month

Denon PMA-1520  
Integrated Amplifier  
a/d/s CM5 Speaker  
Soundcraftsmen  
Pro-Control Four  
Preamplifier  
Linn Nexus Speaker

## TECHNICAL TALK

dio range, and, with one possible exception, we have yet to find any obvious relationship between this factor and the imaging or sound qualities of the system. That exception concerns a fundamental difference between conventional forward-firing speakers and omnidirectional or other types of speakers that are designed to create a sound field based on multiple reflections. Such multiple arrivals create a very uneven, ragged frequency response at any one location in the room, with a correspondingly large and irregular group-delay characteristic. The spacious, open quality of the sound from these speakers, which in some respects seems more "natural" than the sound from conventional systems, comes at the expense of the precise stereo imaging favored by many listeners.

While there is certainly a relationship between the frequency-response/group-delay curves and the very different sound qualities of these two basic categories of speakers, there is no clear superiority of one over the other. Another explanation for the audible insignificance of group-delay distortion is the prevalence of multimiked recordings, since multimiking completely obliterates any unique phase relationships that might have existed in the program at the time of recording. For these and other reasons, group-delay variations and phase shift in speakers seem to me to be about as inconsequential as "fast bass" response.

Incidentally, my references to FFT analysis could probably use some clarification here. It is a technique that enables us to measure the frequency response, phase shift, and group delay of a speaker with minimal interaction from the reflections that occur in a real ("live") room. The letters stand for *fast Fourier transform*, a mathematical process that converts signals from the time domain (such as a pulse) to the equivalent frequency response. Although there are numerous highly sophisticated (and expensive) dedicated FFT analyzers, our needs are met by a plug-in circuit board for a personal computer.

The FFT system drives the speaker, through an external amplifier,

*Psychoacoustic studies have not shown any significant correlation between group-delay variations of the magnitude existing in loudspeaker systems and the sound quality of a system.*

with a short series of narrow pulses. For most measurements the pulse width is about 15 microseconds, although for very low-frequency measurements it can be much longer. A microphone (ours is a Bruel & Kjaer 4133, which has a flat frequency response extending far below and above the audio range) picks up the acoustic impulse from the speaker, and the computer processes the signal from the microphone to produce a frequency-response plot on the monitor or a printer. Although the analysis involves many tens of thousands of computations, it takes only a few seconds.

The special value to us of FFT analysis lies in its ability to exclude much of the reflected energy reaching the microphone from the various room surfaces. A combination

of the delayed reflections with the original signal results in a ragged, uneven frequency response. It is usually possible to truncate or shorten the analyzed sample to exclude major reflections, leaving only the direct signal. This provides a smoother, more easily interpreted frequency-response plot. A variation on the basic response graph is the "waterfall" display, which simultaneously shows frequency, time, and amplitude information over a longer period than the single measurement. Such a display helps us to identify the sources of some of the aberrations visible in the response plots for many speakers (such as diffraction from a cabinet edge, reflection from the floor or wall, and so forth).

The FFT measurement is *quasi-anechoic*, as opposed to a live-room measurement. True anechoic chambers are large and expensive, and many smaller speaker companies use FFT analysis instead in their design and manufacturing stages. It doesn't tell you everything you may want to know about a speaker, but neither does any other measurement technique. The final test must be a listening evaluation, of course, but the more solid, scientific information you have, the more reliable will be your interpretation of what you hear. □



*"... Dan, it looks like you've come up with a pretty decent long-throw woofer! Now we've got to find a way to control the excursion!"*

# HOME IMPROVEMENT.







## THE ELITE™ PD-91 FULL 18-BIT CD PLAYER.

If you're still not completely satisfied with CD sound, if you have the nagging feeling something's still missing...you're right. 14-bit, 16-bit or even "floating" 18-bit CD players simply can't deliver all the rich potential of compact disc sound.

It's time for a little Home Improvement—a brilliant improvement at that.

Meet the Elite™ Series PD-91. The compact disc player that lets you hear CD sound in its fullest glory.

The PD-91 employs 8 times oversampling and full 18-bit linear twin D/A converters to yield an amazing 16-fold improvement in retrieval of ambient cues, harmonic detail and "air" around instruments and vocalists. It's an improvement so dramatic your ears will perk up instantly.

SEE DEALER LISTING ON PAGE 98

To build a player this superior demanded incredible attention to detail. Example: The PD-91's analogue circuitry is pure Class A for lowest distortion and highest musicality. Inside, you'd see four separate power supplies and eleven voltage regulators—to keep critical small-signal audio information free from interference. To additionally minimize electrical interaction, portions of the PD-91's circuitry are defeatable—like front panel illumination, headphone amplifier and the analogue output section when digital outputs are being used.

The PD-91 incorporates an outboard power transformer, Pioneer's exclusive copper-plated honeycomb chassis and special ceramic components to combat extraneous vibrations that can destroy signal integrity.

The PD-91's special linear motor delivers the world's fastest track access (1/2-second). You also get flexible seven-way programming, full random play, and, of course, full remote control. Optical as well as coaxial outputs make the PD-91 future-perfect as well.

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JOOK LEUNG

## DENON PMA-1520 INTEGRATED AMPLIFIER

*Julian Hirsch, Hirsch-Houck Laboratories*

**D**ENON'S PMA-1520 is one of a growing number of integrated amplifiers with built-in digital-to-analog (D/A) converters that enable them to accept digital output signals from a CD player or digital audio tape (DAT) deck and convert them to analog form. The main benefit claimed for this feature is the elimination of any signal degradation, such as noise, hum, or crosstalk, in the transfer from the source to the amplifier.

In addition to electrical and optical digital input connections for a CD player or DBS (direct broadcast satellite) source, the PMA-1520 has

both kinds of digital input/output jacks for use with a DAT recorder. It also has a full complement of analog signal-processing and control features. Flat pushbuttons on the front panel, which operate with almost no physical travel, select the input source. Along with the digital inputs and a phono input, there are provisions for four high-level analog sources—AUX(iliary) 1, AUX 2, tuner, and CD—and inputs and outputs for two analog tape decks.

A large volume knob is at the right of the panel, with smaller knobs used for the balance, bass, and treble controls. Bar switches control speaker selection and tape

MONITOR/COPY, which connects the analog decks for dubbing in either direction or selects the output of the D/A converters or another analog source for recording. A third bar switch is marked SOURCE SELECTOR. Actually an adjunct to the input-selector buttons, it can insert a subsonic filter into the signal path or put the amplifier into its CD DIRECT mode, in which the input-selector buttons and the tape-monitor loops are bypassed and only the source connected to the CD inputs is heard.

Small pushbuttons place the tone controls into the signal path, drop the audio level by 20 dB, activate the loudness-compensation circuit, and switch the phono preamplifier for either a moving-coil (MC) or moving-magnet (MM) cartridge. A DIGITAL DIRECT button connects the internal D/A converters to either the electrical or optical digital inputs and connects the converter's

## TEST REPORTS

output to the analog amplifier stages. Like CD DIRECT, the DIGITAL DIRECT button bypasses the normal input switches and tape loops.

The PMA-1520 features Denon's "Optical Class A" technology, a form of variable-class circuit design. The bias of the output transistors is switched between two levels by an extremely fast peak-detection circuit that monitors the input signal's waveform. The actual switching is done through an optical link that isolates the signal-carrying circuits from any spurious noise arising from the digital control signals. At low signal levels the output transistors are biased close to cutoff, like a Class AB amplifier, but because of

the small signal amplitude they are always conducting some current and in effect are operating as a low-distortion Class A amplifier. At higher signal levels the bias shifts to a normal (fully on) Class A level, again providing the low distortion of a Class A amplifier in this important part of the program range. At still higher levels the bias returns to its lower value, but because of the high signal amplitude the amplifier now operates in Class AB, which gives it lower heat dissipation and higher power output than is possible in Class A.

The power-amplifier section of the Denon PMA-1520 is rated to deliver up to 130 watts per channel

into 8-ohm loads, from 20 to 20,000 Hz, with no more than 0.005 percent total harmonic distortion. It also carries dynamic power ratings of 300 and 400 watts per channel into loads of 4 and 2 ohms, respectively. The rear apron has gold-plated RCA-type jacks for all signal connections. The PRE OUT/MAIN IN jacks are normally joined by jumpers, which can be removed for inserting a signal-processing accessory into the signal path. Insulated multiway binding posts are used for the outputs to two pairs of speakers. There are three AC convenience outlets, two of them switched.

The PMA-1520 is a large, heavy amplifier, measuring 17 inches wide, 13 $\frac{3}{4}$  deep, and 6 $\frac{1}{4}$  inches high (including its large mounting feet). Its weight is 28 pounds. Price: \$1,000. Denon America, Inc., Dept. SR, 222 New Rd., Parsippany, NJ 07054.

### Lab Tests

At its clipping point, the Denon PMA-1520 delivered 155 watts per channel into 8-ohm loads, 218 watts into 4 ohms, and 271 watts into 2 ohms. The distortion was in the vicinity of 0.004 percent for power outputs up to 150 watts (8 ohms). It was only slightly higher with 4- and 2-ohm loads. At the rated 130-watt output, the distortion was typically 0.004 percent, reaching 0.008 percent at 20,000 Hz. Lower power levels always produced lower distortion readings. Our dynamic power readings surpassed Denon's specifications by a comfortable margin, with respective outputs of 196, 338, and 528 watts into loads of 8, 4, and 2 ohms.

The bass tone control shifted the turnover frequency between 100 and 500 Hz, and the treble curves were hinged at about 2,000 Hz. The loudness compensation boosted both low and high frequencies as the volume was reduced. The response with the subsonic filter engaged was down 2.5 dB at 20 Hz. The RIAA phono equalization was accurate within +0.15, -0.35 dB from 20 to 20,000 Hz.

To evaluate the D/A converters of the PMA-1520, we used a Denon DCD-1500 II CD player, which has both electrical (coaxial) and optical

### FEATURES

- Optical and electrical inputs for digital sources (CD, DAT, DBS)
- Quadruple-oversampling D/A converters (two per channel)
- Automatic adjustment for digital sampling rates of 32, 44.1, or 48 kHz, with front-panel display of rate
- Power-amplifier section with "Optical Class A" variable-class circuit design
- Analog inputs for four high-level sources, two tape decks, and MM or MC phono cartridge
- Pushbutton-controlled electronic switching for input selection
- Signal circuits shielded and isolated from power supply
- Bass and treble tone controls with bypass switch
- Switchable loudness compensation
- Audio muting to reduce volume 20 dB
- Switchable subsonic filter
- CD DIRECT mode to bypass tape loops and input-selector circuits
- DIGITAL DIRECT mode to connect internal D/A converters, bypass tape loops and analog input-selector circuits
- Front-panel selection for two pairs of speakers with multiway insulated binding posts on rear
- Front-panel headphone jack
- Gold-plated signal connectors

### LABORATORY MEASUREMENTS

#### Amplifier Section

##### 1,000-Hz output power at clipping:

155 watts into 8 ohms, 218 watts into 4 ohms, 271 watts into 2 ohms

**Clipping headroom** (relative to rated output): 0.76 dB (8 ohms)

**Dynamic power output:** 196 watts into 8 ohms, 338 watts into 4 ohms, 528 watts into 2 ohms

**Dynamic headroom:** 1.78 dB (8 ohms)

**Harmonic distortion** (THD + noise) at 1,000 Hz into 8 ohms: 1 watt, 0.013%; 10 watts, 0.0044%; 130 watts, 0.0029%

**Maximum distortion** (20 to 20,000 Hz into 8 ohms): 0.0081% at 130 watts (20,000 Hz)

**Sensitivity** (1-watt output into 8 ohms): CD, 16 mV; MM phono, 0.25 mV; MC phono, 0.02 mV

**Phono-input overload** (MM): 87 to 185 mV

**A-weighted noise** (referred to a 1-watt output): CD, -83 dB; MM phono, -70 dB; MC phono, -76 dB

**Phono-input impedance:** 47,000 ohms in parallel with 130 pF

**RIAA equalization error:** +0.15, -0.35 dB from 20 to 20,000 Hz

**Tone-control range:** 100 Hz, +9.5, -8.5 dB; 10,000 Hz, +8, -9 dB

#### Digital Section

**Frequency response:** 20 to 18,000 Hz +0.5, -0.05 dB

**Distortion** (THD): 0.003% referred to 0 dB, 0.004% referred to -10 dB, 0.007% referred to -20 dB

**Signal-to-noise ratio** (A-weighted): 105.5 dB

**Dynamic range:** 96 dB

**Channel separation:** 80 dB at 1,000 Hz, 66 dB at 20,000 Hz

**Maximum phase shift:** 3.6 degrees at 20,000 Hz

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362228. George Michael—Faith. (Columbia)



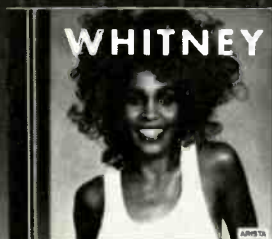
364695. Wynton Marsalis—Baroque Music For Trumpets. (CBS Masterworks)



366443. Various Artists—Good Morning Vietnam. (A&M)



361402. Tiffany. (MCA)



365154. Whitney Houston—Whitney. (Arista)

# A Sound Investment



365494. George Harrison—Cloud Nine. (Dark Horse)



366716. Robert Plant—Now and Zen. (Epic)



365489. James Taylor—Never Die Young. (Columbia)



364018. Foreigner—Inside Information. (Atlantic)

354449. U2—The Joshua Tree. (Island)

336396-396390. Billy Joel's Greatest Hits, Vol. 1 & 2. (Columbia)

339226. Gershwin: Rhapsody in Blue; more. Thomas, Los Angeles Phil. (Digital—CBS Masterworks)

342097. Barbra Streisand—The Broadway Album. (Columbia)

343665. Debussy: La Mer; Nocturnes—Michael Tilson Thomas. (Digital—CBS Masterworks)

343715. Vivaldi: Four Seasons—Matzel cond. (Digital—CBS Masterworks)

344184. Copland: Billy The Kid/Rodeo Ballets—Slatkin, St. Louis Sym. (Digital—Angel)

344622. Anita Baker—Rapture. (Elektra)

345199. Beethoven: Overtures—Bavarian Radio Orch., C. Davis. (Digital—CBS Masterworks)

346544. Kenny G—Duotones. (Arista)

346957. Steve Winwood—Back In The High Life. (Island)

347492. Glenn Miller Orchestra—In The Digital Mood. (Digital—GRP)

347567. Gershwin's Song Book & Other Music For Piano Solo—Leonard Pennario. (Angel)

348318. The Police—Every Breath You Take—The Singles. (A&M)

348458. Dvorak: Cello Concerto—Yo-Yo Ma; Mazzei, Berlin Philhar. (Digital—CBS Masterworks)

354902. Fleetwood Mac—Tango In The Night. (Warner Bros.)

355164. Vladimir Horowitz Plays Favorite Encores. (CBS Masterworks)

355172. Ravel: Rapsodie Valse/Pavane/Alborada, etc.—Previn, Royal Phil. (Digital—Angel)

348649. Pachelbel Canon & Other Digital Delights—Davis, Toronto Chamber Orch. (Digital—Fanfare)

348987-398982. Linda Ronstadt—'Round Midnight. (Asylum)

349134-399139. Beethoven: Sonatas Piano & Violin, Vol. 2—Stern, Istomin. (Digital—CBS Masterworks)

349985. Johnny Mathis/Henry Mancini—The Hollywood Musicals. (Columbia)

350587. Kathleen Battles Sings Mozart. (Angel)

352534. Holst: Planets—A. Davis, Toronto Symph. (Digital—Angel)

353771. Bolling/Rampol: Suite #2 for Flute & Jazz Piano Trio. (Digital—CBS)

354514. Jody Watley. (MCA)

354951. Mozart: Flute Quartets—Rampol, Stern, Accardo, Rostropovich. (Digital—CBS Masterworks)

354985. Billie Holiday—From The Original Decca Masters. (Digitally Remastered—MCA)

355115-395111. Prince—Sign 'O' The Times. (Paisley Park)

347955. Huey Lewis & The News—Fore! (Chrysalis)

355362. Whitesnake. (Geffen)

355578. Hanson: Symphony No. 2 ("Romantic"), Barber; Violin Concerto. Oliveira, Slatkin, St. Louis Sym. (Digital Angel)

356279. Gloria Estefan And Miami Sound Machine—Let It Loose. (Epic)

356329. Randy Travis—Always & Forever. (Warner Bros.)

356667. Heart—Bad Animals. (Capitol)

357640. Wynton Marsalis—Standard Time. (Columbia)

356501. Benson/Klugh—Collaboration. (Warner Bros.)

357087. Grateful Dead—In The Dark. (Arista)

357350. Duke Ellington Orchestra—Digital Duke. (Digital—GRP)

357368. Hiroshima—Go. (Epic)

357657. Beethoven: Piano Concerto No. 5—Murray Perahia. (Digital—CBS Masterworks)

365825. Billy Ocean—Tear Down These Walls. (Live/Arista)

357871. Tchaikovsky: Waltzes—S. Commission and Houston Symphony. (Digital—Pro Arte)

357889. Copland: Billy The Kid; Appalachian Spring; etc.—Bernstein, NY Phil. (Digitally Remastered—CBS Masterworks)

358127. Kronos Quartet—White Man Sleeps. Valons; Ives; Bartok; etc. (Digital—Nonesuch)

359927. Debbie Gibson—Out of the Blue. (Atlantic)

360016. Spyra Gyra—Stories Without Words. (Digital—MCA)

361022. Tchaikovsky: Symphony No. 6—Claudio Abbado, Chicago Symph. Orch. (Digital—CBS Masterworks)

361048. Diane Schuur and the Count Basie Orchestra. (Digital—GRP)

361139. R.E.M.—Document. (I.R.S.)

361147. Rodgers And Hammerstein's Carousel. Barbara Cook; Samuel Ramey. (Digital—MCA Classics)

367102. Joni Mitchell—Court and Spark. (Asylum)

358929. Elton John Live In Australia. (MCA)

358937. Handel: Music For The Royal Fireworks—Yehudi Menuhin, Royal Philharmonic Orchestra. (Digital—MCA Classics/RPO)

359018. Pat Metheny Group—Still Life (Talking). (Geffen)

359075. Aerosmith—Permanent Vacation. (Geffen)

359695. Sarah Vaughn—Brazilian Romance with Milton Nascimento. (CBMA)

359711. Brahms: Piano Quartet, Op. 25—Murray Perahia, Members Of The Amadeus Quartet. (Digital—CBS Masterworks)

361170. Yes—Big Generator. (Atco)

361279. World's Greatest Overtures—Strauss, Suppe, more. (Digital—Pro-Arte)

## Classics of the 50's, 60's and 70's

138586. Bob Dylan's Greatest Hits. (Columbia)

219477. Simon & Garfunkel's Greatest Hits. (Columbia)

231670. Janis Joplin's Greatest Hits. (Columbia)

244459. Santana's Greatest Hits. (Columbia)

246868. Jim Croce—Photographs & Memories—His Greatest Hits. (Sajia)

260638. Chicago's Greatest Hits. (Columbia)

269365. The Band—The Best Of The Band. (Capitol)

286914. Fleetwood Mac—Rumours. (Warner Bros.)

287003. Eagles—Their Greatest Hits 1971-1975. (Asylum)

291278. The Doobie Brothers—Doobie's Doobies. (Warner Bros.)

291526. Emerson, Lake & Palmer—Brain Salad Surgery. (Atlantic)

292243. Jackson Browne—The Pretender. (Asylum)

292284. James Taylor—Sweet Baby James. (Warner Bros.)

293597. Led Zeppelin—Houses Of The Holy. (Atlantic)

308049-398040. Creedence Clearwater Revival Featuring John Fogerty—Chronicle. 20 greatest hits! (Fantasy)

319996-399998. Motown's 25 #1 Hits From 25 Years. (Motown)

327742. The Best Of Kansas. (CBS Assoc.)

341073. A Decade of Steely Dan. (MCA)

342501. The Byrds Greatest Hits. (Columbia)

351957. Yes—Fragile. (Atlantic)

343657. Chuck Berry—The Great Twenty-Eight. (Chess)

345157. Jethro Tull—Aqualung. (Chrysalis)

346445. Beech Boys—Made In U.S.A. (Capitol)

348110. Buddy Holly—From Orig. Master Tapes. (Digitally Remastered—MCA)

349803. Van Morrison—Moondance. (Warner Bros.)

350645. Rolling Stones—Sticky Fingers. (Rolling Stones)

353102. Jimi Hendrix—Are You Experienced? (Reprise)

357616-397612. The Best Of The Doors. (Digitally Remastered—Elektra)

358887. Grateful Dead—Workingman's Dead. (Warner Bros.)

364935. Traffic—John Barleycorn Must Die. (Island)



## TEST REPORTS

digital outputs as well as conventional analog audio outputs. First we measured frequency response, noise, distortion, channel separation, phase shift, and low-level D/A converter error directly from the CD player. Then we connected the player to the PMA-1520 at the optical digital input and repeated all the measurements using the amplifier's D/A converters and measuring at its preamplifier outputs.

Although most of the differences we found were slight, almost all of them favored the conversion circuits in the CD player. For example, the player's own frequency response was very flat, varying only 0.2 dB overall from 20 to 20,000 Hz. Through the amplifier's digital circuits, the response was flat within 0.05 dB up to 6,000 Hz, but it rose to a 0.5-dB peak at 17,000 Hz and dropped off sharply above 18,000 Hz. The channel separation of the CD player was 20 to 30 dB better than the values measured through the amplifier, greater than 110 dB at 1,000 Hz and 87 dB at 20,000 Hz compared with corresponding readings through the amplifier of 88 and 66 dB.

On the other hand, the low-level linearity of the converters in the amplifier was extraordinarily good, by far the best we have yet seen, with errors not exceeding 0.5 dB from -70 to -100 dB. In contrast, the CD player's errors were 3 to 6 dB in this range, which is still better than average for the CD players we have tested. The interchannel phase shift of the player at 20,000 Hz was a barely measurable 0.36 degree, but the amplifier's circuits showed a 3.6-degree shift—still much better than most CD players or amplifiers and entirely negligible. Measurements using the amplifier's electrical instead of optical digital connections did not disclose any differences between them.

### Comments

Considered only as an audio amplifier, the Denon PMA-1520 is an excellent product. It is among the more powerful integrated amplifiers currently available, it has all the expected control features, and it provides excellent performance in every respect. Although fairly ex-

pensive, it is priced competitively with similarly rated amplifiers.

Removing the top cover of the amplifier revealed the separately shielded compartments that house its critical digital and analog circuits. The power supply, with its massive toroidal transformer, is on the opposite side of the chassis from the sensitive circuitry. The PMA-1520 is built the way one expects a \$1,000 amplifier to be built—with no apparent compromises and an obvious attention to detail.

Once we learned the functions of some of the less conventional controls, we were able to appreciate the full capabilities of the PMA-1520. The control nomenclature was not always helpful, since similar names mean different things in other products. For instance, in other amplifiers we have used CD DIRECT bypasses all tone controls and filters, and sometimes even the balance control, leaving only the volume control and amplifier circuits in the signal path. In the PMA-1520, it replaces any other selected program source with the analog CD input signal and bypasses the tape-monitoring loops. The tone controls are still active, however (they can be bypassed by a button between their knobs). Since tape connections are often used for inserting a signal-processing device, such as an equalizer, into the signal path, the design of the PMA-1520's CD DIRECT switch is apparently intended to insure minimal modification of the CD signal before it reaches the speakers.

Since the digital inputs do not pass through the normal signal path,

the DIGITAL DIRECT button has a function for those sources similar to the role of CD DIRECT in playing CD programs in their analog form. It, too, replaces the normal signal input with the CD player's output, received in digital form and converted to analog by the amplifier's D/A circuits. It also bypasses the tape loops but leaves the tone-control functions intact.

When we discovered the frequency-response difference between the D/A converters in the amplifier and the CD player, we listened carefully to see if it could be heard. In general, it could not, although with programs having a lot of content at the uppermost audio frequencies the difference was audible.

Our "bottom line" on the Denon PMA-1520 is that it is a fine amplifier equipped with a very good D/A converter section. As with similar amplifiers we have tested, we are not yet convinced of the practical benefits of a built-in converter. Even where such converters measure better than those of a given CD player, which is rarely the case, whatever differences exist have been audibly insignificant. Perhaps the benefit would be clearer if an inexpensive CD player were used with an amplifier like the PMA-1520, though at present most of the less expensive CD players do not have digital outputs. In any case, there is certainly no disadvantage to the inclusion of this feature, and the PMA-1520 is well worth consideration whether or not you expect to use its D/A conversion circuitry.

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### ADS CM5 SPEAKER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE a/d/s/ CM5 is the smallest and least expensive member of the company's Compact Monitor series of speaker systems. It is a true mini-speaker, measuring only 9¾ inches high, 5¾ inches wide, and 6⅞ inches deep, though it weighs a surprising 11 pounds, 10 ounces. The CM5 is a two-way system with a 5-inch woofer, operating in a sealed acoustic-suspension enclosure, that crosses over to a 1-inch dome tweeter at 2,000 Hz. The crossover network employs a four-pole (24-dB-per-octave) Linkwitz-Riley network, which makes possible a nearly seamless frequency-response transfer from one driver to another and a radiation pattern that is nearly constant with frequency.

The a/d/s/ Compact Monitor series makes extensive use of high-tech plastics. In the tweeter dome, a proprietary copolymer plastic material is used for its combination of strength, rigidity, low mass, and exceptional freedom from ringing.

The dome is bonded to a Kapton voice-coil former whose desirable qualities include strength, low mass, and thermal isolation between the voice coil and the dome. The voice coil is damped and cooled by a magnetic fluid in its gap.

A different copolymer is used for the woofer cone, whose butyl-rubber surround minimizes acoustic reflections from the cone's edge. The woofer's voice-coil former is made of stainless steel, whose stiffness gives it a different resonant frequency from that of the cone's apex; if their resonances were the same it could cause roughness in the speaker's output.

The cabinets used in the Compact Monitor series are molded from still another copolymer material that is filled with a very heavy metallic mineral compound whose acoustic inertness greatly reduces the effect of cabinet vibrations on the sound of the system. The high density and strength of their cabinets give these speakers the sort of acoustic per-

formance rarely found in their size class.

The CM5 system's impedance is rated at 4 ohms and its sensitivity as 86 dB sound-pressure level (SPL) at 1 meter with a 1-watt input. Its frequency response is specified as 82 to 20,000 Hz  $\pm$  3 dB. The speaker is recommended for use with amplifiers rated between 15 and 75 watts per channel, and it has an automatic solid-state tweeter-protection circuit that is triggered by either thermal or electrical overload.

The speakers are finished in matte black with frameless perforated-steel grilles that snap out and in easily. Gold-plated multiway binding posts are recessed into the rear of the cabinets. Price: \$650 a pair. a/d/s/, Dept. SR, One Progress Way, Wilmington, MA 01887.

#### *Lab Tests*

We placed the a/d/s/ CM5 speakers on stands about 26 inches high and a couple of feet from the wall behind them for our listening tests and room measurements. The smoothness of the tweeter response was apparent even in the room curve, which showed a 3-dB overall variation from 1,100 to 13,000 Hz and a slightly rising output above 13,000 Hz. The close-miked woofer response reached its maximum at 200 Hz and was down 6 dB at 82 Hz, rolling off at 12 dB per octave below that frequency. Splicing the bass curve to the room curve yielded a composite frequency response of  $\pm$  5 dB from 70 to 20,000 Hz.

Our quasi-anechoic FFT measurements of the on-axis response showed a variation of  $\pm$  3.5 dB from 180 to 23,000 Hz or, combining two FFT plots, of  $\pm$  5 dB from 60 to 27,000 Hz. Measurements taken on-axis and 45 degrees off-axis showed only minor response differences up to about 8,000 Hz and a falling off-axis output at higher frequencies. A slight ringing was measurable at about 9,000 Hz, apparently because of a tweeter resonance.

The impedance of the CM5 reached a minimum of 3 ohms at 230 Hz. At the bass resonance frequency of 90 Hz, the impedance rose to 12 ohms, and its maximum value of 26 ohms was reached at 2,250 Hz. The system's sensitivity



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## TEST REPORTS

was a bit lower than rated, 82 dB SPL at 1 meter with a 2.83-volt input of pink noise. Since we measure woofer distortion with an input equivalent to a 90-dB SPL, the CM5 was driven at a 7-volt level for this test. The distortion was 1.15 percent at 100 Hz, increasing slowly to 2.85 percent at 80 Hz and 5.1 percent at 70 Hz. At lower frequencies the distortion, which consisted almost entirely of third harmonics, increased rapidly, reaching 16 percent at 50 Hz, where we halted the test.

In our pulse power tests with single-cycle tone bursts, the CM5's woofer cone reached its maximum excursion and emitted loud sounds of distress at a 100-Hz input of 90 watts into its 11-ohm impedance. At 1,000 Hz (still in the woofer's range), however, our amplifier clipped at 860 watts into 8 ohms with no signs of overload from the speaker, and at 10,000 Hz the amplifier's maximum output of 825 watts into 8 ohms also presented no problems to the speaker.

### Comments

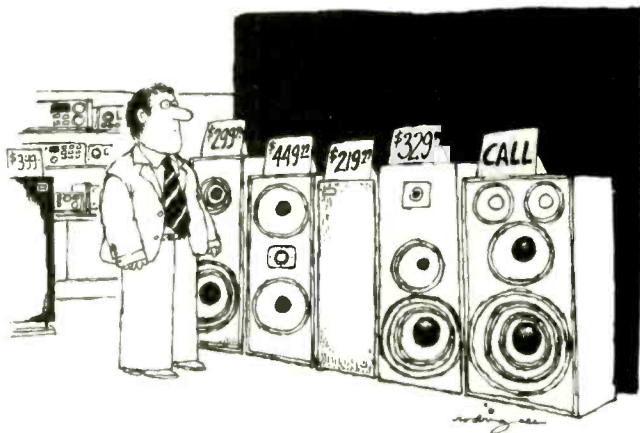
Our measurements of the CM5 essentially confirmed the claims a/d/s/ makes for this impressive little speaker. It had a very wide, smooth response, excellent dispersion, and all the power-handling ability one could ask for given its diminutive drivers. The chief difference between its specifications and our test results was in the sensitivity measurement, in which we usually come very close to a manufacturer's ratings but occasionally depart considerably (generally downward).

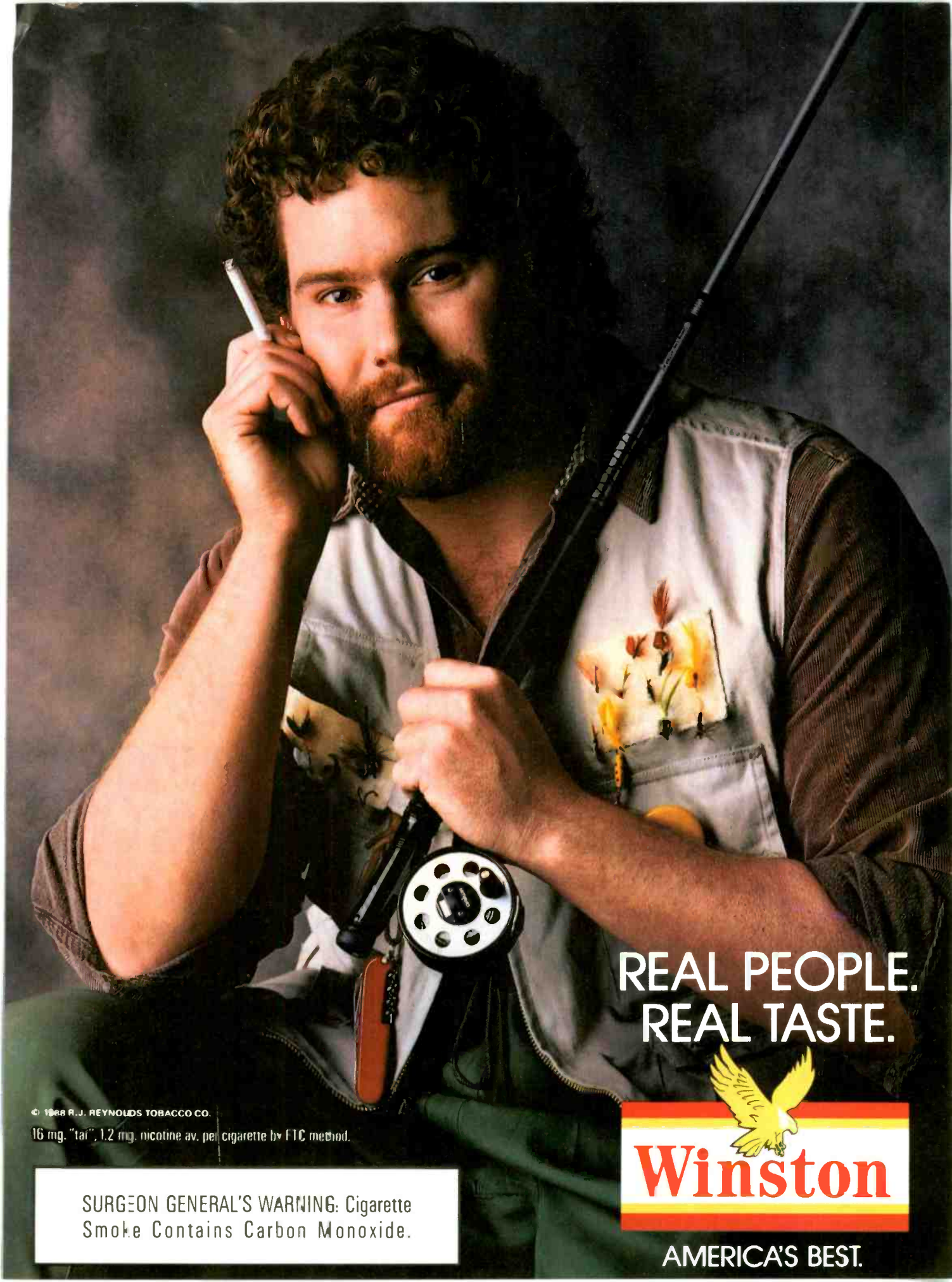
In any case, no one would (or should) expect to rattle the walls with a pair of CM5's. That is not what they were intended to do. What they *are* designed for is reproducing music at normal listening levels, in normal rooms, with a quality that meets hi-fi standards. And that they do very well.

The a/d/s/ CM5 sounds like a rather good full-size speaker system, with a smooth, unified sound character and not a hint of the pinched or nasal quality that afflicts most other minispeakers. Naturally, the CM5 doesn't have any "real bass" output, but you might be surprised to hear how effectively an accurate response down to 80 Hz can convey a believable mid-bass sound. As for playing loud, except in the low bass these little giants have no problems. We did not limit ourselves to lower-powered amplifiers; in fact, most of our listening was done with 100- to 150-watt amplifiers, and even when they were played quite loud both the speakers and the listeners' sensibilities emerged unscathed. We did not trip the tweeter-protection device, but our pulse power tests made it clear that a woofer overload would not be overlooked!

As a casual addition to a TV set or a mass-market audio system the CM5 might be a case of overkill. For enjoyable, listenable sound with almost any component system in a limited-space installation, it could be just what you need. I suspect that a lot of people would have a hard time believing that such little boxes were producing such good sound.

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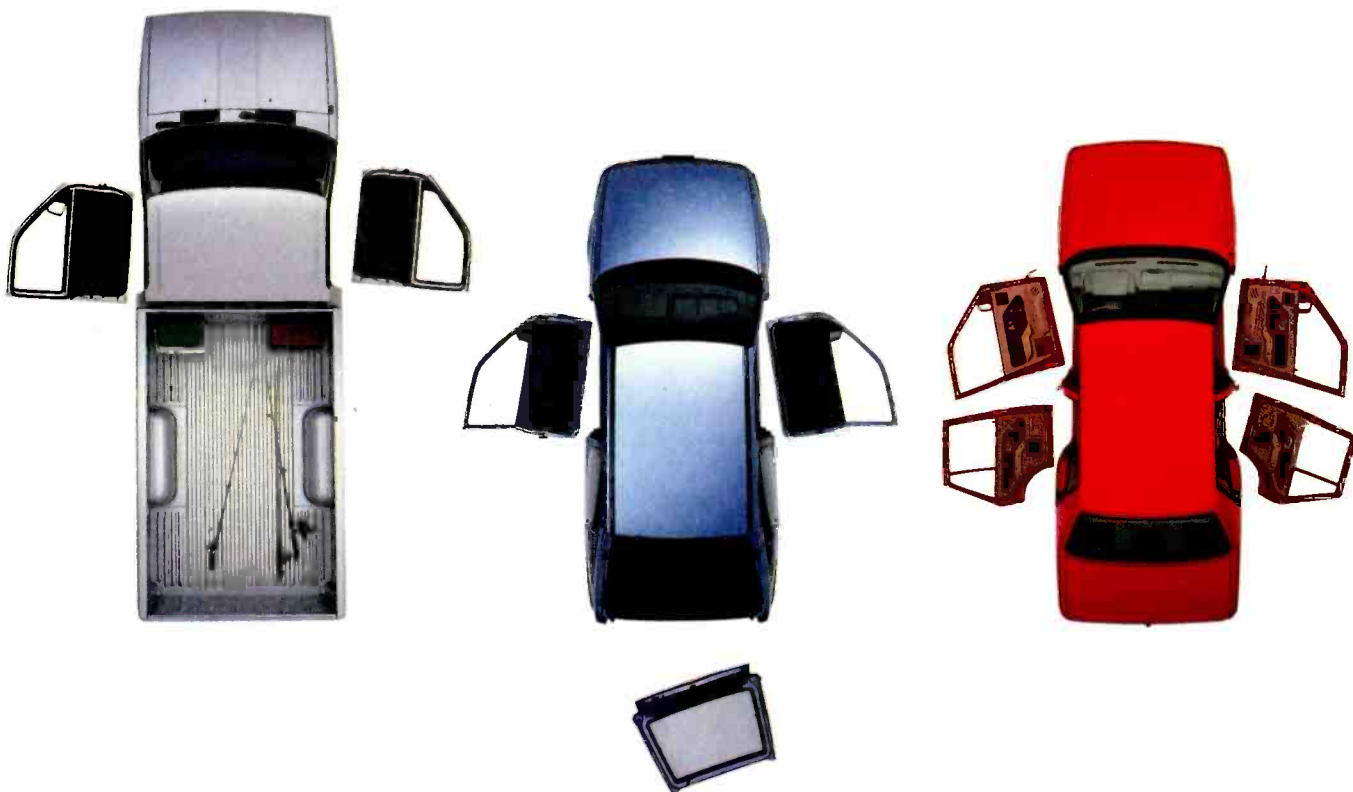
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JOOK LEUNG

## SOUNDCRAFTSMEN PRO-CONTROL FOUR PREAMPLIFIER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Soundcraftsmen Pro-Control Four preamplifier is a highly versatile stereo control center in which all signal routing is carried out by solid-state (C-MOS) electronic switching circuits. In addition to eliminating unreliable mechanical switches, the solid-state switching circuitry allows the signal paths to be located near the input and output jacks on the rear printed-circuit board, close to the actual switching elements. All of the signal inputs are buffered, or electrically isolated from each other, which, in combination with the switching system, minimizes the noise and crosstalk that can be introduced when several signal sources are brought to common switching points.

Signal switching in the Pro-Control Four is done through DC volt-

ages controlled by front-panel soft-touch pushbuttons. The preamp's only knobs are for volume, balance, and bass and treble tone controls. The large volume knob carries a green LED "pointer," and the smaller tone and balance knobs are center-detented.

The input source is selected by pressing the LISTEN button, which steps the switches in sequence to the next available input: CD, tuner, phono, TAPE 1, TAPE 2, VID/AUD 1, VID/AUD 2, and VID/AUD 3 (the last three are high-level inputs that are electrically equivalent to the CD and tuner inputs). The selected source is indicated by a green LED on the front panel above its name. Since input switching is possible only in the indicated sequence, a number of button operations may be necessary to make a change—for example, the

button must be pressed seven times to get from tuner to CD.

Below the LISTEN button is an identical button marked RECORD. Used like the LISTEN button, it selects the program source to be made available at the tape-recording outputs. The selection is indicated by a red LED below its name. The total independence of listening and recording program selection is one of the novel features of the Pro-Control Four. It is possible to record any source on any or all of the five VID/AUD or tape circuits while listening to it or any of the others.

Additional pushbutton selectors, marked LOOP 1 and LOOP 2, control two independent external-processing circuits. Signal-processing devices such as equalizers or ambience enhancers can be connected to these circuits and switched either into the listening signal path or into the signal path going to the selected tape recorder. Red and green LEDs show the status of these circuits in the same fashion as the main signal-source indicators. Another button toggles a subsonic filter into and out of the listening or recording signal path, or into both at the same time. Finally, the DIRECT button bypasses

# TEST REPORTS

all extraneous circuits, including the external loops, subsonic filter, and tone controls, leaving only the volume and balance controls in the signal path.

Power is switched on and off by another light-touch button; since at least one signal-input source is always connected when the preamplifier is turned on, its LED serves as a power pilot light. There is a stereo headphone jack on the front panel. The rear apron is well populated by RCA-type input and output connectors (the phono inputs are gold-plated). There are also two sets of main output jacks, one for normal and the other for AUTO-BRIDGE operation. The AUTO-BRIDGE outputs shift the signals into a reversed-phase configuration relative to the normal outputs, enabling the preamplifier to drive a pair of standard stereo power amplifiers in a bridged mode, which typically more than doubles their normal output power. There are also two AC outlets, a switched one rated for 600 watts and an unswitched one rated for 550 watts.

The Soundcraftsmen Pro-Control Four is finished in charcoal gray with white markings. It measures 19 inches wide, 10½ inches deep, and

3½ inches high, and it weighs 10 pounds. Price: \$699. Soundcraftsmen, Dept. SR, 2200 S. Ritchey St., Santa Ana, CA 92705.

## Lab Tests

No instructions were provided with the Pro-Control Four preamplifier, but the specifications available to us indicated that it was a sophisticated, high-quality product, as one would expect from Soundcraftsmen. In general, our measurements supported that expectation. We were unable to verify a couple of minor items, however, because we had no information on their specific test conditions.

Although the preamplifier's rated maximum output is 10 volts, our sample clipped at 8.1 volts output into an EIA standard load. Since no power amplifier we know of requires an input signal of more than 2 volts or so to reach its full output, that is hardly a serious problem. The headphone volume sounded very good to us.

The only measurement that surprised us was the phono-overload limit, which is rated at 150 millivolts. We measured it as 69 to 97 millivolts from 20 to 20,000 Hz (converted to the equivalent 1,000-

Hz level). This limit is not likely to cause any signal-overload problems with today's cartridges, but it is considerably less than that of most preamplifiers we have tested in recent years.

The harmonic distortion at a 1-volt output was about 0.006 percent from 20 to 7,000 Hz and rose to just under 0.01 percent at 20,000 Hz. At 2 volts the characteristic was similar, reading about 0.012 percent up to 10,000 Hz and rising to 0.0175 percent at 20,000 Hz. These readings were made with the DIRECT switch disengaged. In the direct mode, the distortion at 2 volts output was about the same as the original 1-volt measurements, but above 3,000 Hz it rose to 0.0235 percent at 20,000 Hz—still entirely negligible under any reasonable condition of use. The 1,000-Hz distortion, typically about 0.01 percent up to 2 volts output, rose rapidly to 0.06 percent at 5 volts.

The frequency response was very flat,  $\pm 0.05$  dB from 20 to 20,000 Hz through the CD input. The subsonic filter reduced the output only 0.5 dB at 25 Hz, and it dropped steeply below that frequency. The RIAA phono-equalization error was  $+0.3$ ,  $-0.5$  dB from 20 to 20,000 Hz. The phono input, designed for a moving-magnet cartridge, has a termination of 46,000 ohms in parallel with a 55-picofarad capacitance. The tone controls had good, conventional characteristics, with the bass turnover frequency shifting between about 50 and 200 Hz and the treble curves hinged at 2,500 Hz.

The high-level input required for a reference output of 0.5 volt was 120 millivolts (mv), and the phono sensitivity was 1.73 mv. The A-weighted noise level referred to a 0.5-volt output was  $-91$  dB (high level) and  $-81$  dB (phono); in the direct mode both figures were improved by about 1.3 dB.

We also made measurements to see if the solid-state switching system had the claimed effect on crosstalk. From a high-level input to the phono preamplifier, the crosstalk was down 80 dB at 1,000 Hz and 55 dB at 20,000 Hz. These measurements were made with the unused input terminated in 1,000 ohms to simulate the connection of a phono

## FEATURES

- Solid-state (C-MOS) electronic signal switching and control
- Audio muting during change in signal selection
- Five video/audio tape-monitor circuits with five-way dubbing facilities
- Direct mode bypasses all unnecessary switches and circuits
- Two external signal-processor loops
- Subsonic filter
- Illuminated function indicators and volume-control pointer
- Recording circuits independent of listening circuits
- Discrete circuitry in phono preamplifier
- Stereo headphone jack
- AUTO-BRIDGE circuit for use with a pair of bridged power amplifiers
- Two AC outlets, one switched

## LABORATORY MEASUREMENTS

**Frequency response** (through high-level inputs, EIA-standard load): 20 to 20,000 Hz  $\pm 0.05$  dB

**Output at clipping** (1,000 Hz): 8.1 volts

**Harmonic distortion** (THD + noise at 1,000 Hz): 0.0065% at 1 volt, 0.0125% at 2 volts

**Sensitivity** (for a 0.5-volt output): high-level input, 120 mV; phono, 1.73 mV

**A-weighted noise** (referred to a 0.5-volt output): high-level,  $-91$  dB; phono,  $-81$  dB

**Input-overload level:** phono, 69 to 97 mV, depending on frequency

**Phono-input impedance:** 46,000 ohms and 55 pF

**RIAA phono-equalization error:** 20 to 20,000 Hz  $+0.3$ ,  $-0.5$  dB

**Tone-control range:** 100 Hz,  $\pm 6$  dB; 10,000 Hz,  $+11$ ,  $-10.5$  dB



cartridge. The stereo channel separation through the CD input was 82 dB at 1,000 Hz and 56 dB at 20,000 Hz. While these readings did not equal those of a good CD player, they indicate that crosstalk problems are exceedingly unlikely to be audible with this preamplifier.

### Comments

Our measurements confirmed that the Soundcraftsmen Pro-Control Four is an excellent control amplifier, which was not unexpected, given its heritage. Soundcraftsmen, known for its high-quality home and professional amplifiers, is one of the relatively few truly American manufacturers to have demonstrated consistently that it is not necessary to go overseas to find affordable top-quality audio electronics.

We expected the novel control features of this preamplifier to be among its more significant qualities, so we put them to the test. We found that a muting delay of almost a second accompanied any switching operation. The previous program disappeared for that interval and was then replaced by the new one with no trace of a switching transient. While it might be more convenient to have a bidirectional input selector to minimize the time it takes to select an earlier input in the sequence, the clear and unambiguous LED indicators make missteps unlikely. We also appreciated the bright indicator on the volume knob.

Not many people are going to need all the capabilities of the Pro-Control Four, but it is comforting to know that they are there and available for use. We tried several combinations of dynamic expanders, equalizers, and similar accessories connected through the two LOOP circuits and found the switching of these components to be equally flawless. I suspect that audiophiles who have accumulated a number of accessory devices over the years would be encouraged to re-install them if they had this control amplifier in their systems. I know that I was! However you look at it, the Soundcraftsmen Pro-Control Four is a beautiful piece of equipment.

**Circle 142 on reader service card**



FOOK LEUNG

## LINN NEXUS SPEAKER

*Julian Hirsch, Hirsch-Houck Laboratories*

**G**LASGOW-based Linn Products, Ltd., is best known for its record-playing components, but it also produces a line of high-quality loudspeakers. The latest addition to the Linn speaker family is the Nexus, a two-way ported system using a 1-inch soft-dome tweeter and a new 8-inch woofer featuring a carbon-loaded polypropylene cone. Both of these drivers were developed by Linn, and the same tweeter is also used in

its top-of-the-line speaker system.

The Nexus specifications include a frequency response of 50 to 20,000 Hz  $\pm$  2.5 dB and a sensitivity of 88 dB sound-pressure level (SPL) with a 1-watt input. The crossover, at 2,500 Hz, uses a fourth-order Linkwitz-Reilly network designed to give maximum phase coherence through the crossover region. The crossover network can easily be converted for biwiring (using separate cables to connect the tweeter

## TEST REPORTS

and woofer to the amplifier). The necessary connectors are already mounted on the back of the cabinet, and the conversion consists of cutting a link on the crossover circuit board. In the biwired configuration, the system can also be used with biamplication (separate amplifiers for the bass and treble drivers).

The Nexus speaker measures 21¼ inches high, 10 inches wide, and 11½ inches deep. Its internally braced cabinet is made of medium-density fiberboard, and the front baffle, which has an integral molded port, is made of polypropylene. The baffle is bonded to the wooden cabinet with structural adhesives to form a highly rigid assembly. The drivers are mounted flush with the front of the baffle (a trim ring around the woofer rim makes a smooth transition to the baffle plane).

To reduce diffraction effects even further and minimize the possibility of rattling or vibration, Linn has done away with the conventional

*The uniformity of the room response of the Linn Nexus was outstanding, and it was able to handle considerable power input on brief peaks.*

grille structure. Instead, the Nexus has an elastic-edged black cloth grille that simply stretches over the baffle and hugs its edges to form an attractive and acoustically transparent covering. The cloth can be removed or replaced, though not quite as easily as the usual wooden or plastic grille frame.

The Nexus has an integral stand, about 15 inches high, that places the tweeter close to ear level for a seated listener. The stand is rigidly fastened to the bottom of the speaker cabinet with two steel tie rods, and the metal upright section (through which the connecting wires can be passed) is acoustically damped with foam and plastic. Adjustable pointed mounting feet are also supplied. The speaker and stand weigh about 36 pounds. Price: \$1,195 a pair. Linn Products, Audiophile Systems, Dept. SR, 8709 Castle Park Dr., Indianapolis, IN 46220.

### Lab Tests

The uniformity of the room response of the Linn Nexus was outstanding. Spliced to a close-miked woofer response curve, the resulting composite frequency response was within  $\pm 2.5$  dB from 57 to 20,000 Hz, impressively close to the manufacturer's rating. The low-frequency output fell at 12 dB per octave from 90 to 20 Hz.

The system's impedance reached its minimum of 6 ohms at about 450 Hz and remained between 6 and 7 ohms from 150 to 700 Hz. The impedance reached its maximum of 20 ohms at 73 and 20 Hz, and it varied between 6 and 16 ohms from 80 to 20,000 Hz. The sensitivity measured 86 dB SPL at 1 meter with a 2.83-volt input of pink noise. We measured bass distortion with a driving level of 4.5 volts, equivalent to a 90-dB output, and were pleasantly surprised to see how low it was. The total harmonic distortion was between 0.4 and 1 percent from 100 Hz to about 55 Hz, rising to only 5.5 percent at 25 Hz.

Quasi-anechoic FFT response measurements, on the system's axis, showed an output variation of  $\pm 3.5$  dB from 200 to 20,000 Hz. The horizontal dispersion over a 45-degree angle was reasonably good up to about 14,000 Hz, where there appeared to be a tweeter resonance. Except for a minor jog at 14,000 Hz, the group-delay variation through the tweeter range was less than 0.2 millisecond.

The Nexus showed itself able to handle considerable power input on brief peaks without damage or serious distortion. At 100 Hz the woofer cone reached the limits of its travel with a loud "crack" with an input of 670 watts into its 9-ohm impedance, but there was no audible evidence of distress until we reached that level. At 1,000 Hz the amplifier clipped at 760 watts into a 9.5-ohm impedance, and at 10,000 Hz the amplifier clipped at 940 watts into 7 ohms. In neither case was there any indication of serious nonlinearity in the speaker's output.

### Comments

The Linn Nexus demonstrated unequivocally that not all small

speakers with 8-inch woofers and 1-inch tweeters sound alike. Our measurements hint at its special qualities of smooth, wide-range frequency response and very low distortion, but only listening can reveal the audible benefits of these qualities and a host of others that cannot readily be measured.

As always, we listened to the Nex-

*The first few moments of listening established its total ease and lack of harshness, balanced output, and clean, nonboomy bass.*

us speakers for some time before making any measurements. Also as always, the first few moments of listening established their true qualities, which include a total ease and lack of strain and harshness, a balanced output across the audible spectrum, and a clean, nonboomy bass. The Nexus stood up well in comparison with some much larger and more expensive systems—in fact, it tended to sound much larger than it really is, thanks in part to its low level of bass distortion, which sets it apart from most speakers of comparable size.

When the Linn Nexus speakers arrived, I did not know their price, although I expected it to be considerable in view of Linn's dedication to high quality regardless of cost. After I learned their price, I had to ask, "Can a pair of small two-way speakers be worth \$1,200?" Of course, everyone must answer that question in the light of his own tastes and budget requirements. What I can say about the Nexus is that its sound is very much in line with its price. If you heard these speakers without seeing them, the price would not seem at all unreasonable.

Hear them if you can. You may find, as we did, that you can listen to the Linn Nexus system for extended periods without any urge to switch to another speaker. In fact, you may find yourself forgetting about the speakers and simply enjoying the music.

**Circle 143 on reader service card**

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1978  
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1977  
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1977  
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1977  
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1987

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1982

First dbx™ noise  
reduction for the car

1984

First car deck  
with FNR™ FM  
noise reduction

1982

First Matched Phase™  
tape head

1987

First in-dash deck  
with subwoofer crossover

# Concord Firsts.

# A SPECIAL REPORT

# JAPAN

Giving consumers more for their money is an old Japanese custom, but manufacturing and marketing pose new challenges.

TOKYO, June 1988—The Japanese audio industry is in a peculiar state of purgatory this year. In many respects it is in strong transition, with nobody able to admit to a clear vision of the next decade. Digital audio tape (DAT) recorders, on sale in Japan for over a year, still await shipment to the U.S. amidst one of the biggest industrial stalemates in audio history. Continuing rises in the Japanese yen quickly eat up any cost reductions production engineers have managed to squeeze out of audio assembly lines, driving to the wall overseas sales managers struggling to keep U.S. prices down in order to hold onto all-important market share. Japan's Asian neighbors, for years a source of low-price portables and systems, now loom threateningly across the China Sea as potential manufacturing centers for the kind of higher-quality audio components that have made Japan famous.

But rather than wait until the "If you can't beat 'em, join 'em" stage, many Japanese manufacturers are already taking the initiative in moving assembly to the neighboring countries of South Korea, Taiwan, Singapore, and Thailand, where wages are a fraction of Japan's. True, these countries may soon be the major source of low- to mid-price audio components, but the companies, and the names on the products, will no doubt remain Japanese.

In DAT, the story might be, "If you can't beat 'em, buy 'em," illustrated by Sony Corporation's purchase of CBS Records. Though there's been no sudden policy shift on DAT at CBS Records, few will doubt that preparations are now under way for a typically Japanese "mutual understanding" between hardware and software industries in the near future. Many in the audio industry here see the purchase as a positive step toward the issue's eventual settlement.

The DAT stalemate in the U.S. has not stopped progress on DAT recorders. Sony already has a low-

er-price second-generation model, the DTC-M100 (¥160,000, or \$1,280 at the press-time exchange rate of about ¥125 to the dollar, compared with ¥209,000, or \$1,672, for the original DTC-1000), and Technics, JVC, and other makers are expected to follow soon. Lower prices are not a result of increased sales volume, but rather of aggressive pricing and the use of new, even larger large-scale integrated circuits (LSI's) that reduce the number of electronic parts. Yet it's no secret that DAT decks are still not selling well here, even more than a year after their launch. In the Akihabara shopping district, one salesman in a prominent high-end store confided that about half his DAT deck sales are made to foreigners, who also pick up voltage converters to use these Japanese 100-volt models back home.

Why are DAT sales sluggish in Japan? Hiromitsu Nakazawa, chief editor of *Musen To Jikken (Stereo Technic)*, one of Japan's leading technically oriented audio magazines, believes that "Philips is exerting pressure on Japanese manufacturers, who in turn are holding back full-scale promotion of DAT in Japan."

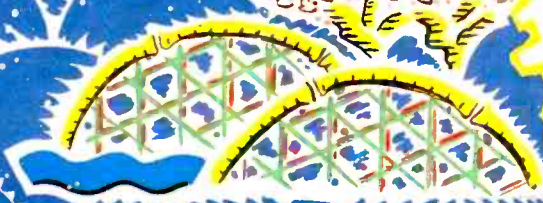
Was DAT released too soon? Shigeru Yoshida, president of Aiwa, the first company to release a DAT machine, said that his company "didn't expect that the copyright problem would drag on so long." Yet Nakazawa counters that manufacturers were "too hasty in releasing DAT in the first place," so that the necessary "LSI's and A/D [analog-to-digital] converters aren't really as refined as they could be. First-generation models had some compatibility problems between decks in the record/playback cycle, though this has been improving lately."

But Keizo Yamanaka, a highly respected audio critic, reminds us that "When one considers the first analog cassette decks, the first DAT decks were fairly refined by comparison." Yamanaka also feels that DAT is premature because there aren't



BY BRYAN HARRELL

ILLUSTRATION BY HILARY McMANUS OF SHARP PRACTICE U.K.



Tokyo

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enough good program sources yet. "Having no direct digital input capability is a definite demerit. The quality of FM radio isn't so great, and why would people with CD's bother recording them onto expensive DAT blanks anyway? Without music software, there's no hope for DAT."

Niro Nakamichi, president of Nakamichi Corporation, is also pessimistic about the current crop of DAT recorders and contends that "in actual listening, the average audio maker's DAT deck doesn't really outperform our better [analog cassette] decks. The basic concept—helically scanning tape heads—was developed by video engineers, so from the start it really hasn't been a device for music."

Nakamichi acknowledges that his company's research is directed at both analog and DAT recorders. "The biggest problem," he said, "is the cost of producing [a DAT recorder] that we think sounds good," but he hinted at a release around the end of this year. The company has already announced its development of the new Fast Access Stationary-tape-guide Transport (F.A.S.T.) drive mechanism for DAT decks, which has a half-load position that is said to make program-search operations twice as fast as anything existing mechanisms can provide.

**Y**AMAHA is one Japanese audio giant that is not even selling DAT equipment in Japan, though it has demonstrated working prototypes. "We're essentially a music company, so we have this [certain] feeling [on the issue]," explained Nobuo Yamada, manager of Yamaha's audio marketing division. He also stressed his company's cooperation with the recording industry. "We don't know what will happen in the area of copyguard [systems], and there's no software anyway," he added. Kenji Yokoyama, a chief engineer in Yamaha's audio division, had a distinct gleam in his eyes, however, as he described the company's as-yet-unreleased DAT prototype. "It's an extremely refined unit all ready for production, with a single circuit board and LSI's we've developed."

Denon also has yet to introduce a DAT recorder, no doubt because the firm is one of Japan's largest recording companies and a producer of professional equipment. Takeaki Anazawa, Denon's general manager of recording technology, who is involved in the digital recording of Denon's primarily classical catalog, feels that "Both sides have to hammer out a consensus together, instead of each side firing proposals at the other. If there's no software, the hardware's just a box." Anazawa also pointed out that a recent survey of DAT deck owners in Japan indicated that almost all of them are recording from CD's or off the radio. "Might as well write 'CD player' on the [DAT deck's] analog inputs," he joked.

Pioneer, despite its investment in LaserDisc video software, does offer a DAT recorder, the D-1000, which it claims is the industry's best. "It's got excellent independent digital filters on the recording side," explained development engineer Hiromi Kon, "which reduce THD to only 0.003 percent." But Pioneer director Shigeyoshi Yanagi said that his company is "waiting for the copyright problem to clear up before we go ahead with a U.S. release. If they can't solve the problem in America, we can't go ahead." Asked if the DAT format could eventually surpass the CD, Yanagi replied that if it could, it would take many years.

### *Where DAT Is Going*

Despite the many obstacles, most Japanese audio experts have become more optimistic about DAT than they were a year ago. Hirohito Kawada, a manager in Sony's audio components division, said that although his company is not working on a copyguard system, it is testing and evaluating several that have been proposed. *Musen To Jikken's* Nakazawa feels that it's possible to create an effective copyguard system that would not damage sound quality, but that it would really add to the cost of the unit. He is most enthusiastic about the portable DAT recorders and their potential for professional use: "It's easy to imagine a component-size DAT recorder sounding great, but [the sound

from] these small models [is] truly amazing." Nakazawa feels there will be a settlement of the copyright issue this fall and a "re-launch" of DAT, with equipment prices likely to be around ¥100,000 (about \$800).

Is a tax on recorders and blank tape a solution to the copyright controversy? Niro Nakamichi feels that the West German tax system is the best so far. Aiwa president Shigeru Yoshida recognizes that this approach is one solution, but he is not sure it could work in Japan.



**U**NDERSTANDABLY, the person most optimistic about the future of DAT is Hitoshi Saitoh, director of Japan Program International (JPI), the first, and currently the largest, DAT software production house in Japan. In February, JPI began duplicating operations in Tokyo after months of preparation and extensive testing with prototype Sony duplication machines. By mid April, JPI had already produced 20,000 pre-recorded DAT cassettes, mostly various types of demonstration tapes, 60 percent of them for Japan and 40 percent for overseas, usually West Germany. After real-time recording on a bank of fifty duplication machines, the JPI staff spends a lot of time checking for errors and drop-outs using both a sophisticated computer system and the ears of Shunichi Akatsuka, JPI's chief engineer. "With the computer we can get statistical data on the incidence and frequency of errors, which are often handled by error-correction systems on playback, though the human ear is still the best for determining sound quality," Akatsuka admitted, adding that "There are still some problems with blank tape. Contaminants and irregular magnetism are the biggest sources of uncorrectable errors."

"I firmly believe there's a big future for DAT, not just as a music format, but for computer data as well," JPI's Saitoh said. Aiwa president Yoshida shares his view, pointing out that a 120-minute DAT cassette holds up to 2 gigabytes—a staggering amount of data for such a small format, giving it significant potential for commercial computer applications.





Kenwood's top audio/video receiver, the KR-V127R, is rated for 130 watts per channel and includes both a seven-band equalizer/analyzer and a Dolby Surround decoder. The remote control can also be used for components from other manufacturers. Suggested retail price: \$699.

The NEC PLD-910, an active Dolby Pro Logic decoder for video sources encoded with Dolby Stereo or Dolby Surround, includes special digital circuitry for adjusting delay time, echo level, phase, and front/rear mixing levels. A full-function remote control is included. Price: \$949.



The Eclipse EQZ-200 is a completely touch-operated car stereo head unit with no knobs or switches. It includes an autoreverse cassette deck, an AM/FM tuner, and a seven-band graphic equalizer/spectrum analyzer. Price: \$1,350.

Luxman's LV-109 integrated amplifier, rated for 150 watts per channel continuous, features digital-direct inputs, a double-oversampling D/A converter, and dual-feedback amplifier circuitry. Suggested retail price: \$1,500.





Saitoh suggested another reason why record companies oppose DAT. "Because the CD [format] is still new, and record companies have spent considerable money on gearing up for CD software production, they're afraid of losing out to the little guy, since starting a DAT plant like [JPI's] costs so little by comparison."

Audio critic Yamanaka also agreed about DAT's advantage in software production, explaining that "DAT has the potential for higher-than-CD quality in very low quantities. For a CD, you have to press at least 1,500 to break even." He added that prerecorded DAT cassettes could even be spun off one by one on a special-order basis.

### What's After DAT?

What direction will Japanese audio research take after DAT? Most agree that with digital audio perfecting the "middle" of the recording/playback process, increased attention will be focused on the "ends"—microphones and recording techniques on one hand, and speakers, including placement techniques and sound processing, on the other.

"With the current state of digital [audio], we can now concentrate on recording techniques in the areas of microphone placement, acoustics, and sound mixing," said Denon's Anazawa, obviously excited by these new challenges in recording. "We've known for some time that mixing the outputs of two microphones will always create some sort of interference. Issues and questions like this will always be with us."

Anazawa also talked about digital audio's renewing the possibility of four-channel sound. "We can make a discrete four-channel CD [player], but do people want it? And should we record software for it? Besides 8-bit four-channel, we can even do 4-bit eight-channel. Digital's advantage is that it gives us the freedom to do this." Denon has already exhibited several prototype systems, including an 8-bit four-channel system that played classical music at last summer's Berlin Audio Fair.

### International Success Story

A friendly American face met me at the east exit of Shinjuku station,

on the Yamanote loop line that draws a circle around central Tokyo. Shawn Layden works in Sony's corporate communications department and is one example of the increasing number of non-Japanese in the Tokyo headquarters of Japanese corporations. He was there to guide me to Sony's Shibaura works nearby to hear the latest Sony CD players through a pair of the company's prototype speakers.

After getting me through "customs" at the main entrance, Layden took me upstairs to a listening room where the massive CDP-R1 and DAS-R1, the two handsome components of a CD player system, awaited audition. During a brief description of Sony's central role in the history of the CD format, Masao Kamijo of the ES component division pointed out that CD production in Japan is now more than double that of analog LP's, with Sony equipment used in over 90 percent of the world's forty-four CD plants.

The CDP-R1 player and DAS-R1 digital-to-analog (D/A) converter were then demonstrated. This combination not only won the 1988 Component of the Year award from *Stereo Sound*, Japan's prestigious high-end audio quarterly, but it was also the first CD player ever to win the magazine's coveted Golden Sound award. The ¥600,000 (about \$4,800) system does indeed sound wonderful, but just as significant are its development and composition. The mechanism block was designed with the help of Yokogawa Hewlett-Packard computer-aided design (CAD) and computer simulation systems, and the digital-filter LSI was developed in conjunction with Texas Instruments. Inside the units are electronic components from several Japanese and U.S. manufacturers, highlighting the internationally interdependent nature of today's consumer electronics.

### Speakers

Sony played its new CD separates for me through prototypes of its SSG-777ES speakers, slated for release later this year. This three-way speaker system uses a woofer cone with radial-fiber reinforcement and solid silicon-carbonate domes for its midrange and tweeter—quite a de-



Proton's compact remote-controlled AI-3000 music system includes an AM/FM receiver, an autoreverse cassette deck, and a CD player. Price: \$1,249. Matching AL-200 speakers: \$179.

THE AKIHABARA  
ELECTRONICS  
MARKETPLACE





Onkyo's Grand Integra M-508 dual-mono power amplifier is rated for 200 watts per channel continuous into 8 ohms, up to 685 watts dynamic power into 2 ohms. Price: \$1,150.



Yamaha's top CD player, the CDX-1100U, represents second-generation Hi-Bit technology. It features a direct-coupled analog output, eight-times oversampling digital filters, and a 20-bit digital volume control. Access time to any point on a disc is rated as 0.8 second. Price: \$1,199.



No, "Akihabara" is not a magic password. It's Tokyo's electronics district, where in less than a square mile there are hundreds of stores selling anything to do with electricity. An estimated 10 percent of Japan's electrical-goods purchases are made in Akihabara, just a few minutes north of Tokyo's business district. Parking is almost nonexistent, but Akihabara is served by two subway lines, three railway lines, and Tokyo city buses. Almost all major stores offer free delivery.

The range of merchandise offered is staggering, from stereo components to steam irons, from passive radiators to power tools. And in addition to virtually everything available in an American home electronics store, there are a number of products normally found only in Japan. The futon kansohki (forced-air dryer for Japanese bedding) is one example, as is the kohtatsu, a very low table with a heating element underneath; it's used with a sort of blanket thrown over the top that hangs down to the floor on all sides so people sitting at the table (on cushions, not chairs) can keep their legs warm. Another such product is the denki-gama (electric rice cooker), which didn't take the U.S. by storm, although the new pan-yakki (automatic bread makers) are expected to.

The variety of stores is even more

impressive. Huge multistory consumer electronics "department stores" such as Ishimaru, Laox, and Yamagiwa stand shoulder-to-ankle with tiny cubbyholes that specialize only in light bulbs, switches, or wire.

Foreign tourists are a common sight in Akihabara, and people of all nationalities make the rounds of the duty-free sections set up in some of the larger stores to sell versions of products for countries around the world. Americans will be hard pressed to find any bargains here, as prices in the U.S. are invariably lower, but other nationalities often shop big for goods that are unavailable, or far more expensive, in their home countries.

The two things most striking about Akihabara are its density and its noise. Tokyo real estate is among the world's most expensive, so most stores are jammed floor to ceiling with goods on display while crowds of customers pour from one store to the next. And it seems that everything is turned on at once—portable stereo sets on full blast, alarms going off, electric fans panning back and forth, and "talking" kitchen appliances sputtering out synthesized Japanese from their ROM chips make one wonder if the sales people don't go nuts after a few weeks. Nonetheless, Akihabara is one big carnival that should not be missed by audio enthusiasts visting Tokyo.

## COMPARISON SHOPPING



Prices in Japan, even in the Akihabara discount stores, are often considerably higher than they are in New York City. Here are a few examples, representing the average of prices from several stores selected at random in each city. The products were also selected at random. The yen amounts are followed, in parentheses, by the U.S. equivalent as of press time, then by the actual selling prices in New York stores.

dbx DX-5 CD player: ¥67,000 (\$536); \$329  
 Denon DCD-1700 CD player: ¥97,000 (\$776); \$599  
 Luxman LV-109 integrated amplifier: ¥168,000 (\$1,344); \$1,099  
 Maxell XLII-S tape, two-pack: ¥1,250 (\$10); five-pack, \$10.99  
 Nakamichi OMS-7011 CD player: ¥255,000 (\$2,040); OMS-7A, \$1,499  
 Pioneer PD-M70 CD player: ¥60,000 (\$480); \$369  
 Sony D-150 portable CD player: ¥40,800 (\$326); D-15, \$268.50  
 TDK SA-X90 tape: ¥730 (\$5.84); five-pack, \$10.89  
 Technics SL-P1200 CD player: ¥138,000 (\$1,104); \$699



parture from Sony's APM speakers of the recent past, with their flat, square aluminum drivers.

Why the shift back to a more traditional design? Masao Kamijo explained that "The APM speakers were Sony's first speaker development after the advent of digital audio, and at the time it was the only approach we could take to achieve our goal. Now, with the availability of all sorts of new materials, we can do things with traditional cone speaker [diaphragms] that were impossible only a few years ago."

"There's been a *sohzei kyosoh* [materials competition] in speakers in the last few years," explained Toyosaku Matsumoto, a chief engineer in Yamaha's audio division, "which has done a lot to create sales points, but nothing much for actually improving sound. Designers have run up against a wall and have started reconsidering older materials. We're looking for ways to simply make the speakers sound better, and we're not as conscious of cosmetics as other [manufacturers]." Yamaha engineers are now audi-

tioning speakers from around the world as part of their design process, and the company recently introduced the NS-1 Classic speaker, which uses new driver materials and cabinet construction.

Pioneer has just released a new speaker designed around the audio/video concept. The 55-Twin has twin woofers, placed top and bottom, with the midrange and tweeter in the center of the cabinet. "Its superb sound resolution and localization make it an excellent A/V speaker," claimed Pioneer director Shigeyoshi Yanagi.

### Surround Sound

"I've seen it happen. Those who get a surround-sound system keep the surround speaker volume up at first—you know, because it's novel. But they gradually begin to realize it sounds unnatural, and little by little they turn the surround volume down. Finally, some realize it isn't necessary at all." *Musen To Jikken* editor Nakazawa was talking about many people who have gotten tired of surround-sound systems after two or three years.


Yet the push toward audio/video integration has spawned a number of new surround-sound systems. Most are of the inexpensive matrix type, but with the advent of Yamaha's legendary DSP-1 [Digital Sound Field Processor], a new category was created in serious hi-fi. Signal-processing technology is considered by many to be the Next Big Thing after digital audio.

"Memory capability is the key difference. The DSP-1 was made possible through digital audio and memory. It would have been impossible with analog [technology], because there's no memory with analog," explained Yamaha engineer Yokoyama. "We can now [use digital processing technology] compensate for speaker placement limitations, for example, by moving one [speaker] 'forward' through timing. And there's been a lot of demand for our DSP technology in car audio, though we've made nothing available yet. There are so many application possibilities for digital sound processing we can't even imagine yet."

Also enthusiastic about digital

## JAPAN'S HI-FI COFFEE HOUSES



 TIME was, not too many years ago, when the average Japanese couldn't afford a sound system (or a room big enough for one), much less records to play on it. This created the need for coffee shops with good sound systems, and they flourished from the mid-Fifties up until the mid-Seventies. Jyazu kissa, playing Bird and Miles, and kurasshiku kissa, playing Bach and Mozart, still exist, though their numbers are fewer every year.

The kissaten, or kissa in casual talk, is a Japanese institution. Literally meaning "drink tea shop," a kissaten is actually a coffee house that serves drinks and light food. (Japanese tea is rarely served!) But it's more than just a coffee shop. The kissaten is a place where Japanese meet friends, hold a business discussion, read, or just nod off for several hours—all for the (somewhat high) price of a cup of coffee.

Kissa where music is played have slightly higher prices, very good sound systems, and usually a policy against conversation. Places that play jazz are invariably LOUD, though classical places keep the volume lower.

My favorite is a place named Lion in Tokyo's Shibuya district, where I've lived for the past ten years. Open for over fifty years, Lion is one of the original classical-music kissa. The exterior suggests a mixture of European architectural styles, while the inside is dark, majestic, and just a bit spooky. A program of the month's selections arrives with your ¥330 (\$2.65) cup of coffee. The system is an assortment of components from various manufacturers, though the speakers look as if they've been custom fitted to the wall. Analog LP's are played most of the time, but they've recently added a CD player and a small stack of CD's.

Jazz kissa are more common and can be found near major train stations and in university neighborhoods. Most make a point of listing their system's components at the door and in ads placed in music magazines. JBL speakers are highly favored. These places are usually cramped, with enormous record collections and black-and-white posters of jazz greats on the walls. Though most patrons have their own home sound systems now, they still drop by to hear the newest releases and to engage in an old habit.

signal processing is *Stereo Sound* publisher Harada Isao, who described his first experience with Yamaha's DSP-1 as "a dream come true." Much better, in his opinion, is Yamaha's new DSP-3000, which he considers one of the top audio events of the past year, adding that units from Sony and Roland are also good. A slightly more cautious note was sounded by Denon recording expert Anazawa: "Personally, [I feel that] the surround effect has its merits, but what must be done first is to record the sound properly and play it back accurately." He also noted that "Traditional music never comes at you from behind."

### Whither Analog?

"Analog players will still be around for a while, though I've noticed a decrease in the number of people who don't like CD," said *Musen To Jikken* editor Nakazawa. Many hard-core Japanese analog purists are softening toward digital audio, though remaining loyal to the perceived virtues of analog.

"Analog still has its good points, particularly for strings and vocals, where digital still isn't good enough," noted *Stereo Sound's* Harada. "However, the digital sampling frequency must be raised because the human ear is still better." In cautious agreement is audio critic Yamanaka Keizo: "Analog still sounds best in a very high-grade system. Although the CD [format] is gaining in terms of hardware, the software still hasn't gotten much better."

### The Japanese Market

The division between conventional 17-inch-wide high-quality components and lower-price 13-inch-wide rack systems (called "midi systems" in Japan) has become clearer than ever. This should not be interpreted as a digital/non-digital distinction, however, as CD players are featured in nearly every rack system—as well as in the majority of this year's "boom-box" portables! The stratification indicates the difference between consumers who are truly interested in sound quality and those who just want something that plays—Japanese buy rack systems as casually as



Sony's two-piece, optically coupled CDP-R1/DAS-R1 compact disc system separates the transport and laser mechanism from the digital filtering and D/A conversion circuitry. Projected U.S. price: \$8,000.



Denon's top-of-the-line AM/FM receiver, the DRA-1025, rated for 110 watts per channel, features its proprietary Optical Class A variable-bias amplifier circuitry with fiber-optic isolation. Price: \$900.



Pioneer's newest LaserDisc player, the LD-W1, can hold two videodiscs at a time and play all four sides in sequence without turnover. It has extensive special effects, all accessible via the remote control. Price: \$1,700.



Americans buy clock radios. Imported speakers are likely to be purchased by the component crowd, not by rack-system customers.

The Japanese are still in love with small things. Portable CD players captured the attention of the average young person, and the small Bose 101 and 111 speakers, which are still big hits, have spawned a spate of imitations. Those few consumers considering DAT are very warm to the idea of a portable model, even though they'll probably never take it out of the house.

AND the Japanese are still infatuated with the color black, not only as the color for components of every price range, but also as the most popular color in casual clothing for the young. Mahogany and other wood-grain speakers are invariably passed up for the black versions. (Oddly enough, over half the cars sold in Japan are white, with the percentage increasing yearly.) Yamaha's new series of components in burnished champagne silver is daringly refreshing by comparison.

### Imported Audio in Japan

The fundamental barrier to the growth in sales of imported consumer goods is the Japanese *hakurairihin* mentality. *Hakurairihin* literally means "goods coming by ship," and its use harks back to the days when foreign-made goods were of vastly superior quality, rare items to be treasured. Accordingly, *hakurairihin* were expensive, and should be. Anything cheaper was probably a local imitation. Changing fortunes and times in Japan have made foreign goods cheaper, though the belief that high-quality foreign goods must be expensive remains.

Or does it? Several audio importers have claimed that a drop in prices would result in a drop in sales, citing a peculiar form of snobbery among Japanese consumers of imported audio, though none have been able to offer a single historical example. Not only the belief in high prices but also the faith in this belief constitutes a distinct nontariff barrier to audio imports. Meanwhile, prices of imported audio goods remain high, often two to three times

the retail prices in the country of manufacture.

Shintaro Uchida of Oba Shoji, importers of Rowland Research, Wilson Audio, Vendetta Research, and other high-end products, laments the problems facing the Japanese audio importer. "First of all, if there's a bad magazine review of your product, it's finished. Reviewers are not really candid," Uchida told me.

Actually, Uchida was being kind. In the audio industry, it's common knowledge that several ¥10,000 notes in an envelope are necessary even to talk to a well-known audio critic, and many more will often assure a good review. "Furthermore," Uchida went on, "often their normal testing methods are, shall we say, a bit suspect. Correct cartridge loading is often not observed, and acoustics will vary widely. Most auditioning goes on in very dead, soundproofed rooms."

Uchida also pointed out that apart from the actual cost of the products, all other costs—overhead, service, salaries, and advertising—are in yen and cannot be reduced when the dollar drops. He shares the belief, however, that "Sometimes if the price is higher it sells better, because people think it must be better. That's because [Japanese] have little self-confidence in making their own choices."

THOUGH Uchida speaks for relatively unknown imported audio goods, the situation for better-known products is changing. Prices of JBL speakers were recently lowered a substantial 11 percent, according to Kohtarō Yasuda of Harman International, the JBL importer in Japan. Sumiyoshi Sakura of Bose Japan said that sales are continuing upward, with a back-order situation for the new Models 6.2 and 501Z. Interestingly enough, some 40 percent of Bose speakers sold in Japan are assembled here, though the drivers are all of U.S. manufacture.

If Yasumasa Eigashira has his way, the next big American speaker in Japan will be Polk. Eigashira is the Polk Audio sales manager for the Benytone Corporation, which also imports Carver products.



Both TDK and Maxell have introduced blank digital audio tape (DAT) cassettes, which hold 2 hours of music in standard mode, 4 hours in EP mode, and are about half the size of analog cassettes.

Iwata's pocket-size HS-J380 includes a digital-synthesis AM/FM tuner, with ten presets and a digital readout, and an autoreverse cassette recorder with Dolby B and a stereo microphone. Price: \$160.



Hitachi's HA-007 audio/video integrated amplifier, with power MOSFET's rated for 65 watts rms per channel, and FT-007 computer-controlled AM/FM tuner are designed to complement each other. Prices: amp, \$500; tuner, \$400.

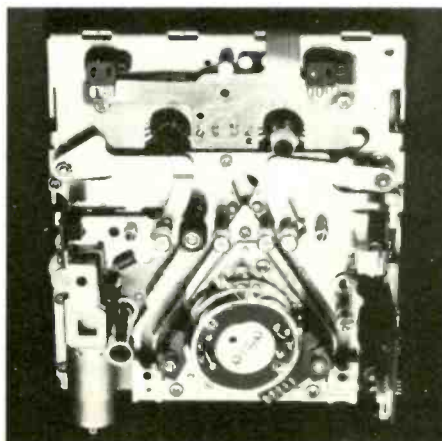


Sansui's CD-X701i double-oversampling CD player has a floating suspension and dual-chassis construction that isolate the laser pickup from other circuitry. Price: \$850.

The HR-S8000U, JVC's newest Super VHS video recorder, features 400-line resolution, hi-fi sound with a flying erase head for editing, and a wide range of digital special effects. Price: \$1,599.



Nakamichi's CD-93 compact disc player features 18-bit "sliding" D/A conversion, improved vibration resistance, and fiber-optic connections. Price: \$1,199.



Nakamichi's Fast Access Stationary-tape-guide Transport for DAT decks, featuring a half-load position said to make program-search operations twice as fast as with other transports, will be used in Nakamichi DAT decks and will be licensed to other manufacturers.



## SPEAKING THE LANGUAGE



*JAPANESE is surprisingly easy to pronounce. The five basic vowel sounds are like those in Spanish or Italian: "a" as in "car," "i" like the "e" in "key," "u" as in "you," "e" as in "pay," "o" as in "go." Syllables are short and staccato-like except where an "h" after a vowel indicates a longer sound. An apostrophe indicates a clear division between syllables.*

*AM (amplitude modulation) —*  
shinpuku henchoh  
*attenuator — gensuiki (or attenehtah)*  
*broadcast — hohsoh*  
*capacitance — yohryo*  
*circuit — kairo*  
*diaphragm (microphone or speaker) —*  
shindoban  
*directivity — shikohsei*  
*distortion — hizumi*  
*electricity — denki*  
*erase — shohkyo*  
*FM (frequency modulation) — shuhasu*  
henchoh  
*frequency response — shuhasu tok'sei*  
*low frequencies (bass) — tei'on*  
*middle frequencies — chu'on*  
*high frequencies (treble) — ko'on*  
*harmonic — kohchoh'ha*  
*THD (total harmonic distortion) —*  
zenkohcho'ha hizumi  
*input — nyuuryoku*  
*intermodulation distortion —*  
konbenchoh hizumi  
*liquid-crystal display — ekisho*  
disupureh  
*live performance (music) — nama enso*  
*modulation — henchoh*  
*multiplex — tajuh*  
*music — ongaku*  
*musical instrument — gakki*  
*negative feedback — fukikan*  
*noise — zatsu'on*  
*output — shutsuryoku*  
*optical transmission — hikari densoh*  
*playback — saisei*  
*power supply — den'gen*  
*recording — roku'on*  
*resistor — teikohki*  
*resonance (including vibration) —*  
shindo  
*sampling frequency — sampuringu*  
shuhasu  
*semiconductor — handotai*  
*signal — shin'go*  
*sound-pressure level — on'atsu reberu*  
*sound wave — on'pa*  
*stylus — hari (Japanese for "needle")*  
*tape copying — dabbingu*  
*terminal (connector) — tanshi*  
*tone — on'shitsu (also used to mean*  
"sound quality")  
*tone control — on'shitsu chosoi*

*voltage — den'atsu*  
*volume — on'ryo*

*Some audio expressions are Japanese pronunciations of their English-language counterparts, often contracted so as to be easy to pronounce, work with, and remember.*

*amplifier — ampurifaiah*  
*azimuth — ajimasu*  
*bass-reflex — basurefu*  
*cable — kehburu*  
*capstan — kyapusutan*  
*cartridge — kahtorijji*  
*cassette deck — kasetto dekki*  
*condenser — kondensah*  
*dB — deshiberu (or just dB)*  
*chemical capacitor — kemikon*  
*digital audio — dijitaru ohdio*  
*dynamic range — dainamikku renji*  
*graphic equalizer — guraiko*  
*headphones — heddofuon*  
*impedance — imupedansu*  
*integrated amplifier — purimein amp*  
*plus/minus ( $\pm$ ) — puramai*  
*power consumption (watts) — shohi*  
denryoku  
*quartz-lock — kuohitsu rokku*  
*radio cassette player — rajikase*  
*remote controller — remokon*  
*separation — separehshon*  
*signal-to-noise ratio (S/N) — es'en hi*  
*spectrum analyzer — supeana*  
*studio — sutajio*  
*synthesizer — shine*  
*system components (one-brand*  
systems) — shisukon  
*tape — tehpu*  
*tape editing — tehpu henshu*  
*tape head — tehpu heddo*  
*tape recorder — tereko*  
*turntable — purch'yah*  
*tuner — chuh'nah*  
*VCR — bui-chi-ahru (VTR)*  
*video — bideo*  
*wow-and-flutter — wau furattah (or*  
kaiten mura)

*Interesting note: Not only do the Japanese use the terms uuhfaah (woofer) and tsuiitah (tweeter), but they also use the expression sukohkah (squawker) for a midrange driver.*

"We've got a great speaker here, but the biggest problem is establishing name value. The first Polks came through about two years ago, and we're just starting to see the results of our promotional activities." He admits that it will probably take a few more years to build the Polk name but is optimistic that the brand will become "at least as popular as Bose and JBL."

### The Japanese Outlook

The yen's continuing rise (or *endaka*, as the Japanese themselves refer to the phenomenon) has made exports even more difficult. Last year at this time, the rate was ¥140 to the dollar, while now it's near ¥125, making Japanese goods much more expensive in U.S. dollars.

Japanese audio manufacturers are coping by pursuing higher technology for products with increased value, while shifting the manufacture of lower-cost products to other Asian countries. Though nobody I talked with would admit it, there were many reports of serious quality-control problems with the start-up of overseas factories, as well as rumors of quality-control problems at home in Japan as manufacturers scrambled to cut costs rather than raise export prices.

The coming year should see the start of a movement toward more adventurous cosmetic design and more emphasis on ease of operation. Look for a few surprising new configurations based on portables. Digital audio will continue to proceed strongly, hand in hand with audio/video integration. And, finally, expect higher prices to correspond with higher quality.

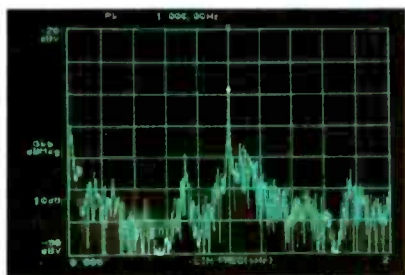
The Japanese will continue to dominate consumer audio well into the next decade as they continue to demonstrate their talent for both business and production technology, as well as their rapid response to market needs and sincere respect for quality and service. The audio industry here is typical of Japanese industry in general, characterized by resilient corporations that will accept low profits in the short term for the sake of the long run. With too much at stake to give up, the Japanese will continue to work hard to keep their position in the world of audio. □

**Bryan Harrell**, STEREO REVIEW'S Tokyo Correspondent, has lived in Japan since 1977.

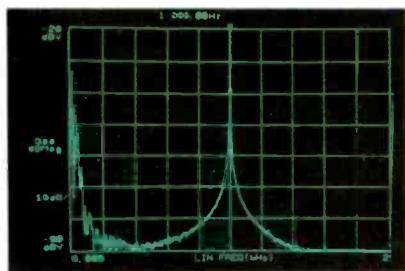




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CIRCLE NO. 121 ON READER SERVICE CARD

# EAST TO WEST



From CD's to TV's, more Japanese products now say "Made in U.S.A."

BY WARREN BERGER

**W**HEN JVC opened a compact disc manufacturing plant in Tuscaloosa, Alabama, last year, the grand opening ceremonies brought together two cultures about as disparate as you'll find. On one side of the podium were the hosts—a contingent of plain-spoken Alabamans headed by their folksy governor, Guy Hunt—while on the other side were the more reserved executives from JVC headquarters in Japan. As the ribbons were cut and the speeches were made, the locals had a little trouble figuring out exactly when to bow, and the visitors had a little trouble pronouncing the word "Tuscaloosa." But on one point the two groups were of a single mind: The merging of Japanese and American efforts, they agreed, seemed to make sense for both sides. For Alabama, the plant represented jobs and revenues; for JVC, it provided a means of supplying the U.S. market without confronting tariffs, currency exchange problems, and other international trade barriers.

Now up and running, JVC's Tuscaloosa plant is hardly unique. All across the U.S. in the past few years, Japanese consumer electronics companies have opened local manufacturing facilities that are producing compact discs, television sets, videocassette recorders, and even loudspeakers to supply the U.S. market. One category of Japanese consumer electronics—home audio electronics such as receivers, CD players, and cassette decks—has not yet found its way into U.S. factories, but the word in the audio industry is that the situation may be ripe for a change. In fact, Onkyo recently broke ground in Columbus, Indiana, for a new



**D**iscipline on the assembly line is tremendous in Japan. That kind of quality control can be transferred here—but it will take some time.

manufacturing facility for speaker drivers that will eventually turn out CD players and other audio products as well.

Spokesmen for several major Japanese hi-fi manufacturers, including Yamaha, Denon, and NEC, agree that American-made Japanese electronics are on the way—though no one will predict, or even estimate, a time of arrival. When it does happen, however, the shift to local manufacturing may affect everything from the price of your next piece of stereo equipment to its design and performance.

While so far only Onkyo has announced plans to begin manufacturing home audio electronics in the U.S., some Japanese companies are already making nonelectronic hi-fi equipment—most notably, loudspeakers—in this country. Producing amplifiers, receivers, and compact disc players here represents a more difficult challenge for Japanese manufacturers, largely because of the technical nature of those products. Still, given the prevailing economic circumstances, it's a challenge they may have to confront.

"There are a number of factors at work," said Robert Heiblim, senior vice president of marketing at Denon America. "A couple are economic—you have the weakening of the dollar against the yen, which is improving the economics of manufacturing in the U.S. At the same time, freight costs for shipping goods from Japan are increasing. And then there's the matter of trade relations. Japanese companies are feeling the pressure to improve their image and relationship with the American market by making more products in the U.S."

Mike Piehl, audio product manager at NEC Home Electronics, agreed. "In the past," he said, "it was always more cost-efficient to produce in Japan. But with costs of parts and labor increasing in Japan, U.S. production is looking more attractive."

NEC is already producing speakers in the U.S., as is Yamaha. According to Yamaha's vice president of marketing, Steve Girod, the company increased U.S. manufacturing by 50 percent last year. "We expect that trend to continue," he said. The challenge now, though, is to find ways to move beyond just speakers.

"The one thing that is stopping a lot of companies from really getting

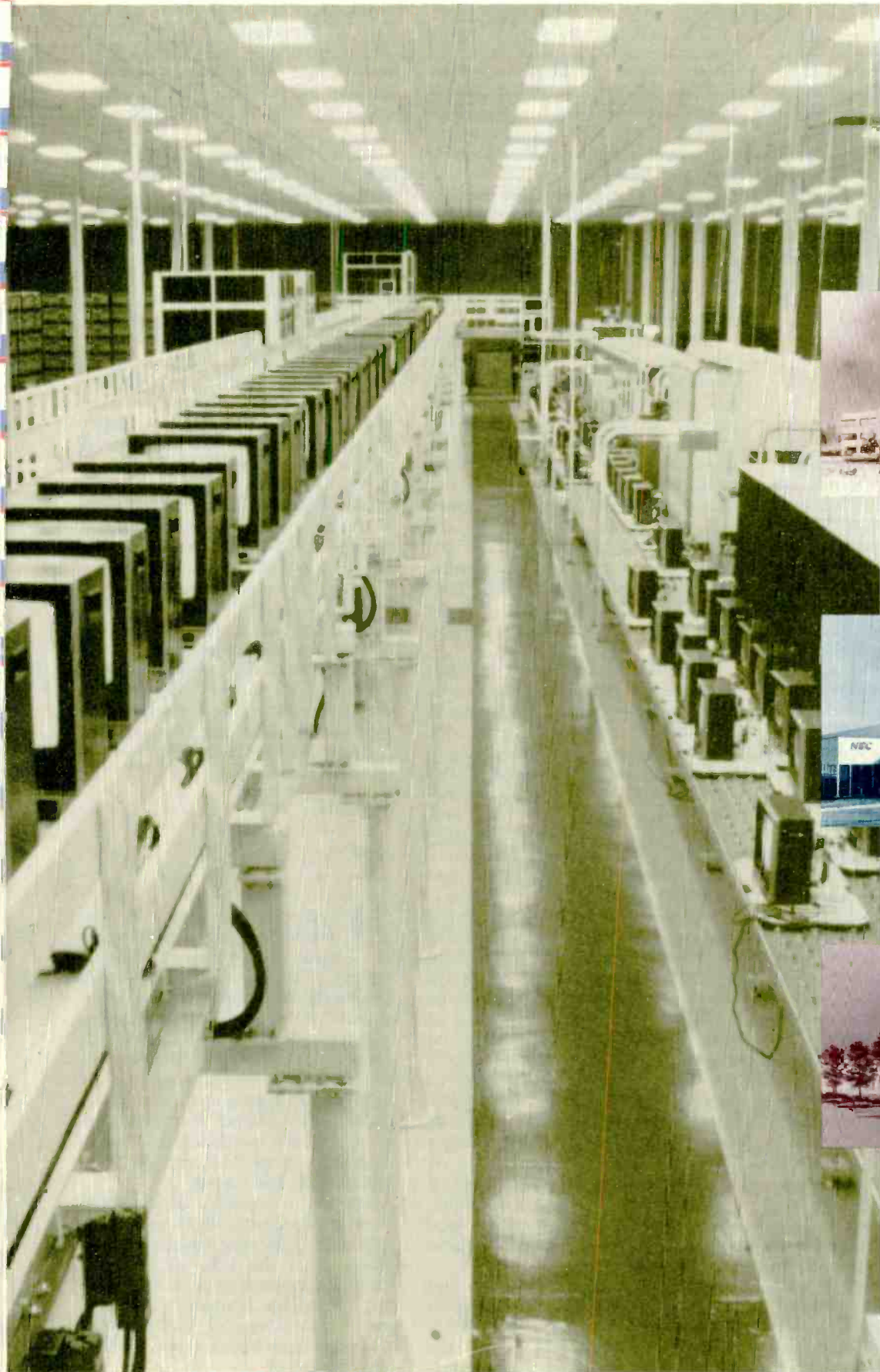
into manufacturing here is the large initial outlay of capital that's required to get started," said NEC's Piehl. Indeed, start-up costs represent more of a problem in audio component production than in VCR or TV production, where costs are quickly recouped because of the high sales volume. The audio market is smaller, which is one reason Japanese manufacturers have held back on building stereo equipment plants here.

High-grade audio components also require sophisticated technical work and strict quality control, which complicates the task of starting up foreign production. Jun Sakamoto, a spokesman for Nakamichi, said that the detailed work that goes into manufacturing his company's products would require "a major investment for production here."

Beyond that, it might require transferring less tangible assets—one being the dedication to quality found on Japanese assembly lines. "The discipline on the line is tremendous in Japan," said Steve Coe, vice president of technical development at Alpine, a company that is now in the process of tripling the size of its U.S. manufacturing facilities. "They really compete with each other to try to achieve zero defects. You need that extreme dedication to quality when you're producing something like a compact disc player. I think that kind of quality control can be transferred here—but it will take some time."

The U.S. has certainly made more than its share of high-quality audio equipment in the past—but U.S. companies have, for the most part, produced electronic components only on a limited scale. Japanese companies manufacturing in the U.S. would operate in a mass-production style quite different from that of the smaller esoteric American audio companies. And in doing that, they'd have no easy time locating the right people and materials.

"There's a void in the U.S. market," said Jim Twerdahl, president of the American hi-fi company Marantz. "In terms of technology, this country has some of the best audio engineers in the world, and it's evidenced in the products coming from the high-end American audio companies. But we don't have as many industrial engineers experienced in mass production of audio equipment."



*Planned expansion for the  
Yamaha USA  
headquarters in Buena  
Park, California*



*The NEC Home  
Electronics factory in  
McDonough, Georgia*



*Drawing of the audio  
plant that Onkyo is  
building in Columbus,  
Indiana*

*Left, a TV assembly line  
in an American  
JVC factory*

Perhaps more significant is the lack of homemade electronic parts in the U.S. In order to build stereo equipment here, plants would have to import semiconductors and other parts from overseas—hence, they'd still be running up against tariffs.

"If the necessary parts were available in the U.S., I think it would become much more feasible for Japanese companies to build audio electronics here," said Rick Noda, president of Pioneer Electronics USA. "Without those parts, it is not as economical."

**N**ODA believes the key to growth of Japanese hi-fi manufacturing in the U.S. may lie with the building of research and development facilities here. Those facilities could help America turn out the parts needed to assemble the components. "The real advance will come when stereo components are completely built—parts and all—in the U.S.," said Denon's Heiblim.

Meanwhile, however, in certain instances Japanese companies may be willing to import parts and assemble audio equipment here. It's already being done with car stereo receivers and tape decks assembled in the U.S. by Matsushita (parent company of Panasonic) and Pioneer. Alpine will soon begin building car stereo amplifiers here. Why the push in car stereo? It can be summed up in one word: pressure.

"There are more trade pressures on the car stereo side, simply because there are more import pressures on cars and anything associated with cars," said Alpine's Coe. "Now, with an election coming, the trade issue could really become a political football. Manufacturers have to be prepared for that."

Political considerations notwithstanding, there's more to the made-in-the-USA audio movement than merely the attempt to avoid trade barriers. As Alpine's Coe put it, "The phrase 'made-in-the-USA' has a nice ring to the consumer."

It may ring well, but how will it play? One might expect that Japanese audio products made here would sound no better or worse than comparable products from overseas. But manufacturers point out that local tastes can sometimes

infiltrate the production process.

"The best example of that can be seen with speakers," said Yamaha's Girod. "The Japanese speakers made in the U.S. tend to be geared more to the tastes of the American market. Generally, consumers in the Japanese market prefer flat-performing speakers with lots of high end. Audio enthusiasts here generally desire a more European flavor of speaker that may be a little more musical and not quite as flat. Having manufacturing in different places helps in addressing the differences in musical tastes."

Subtle changes could, conceivably, creep into American-made Japanese receivers and tape decks as well—particularly if U.S.-based product designers were employed. "Even though the basic direction for electronics, the specs, will always come from the source country, the countries involved in production are very likely to have an influence," said NEC's Piehl. "I foresee people in U.S. factories saying, 'This would be a good feature.' And that idea will work its way back to headquarters and end up in the product."

The effect that U.S.-based manufacturing of Japanese audio might have on the prices of those products is difficult to predict. Right now, stereo pricing in the U.S. is subject to the fluctuations of the yen/dollar relationship. With the dollar currently very weak against the yen, Japanese manufacturers are finding that price increases in the U.S.—modest though they may be—are unavoidable.

Japanese electronic equipment wouldn't necessarily be cheaper if it were made in the U.S., particularly if plants had to import parts for assembly. Companies would also be likely to pass some of the costs of factory-building on to consumers. But some manufacturers say that if the entire process, from parts to final assembly, could be implemented in the U.S., the resulting savings might be substantial enough to result in lower prices at retail. At the very least, the market would be better shielded from monetary fluctuations and changing trade duties, and prices would therefore become more stable.

At present, the Japanese audio products imported into this country definitely are subject to the effects of the dollar's decline against the yen. In light of that, most manufac-

turers warn that consumers can expect to see moderate increases in prices—probably about 5 percent on average—over the next year. A gradual increase in prices may continue for the next few years, in fact.

"The bottom has been reached, and now prices should slowly increase, particularly with more sophisticated components," said Mark Gurvey, Toshiba's national marketing manager for home audio products.

Denon's Heiblim shares that view: "Price increases are necessary to offset the yen/dollar problem," he said. "Actually, prices on amps and receivers started to go up two years ago, but the increases were masked by declines in CD player prices. Now we're likely to see CD player prices go up as well."

As for pricing of CD's themselves—many of which are being manufactured in U.S. plants owned by Japanese companies—the future is unclear. Consumers bothered by the high prices of their CD's can't blame the Japanese, however. Disc-manufacturing plants owned by Sony and Denon are currently turning out blank CD's for about a dollar apiece. Nevertheless, the finished discs are still ending up with price tags of \$12 and up after passing through the recording studio and retail channels.

**A**T the factory level, the low prices of blank discs have come about because of oversupply. "There are too many plants producing discs, and not enough demand," said Jim Frische, executive vice president of the Sony-owned Digital Audio Disc Corporation in Indiana. "It's a buyer's market." In addition to Sony and Denon, other Japanese electronics companies involved in the manufacture of compact discs in the U.S. include JVC, Mitsubishi, and Sanyo.

Having invested considerable sums in CD plants, all of those manufacturers are now finding the CD business in the U.S. to be more competitive than they anticipated. Let's hope the kind of enthusiasm that was evident in Tuscaloosa a year ago hasn't been dampened by the experience. □

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*Stereo Review (February 1988)*

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*High Fidelity (April 1988)*

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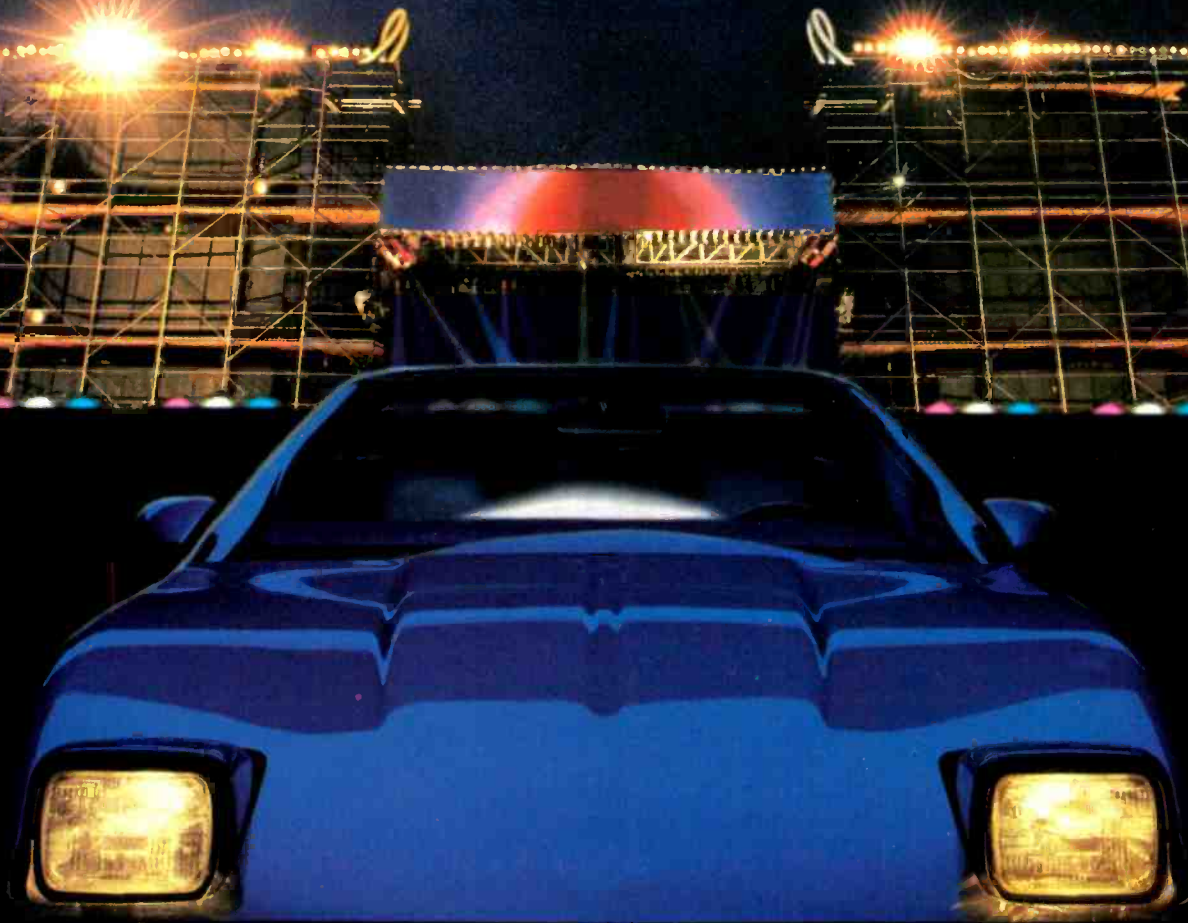
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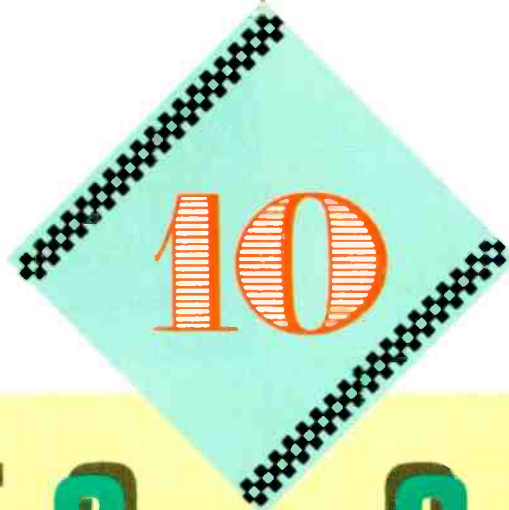


Pictured above, left to right are: The T95, T55, T65 and, the TL900, TL500, TL600.



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# TO GO

**A**BOUT this time of the year most of us—hi-fi enthusiasts, too—turn our thoughts to the great outdoors. And now, with the coming of the portable compact disc player, music lovers don't have to settle for listening just to radio or cassettes while on the go. Compact disc players that weigh as little as 13 ounces and others that can play for up to 5½ hours on a single charge of their tiny batteries can be had at very reasonable cost. Some of these mighty minis even offer such advanced technology as quadruple-oversampling digital filters. One is specially designed—and sized—for the new 3-inch CD's, and another has a digital output for connection to home systems with digital-direct inputs. STEREO REVIEW has not actually tested any of these topflight portable compact disc players, but here's a quick look at what's available. We've indicated the manufacturers' suggested retail prices, and all the performance figures and battery timings are from the manufacturers' specifications.

BY MICHAEL SMOLEN



**1**  
Toshiba's XR-9437 has a built-in AM/FM tuner with nine FM and five AM presets. It features a three-beam laser pickup, a sixteen-track random-access memory, a repeat function, and "quick-program select." It can be powered by four AA batteries, NiCad batteries, or an AC adaptor. Price: \$430.

2

The D-15 features much of the advanced technology used in Sony's home machines, including a Unilinear converter, digital filtering, and an automatic tracking recovery system. Other features include twenty-one-track programming, shuffle play, and optional remote control. Price: \$350.



4

Weighing just 14 ounces, Sony's D-88 Pocket Discman is designed to play back the new 3-inch CD's, but it can also play 5-inch CD's without any kind of adaptor. Price: \$360.



3

Panasonic's SL-NP10 features programming for up to eighteen tracks, a high-cut filter, a single-beam laser pickup, digital filtering, and a repeat function. Available in black, white, or burgundy, it comes with a rechargeable 5-hour battery pack, AC adaptor, and soft carrying case. Price: \$280.



3

Hitachi's DAD-P100 operates on six AA batteries and features automatic track or disc repeat, music scan with audible sound, cueing by track, a three-beam laser, analog filtering, and a built-in AC/DC converter. Price: \$350.



6

The Quasar CD8966 will run for a full 5 hours on a single charge of its battery pack. Other features include eighteen-step random-access programming, a high-cut filter for headphone listening, and digital filtering. Price: \$300.



7

The DPC-77 is Kenwood's first portable CD player. Unlike any other portable, it has a digital output for use in a home system with digital-direct inputs. It also includes a quadruple-oversampling digital filter, and its battery has a 5½-hour charge capacity. Price: \$449.

8

The ultra-thin Sanyo CP12 weighs 13 ounces and features a three-beam laser pickup mechanism, an 86-db dynamic range, sixteen-track programming, track or disc repeat, skip and search controls, a mute switch for headphone use, and a 4½-hour battery charge. Price: \$280.



9

JVC's RC-X3 compact disc boombox has a special CD synchro-start feature to go along with its dual-well cassette deck: It can start the CD player automatically when the cassette deck enters the record mode. Price: \$330.



10

Radio Shack's Realistic CD-3100 has soft-touch controls that emit an audible beep when pressed. Other features include auto-search, two-speed scan in either direction, sixteen-track programming, and a snap-on battery pack that holds four AA batteries. Price: \$280.



# CHO- LIANG LIN

*"By the time I was twenty-three, I thought I could take on any big engagement in the world."*

BY SUSAN ELLIOTT

**I**'m an audiophile nut," violinist Cho-Liang Lin told me in New York after his return from a two-week American tour with the Swedish Radio Symphony, "so I like to make sure my own recordings are up to the highest standards."

Known to his friends as "Jimmy," the twenty-eight-year-old, Taiwanese-born Lin has obviously been uncompromising in setting those standards for himself. His recordings for CBS have drawn unstinting critical praise and won any number of prizes, including a 1987 STEREO REVIEW Record of the Year Award for Mozart's Concertos Nos. 3 and 5.

At the time we met, Lin's next CBS project was to be a recording of the Nielsen Violin Concerto with the Swedish Radio orchestra under its principal conductor, Esa-Pekka Salonen. "The sessions will be fun," he said, "because we've played the piece together now eight or nine times on tour, and it's become sort of second nature for us. Of course, I always insist on performing a piece a lot, especially with the group I'm to record it with."

Coupled with the Sibelius concerto, which Lin will record with the London Sinfonietta under Salonen, the Nielsen recording is scheduled for fall release. Interestingly enough, he will not perform the Nielsen work in any of his scheduled 1988-1989 concerts. "It's a pity," he said. "It's a really difficult piece to pull off technically, and now that I've learned it, I'd like to be a champion for it. But orchestras don't know it, so conductors just aren't interested."

In addition to solo and chamber recitals, Lin's forthcoming season includes ninety orchestral concerts with ensembles ranging from the Philadelphia and Cleveland Orchestras to the Concertgebouw in Amsterdam and the national orchestras of New Zealand and Korea. He will play, among other works, the Beethoven,

Brahms, and Mendelssohn concertos, the Prokofiev Second, and the Tchaikovsky concerto, which he will probably record next year.

"I now limit myself to about seven concertos a season," said Lin. "Five or six years ago, I used to throw everything I knew on the repertoire list. Part of that was an ego trip. I was trying to learn new pieces every year, and as the list got longer I felt it showed that I was getting better.

"But I learned to regret it. When you take on, say, five concertos in two months, it's too much work. Now I think, the shorter the list, the better!"

By his own assessment, Lin has mellowed considerably in the time between his early and late twenties. "I have to admit I was really cocky. I was offended that by the time I was twenty-three, the Boston Symphony hadn't asked me to play with them. I thought I could take on any big engagement in the world."

And no wonder. By the age of twenty-one—the year he graduated from the Juilliard School in New York—Lin had made debuts with the major orchestras of New York, Philadelphia, Chicago, Cleveland, and London, among others, and when he was twenty-two, he was signed by CBS Masterworks. "The initial excitement is overwhelming. You're making a record, you're playing with the Chicago Symphony and the Philadelphia Orchestra. So you figure, 'Why not the rest of them?'" (He finally played with the Boston Symphony in the 1984-1985 season.)

The distinctiveness of Lin's sound is undeniable, even on his first American recording, of the Vieuxtemps Fifth Violin Concerto and the Haydn First with Neville Marriner and the Minnesota Orchestra. He displays not only an assured technical facility but also a lyricism, warmth, and definition of tone that belie his youth. Described by more than one critic as "aristocratic," his unique style is due in no small part to the diversity of his background and musical training.

The son of a research scientist and a high-school English teacher, Lin started his studies in Taiwan at five. When he was eleven, he won the Taiwan National Youth Competition playing Mozart's Violin Concerto No. 1. At that point his mother began to make arrangements for him to pursue more serious musical study abroad.

**H**ER initial plans were thwarted by the government since, as Lin explained, all Taiwanese males are required to serve in the military from ages fifteen to twenty-two. Finally he was granted permission to attend the Conservatorium of Music in Sydney, Australia, on scholarship. "I got out just in the nick of time," he says now. "Many of my musical friends got stuck behind, and more than half of them have changed professions."

Australia provided a steppingstone to Juilliard, his ultimate goal. "At first it gave me a cultural shock, having to switch to English entirely and coping with much greater musical pressure. Still, it was comfortable enough that I was able to grow accustomed to the Western way of life before I took the big plunge and came to New York."

Lin's teacher at the Conservatorium, Robert Pikler, also had a profound impact on him. "Up to that point in my life, I was basically keen on playing the Mendelssohn E Minor Concerto faster than anyone else. But [Pikler] opened up a new horizon to me. He taught me

how to play chamber music, how to enjoy a Brahms symphony or a Bartók string quartet.

"He believed very much in tradition. He had studied with both Kodály and Bartók and was of the lineage from Wagner, Liszt, Brahms, and Strauss, down through Furtwängler and Bruno Walter—that Central European school. His musical language stopped at Bartók, and he was happy with that."

Lin finally came to the U.S. in 1975 and soon began his studies at Juilliard with Dorothy DeLay, well known as the teacher of Itzhak Perlman, Shlomo Mintz, and Nadja Salerno-Sonnenberg, among others. Two years later, at seventeen, Lin won first prize in Spain's Queen Sofia International Violin Competition, and the following year, while he was still a sophomore at Juilliard, the late impresario Sheldon Gold signed him to ICM Artists. He was on his way.

**D**ESPITE his worldwide, whirlwind touring schedule now, Lin is never too busy to take an active hand in his recordings. "Many artists don't worry about a recording once they walk out of the studio," he said. "I think I'm one of the few who actually stay around. I choose all the takes with Steve [Epstein, the producer], and I participate in the mixdown."

His input is more than peripheral: "Sometimes the balance is not exactly as I like, or sometimes I'll be looking for a juicy slide up to a certain note, so I'll ask Steve to try putting that one bar in. He won't send a master out unless I approve of every note."

Except for the forthcoming Nielsen concerto, the repertoire in Lin's eight orchestral and two recital albums has been quite conventional, including, as it does, works by such composers as Bruch, Mendelssohn, Haydn, Stravinsky, and Saint-Saëns. His newest recording, just released, is the second in his series of Mozart concertos with Raymond Leppard and the English Chamber Orchestra.

Thus far, Lin's interest in contemporary music has been confined to live performance. Three years ago he gave the premiere of Elie Siegmeister's Violin Concerto with the (now defunct) Oakland Symphony, and next season he undertakes the first performance of a concerto by Joel Hoffman with the Cincinnati Symphony.

I sensed that Lin would like to be more adventurous in his recorded repertoire, but apparently he doesn't have as much say in *what* he records as in *how* it is recorded. Take the instance of an aborted Barber Violin Concerto project. "The Bruch album [with Leonard Slatkin and the Chicago Symphony] was originally going to be the Barber concerto with the Bernstein Serenade," he said. "It was all set. I had even programmed warm-up dates for it. And the CBS marketing department defeated the notion.

"Oh boy, did they rise and rebel against that album. They said, 'Well, look, if you want to record it, fine. But it will sell two hundred copies, and then it will be deleted, and that will be that. We don't want that.' So the A&R department actually yielded and asked me if I would consider something more standard.

"The idiotic thing was, four months after we canceled the Barber, Slatkin scheduled a recording of it with Elmar Oliveira on another label.

"I don't understand marketing sometimes," said Lin with his ever-present grin. "But in the earlier stages of your career I guess you go with the flow." □

**Robert Plant: Now And Zen** • Heaven Knows, Tall Cool One, Ship Of Fools, Es Paranza 134392

**Emanuel Ax: Beethoven, Piano Concertos Nos. 3 & 4** • Royal Philharmonic. Convin-Ax is a first-rate Beethoven player — Gramophone RCA DIGITAL 154077

**Tina Turner: Break Every Rule** • Two People, Typical Male, Back Where You Started, etc. Capitol DIGITAL 113333

**George Harrison: Cloud Nine** • Title song, I Got My Mind Set On You, more. Warner Dark Horse 174328

**The Legendary Enrico Caruso** • Vesti la giubba, Celeste Aida, Cielo e mar, La donna è mobile, 17 more. RCA 134274

**Decade Best Of Steely Dan** • Rikki Don't Lose That Number, Reeling In The Years, Do It Again, 11 more. MCA 154135

**Slatkin Conducts Russian Showpieces** Pictures At An Exhibition, Classical Symphony more. RCA DIGITAL 154358

**Kenny Rogers: I Prefer The Moonlight** Make No Mistake She's Mine (w. Ronnie Mil-sap), etc. RCA DIGITAL 162743

**Rod Stewart: Greatest Hits** • Do Ya Think I'm Sexy?, Tonights The Night, Maggie May, Hot Legs, etc. Warner Bros. 133779

**The Sound Of Music** • Julie Andrews in the original soundtrack! Do-Re-Mi, My Favorite Things, more. RCA 100046

**Starship: No Protection** • It's Not Over (Til It's Over), Nothings Gonna Stop Us Now, etc. Grunt 163827

**Perry Como: Today** • Making Love To You, The Wind Beneath My Wings, The Best Of Times, You're Nearer, etc. RCA 114787



**The Duke Ellington Orchestra: Digital Duke** 163356

**Dire Straits: Brothers In Arms** • Money For Nothing, etc. Warner Bros. DIGITAL 114734

**Pops in Space** • John Williams & The Boston Pops. Music from Close Encounters, Superman, Star Wars, others. Philips DIGITAL 105392

**La Bamba/Original Soundtrack** • Los Lobos, Donna, La Bamba, more from Brian Setzer, Bo Diddley, others. Warner Slush 120062

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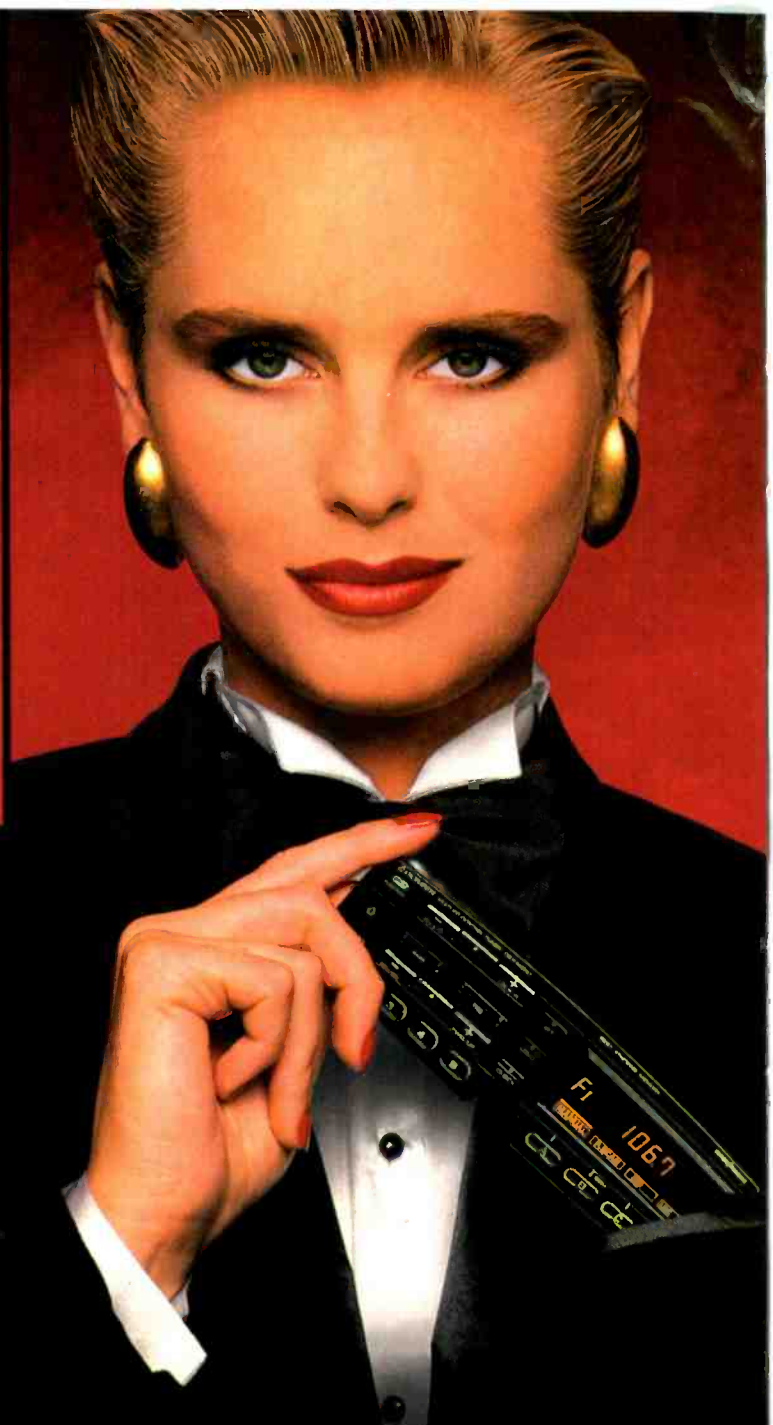
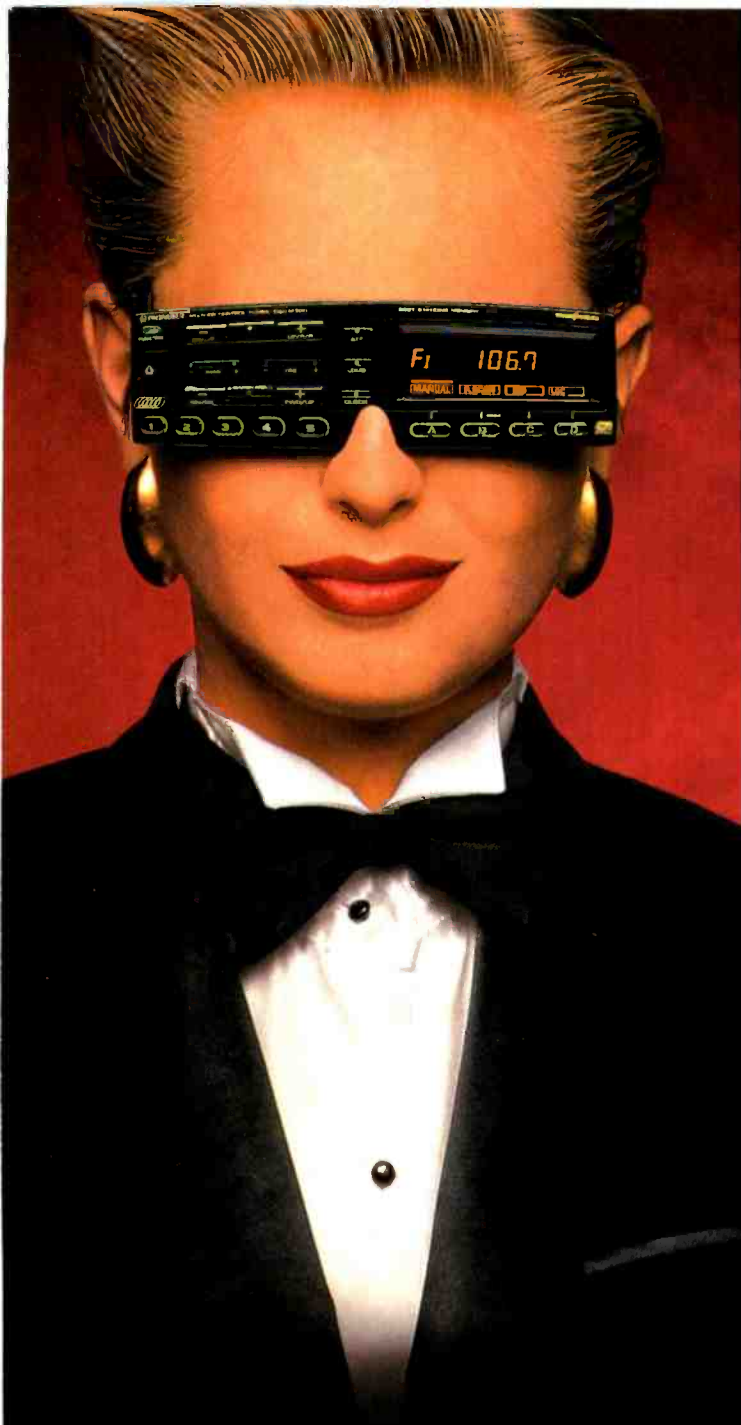
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*Stereo Review's critics choose the outstanding current releases*

## JONI MITCHELL MAKES A NEW MUSICAL MARK

FOR the last fifteen years or so, from "Court and Spark" (1974) through "Dog Eat Dog" (1986), Joni Mitchell has both attracted and discouraged record buyers with the promise that each new album would be a journey into venturesome—and not always easily maneuvered—territory, be it jazz-pop stylings or, in the case of "Dog Eat Dog," modern synth-rock. Now comes "Chalk Mark in a Rain Storm," which, not surprisingly, continues in the layered, audio-effects format of the last album, but which finds Mitchell returning lyrically and thematically to much of her earlier work, consciously drawing from some of her best-known songs.

*My Secret Place*, for example, a jazzy duet with Peter Gabriel that kicks off the program, talks about "All of the girls that you see/In bleachers and café windows," alluding to *Blonde in the Bleachers* from "For the Roses" and *The Last Time I Saw Richard* from "Blue." *Snakes and Ladders*, with its cynical look at married love among the affluent, harks back to the title track of "The Hissing of Summer Lawns" and *Harry's House/Centerpiece* from the same album. And in *The Beat of Black Wings* and *A Bird That Whistles*, Mitchell indulges her fascination with bird images the way she did in *Black Crow* from "Hejira."

As usual, Mitchell, who produced the album with her husband, bassist Larry Klein, delivers a record that positively thrills in places—in the intelligent, original bend of her lyrics, in the shimmering quality of her voice, and in her facility with language and imagery. It is also mesmerizing in spots—particularly in *The Reoccurring Dream*, an assault on Madison Avenue. As in *Tax*

*Free* from "Dog Eat Dog," she uses layers and collages to create pieces that go beyond mere songs, pieces that resemble melodic, rhythmic poems. But if Mitchell has returned to her old exploration of love and romance and how love ebbs and flows in the course of a day or a lifetime, she now seems almost more concerned with the musical vehicle that carries her message than with the message itself.

*My Secret Place*, a fantasy of meeting a lover in a secret place of the mind, is mostly dreamy meanderings without much direction or allure, and Gabriel's voice is too similar to Mitchell's to really work in the trade-off lines. *Number One*, which addresses the issue of vaulting ambition, is, like *Lakota* (about the plight of the Hopi Indian), captivating for the rhythmic form and structure, although not for the lyrical content. And one of the most winning songs here, *The Tea Leaf Prophecy (Lay Down Your Arms)*, the bittersweet story of Molly McGee, who married during World War II and then suffered a life of discontent, takes studied concentration to find the heart of the matter—and the melody—under the layers of production.

At times, too, as in some of her other albums, Mitchell gets almost too camp for her own good—employing Iron Eyes Cody to sing a hypnotic background chant in *Lakota* and drafting the omnipresent Willie Nelson as the voice of Old Dan, the desert rat, in a stark, too intellectual reworking of Bob Nolan's western classic *Cool Water*.

But also as usual, Mitchell turns around and does something so affecting as to sweep everything else aside. Here it's *The Beat of Black Wings*, the story of a disengaged Vietnam War veteran, which is also a story of the natural animosity between the old and the young and a story of the ephemerality of happiness and joy—as long-lasting as a chalk mark in a rain storm. In songs like this one, where she details with shadow and nuance the horrid beauty of survival, Joni Mitchell again proves herself to be what she has always been—one of the most talented people in popular music.

Alanna Nash



**JONI MITCHELL:** *Chalk Mark in a Rain Storm*. Joni Mitchell (vocals, guitars, keyboards); Larry Klein (bass, keyboard programming, congas); Benjamin Orr (bass); Thomas Dolby (Fairlight marimba); Wayne Shorter (saxophones); Billy Idol, Tom Petty, Don Henley, Wendy Melvoin, Lisa Coleman, Willie Nelson, Peter Gabriel, Iron Eyes Cody (background vocals). *My Secret Place*; *Number One*; *Lakota*; *The Tea Leaf Prophecy (Lay Down Your Arms)*; *Dancin' Clown*; *Cool Water*; *The Beat of Black Wings*; *Snakes and Ladders*; *The Reoccurring Dream*; *A Bird That Whistles*. GEFLEN GHS-24172, © M5G-24172, © 24172-2 (46 min).

NORMAN SIEFF/GEFFEN RECORDS

## POLLINI'S PERSUASIVE SCHUBERT

**T**HERE are some listeners, I suppose, who find the juxtaposition of Maurizio Pollini's name with Schubert's somehow inappropriate—who regard Pollini as an exponent of an aristocratic approach at odds with the warm humanity of Schubert's music. One has to wonder how such notions arise. To be sure, Pollini is an aristocratic performer: Everything he does is characterized by elegance, by refinement—but it is also characterized by total commitment and involvement. A Schubert recording Pollini made for Deutsche Grammophon about fifteen years ago of the *Wanderer-Fantasie* and the big A Minor Sonata (D. 845), since transferred to compact disc, is an outstanding example of how music can be refreshed without being subjected to eccentricity or distortion.

Now DG has had the happy idea of recording Pollini in all three of the "grand sonatas" Schubert composed as a set at the end of his life and of packaging them together with another late work of similar proportions, the Three Piano Pieces (D. 946), sometimes called *Impromptu*, and the *Allegretto in C*

Minor from the same period in a set of two very generously filled compact discs. The performances are without exception superb.

Just as the brilliance in Ravel's music more or less takes care of itself if the composer's instructions are followed, in the Schubert sonatas the emotional content will make itself felt without added emphasis from the performer. Pollini plays the sonatas with his characteristic elegance and commitment, and the essential Schubert comes to glowing life. There is certainly nothing "aloof" or "cold" in these performances. They breathe Schubert's warmth and spontaneity, and they convey the honest emotions that are the heart of this music. The true stature of these valedictory sonatas, unencumbered by any subjective interpretive overlay, is here all the more impressive, the pleasure that much deeper.

That *all* the performances in this set should be equally persuasive is almost as remarkable as the level Schubert himself maintained in creating these miraculous works in the last months of his foreshortened life. Pollini takes the first-movement repeats in all three sonatas, but he doesn't dawdle. In the final movements he gives the music plenty of breathing space, never allowing spontaneity to yield to impetuosity. There is little in the way of discernible gear-shifting; the rhythms are steady, the phrasing clean, the tone uncontrivedly lustrous. The five works were not all recorded at the same time or in the same place, and the change in ambience is apparent here and there. There is some plumminess in the sound of the A Major Sonata, but not enough to get in the way. In general, the clarity and vividness of the recordings beautifully convey those qualities in the performances themselves.

*Richard Freed*

**SCHUBERT:** *Piano Sonata in C Minor, Op. posth. (D. 958); Piano Sonata in A Major, Op. posth. (D. 959); Piano Sonata in B-flat Major, Op. posth. (D. 960); Allegretto in C Minor (D. 915); Three Piano Pieces, Op. posth. (D. 946).* Maurizio Pollini (piano). DEUTSCHE GRAMMOPHON ◊ 419 229-1 three LP's, © 419 229-4 two cassettes, © 419 229-2 two CD's (142 min).

## ROBERT PLANT: THE ZEPPELIN CONNECTION

**I**N view of all the critical canonization of Led Zeppelin these days, not to mention the rise of bands like the Cult and Kingdom Come that imitate Zeppelin with religious reverence, it's worth



ESPARANZA RECORDS

noting that the original outfit was a somewhat dicey proposition. Yes, Zep's records were spectacularly produced, and yes, the band's relentlessly swirling riffs and instrumental firepower could be overwhelming at times. On the other hand, they plodded as often as they rocked, their lyrics were serviceable at best, more often an uneasy mixture of hippie foolishness and sniggering sexism, and Robert Plant often seemed more of a cartoon than a singer. So it's nice to report that "Now and Zen," Plant's very fine new solo album, demonstrates real artistic growth.

The Zeppelin connection is established at the outset: The first two tracks feature an apparently awake Jimmy Page on guitar, and in the third, *Tall Cool One*, there are some very canny snippets from famous Zeppelin records. These are impressive in a chilly sort of way, but even more impressive are tracks like *Dance on My Own*, a James Brown



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## BEST RECORDINGS OF THE MONTH

Meets Zep or Orientalia Goes High Tech concoction, and *Helen of Troy*, which wouldn't have been out of place on a vintage Zep record—except for the astonishing new subtlety and control of Plant's singing. Also lots of fun are *Billy's Revenge*, with its doo-wop opening and heavy-metal rockabilly riffs; *Ship of Fools*, which updates the folk ambience and dynamics of *Stairway to Heaven*, only without the pomposity; and the concluding *White, Clean and Neat*, a left-handed tribute to Johnny Ray in which Plant tells the story of growing up in the Fifties and discovering rock-and-roll.

All in all, a superior piece of work. Not everything here works, of course. Lines like "I'm so tall and you're so cute" are perilously close to the kind of thing I would have thought Spinal Tap had parodied out of existence. But when the rhythms are right, and when the supporting players and Plant's surprisingly expressive vocals all kick in, "Now and Zen" is one of the most interesting mainstream rock albums of the year. *Steve Simels*

**ROBERT PLANT: *Now and Zen*.** Robert Plant (vocals); Jimmy Page, Doug Boyle (guitar); Phil Scragg (bass); Chris Blackwell (drums); other musicians. *Heaven Knows; Dance on My Own; Tall Cool One; The Way I Feel; Helen of Troy; Billy's Revenge; Ship of Fools; Why; White, Clean and Neat.* ESPARANZA/ATLANTIC 90863-1, © 90863-4, © 90863-2 (42 min).

### BYCHKOV CONDUCTS MENDELSSOHN

**F**ROM the very outset of Semyon Bychkov's new Philips recording of Mendelssohn's *Scottish* and *Italian* Symphonies, it is clear that this conductor knows exactly what he wants—and he gets it from the London Philharmonic Orchestra.

The somber opening bars of the *Scottish* are not only played very expressively, but with an unusual purity of violin tone. Throughout the main body of the first move-



Conductor Semyon Bychkov

ment and in the airy scherzo Bychkov takes great pains with details of orchestral color, but never at the expense of rhythmic vitality and tension. The scherzo's coda exhibits orchestral elegance in the highest degree. Following the elegiac slow movement comes an *allegro vivacissimo* opening to the finale that is as fierce as any I have ever heard. The epilogue is aptly ceremonious, never merely pompous.

The opening movement of the *Italian* Symphony is played with verve, and Bychkov's inclusion of the exposition repeat and its transitional passage is most welcome. The so-called "Pilgrim's March" second movement is done with great elegance and color. The third movement can often be a bore, but in this reading Bychkov instills a surprisingly poetic element, notably in the fanfare figures, which he very effectively paces more deliberately than usual. The final *saltarello* goes at a tremendous clip, and the development section features some spine-tingling pianissimos. The sonics in both symphonies are spacious and crystalline. *David Hall*

**MENDELSSOHN: *Symphony No. 3, in A Minor, Op. 56 ("Scottish"); Symphony No. 4, in A Major, Op. 90 ("Italian")*.** London Philharmonic Orchestra. Semyon Bychkov cond. PHILIPS © 420 211-4, © 420 211-2 (68 min).

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□ **NEW YORK DOLLS: *Too Much Too Soon*.** MERCURY 834 230-2. "Entertaining as hell" (July 1974).

#### CLASSICAL

□ **BETHOVEN: *Fidelio*.** Modl, Jurinac, Poell, Windgassen; Furtwängler. RODOLPHE/HARMONIA MUNDI USA RPC 32494. Mono recording from 1954, complete on one CD (144 min).

□ **ROSSINI: *L'italiana in Algeri*.** Horne, Ramey, Scimone. ERATO ECD 88200 (two CD's). "Zestful" (Best of Month, July 1981).

□ **SAINT-SAËNS: *Symphony No. 3*.** Fox, Ormandy. RCA 7737-2-RV. "Brilliant" (October 1974).

□ **SCHUBERT: *Moments musicaux*.** SCHUMANN: *Nachtstücke*. Gilels. MELODIYA/MOBILE FIDELITY MFCD 871. "Blinding textural clarity" (July 1969).

□ **TCHAIKOVSKY: *Piano Trio in A Minor*.** Ashkenazy, Perlman, Harrell. ANGEL CDC-47988. "Impassioned" (August 1981).

□ **THOMSON: *Four Saints in Three Acts*.** Thome. NONESUCH 79035-2 (two CD's). "An event to celebrate" (Best of Month, December 1982).

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*Discs and tapes reviewed by Chris Albertson, Phyl Garland, Ron Givens, Roy Hemming, Alanna Nash, Mark Peel, and Steve Simels*

**RICK ASTLEY: *Whenever You Need Somebody*.** Rick Astley (vocals); Matt Aitken (guitar); other musicians. *Never Gonna Give You Up; Whenever You Need Somebody; Together Forever; It Would Take a Strong Strong Man*; and six others. RCA 6822-1-R, © 6822-4-R, © 6822-2-R (37 min).

Performance: *Yecch*  
Recording: *Okay*

Rick Astley, the latest British r-&-b-manqué pop star, is a modest young man who, in this album, at least, has much to be modest about. "Whenever You Need Somebody" is unabashed Thatcherite yuppie soul (not for nothing does his management bill it as "The Sound of a Bright Young Britain"), and while Astley is a pleasant enough singer, his material and his performances suggest pricey wine bars rather than blues clubs. There's nary a hint of sweat, passion, or any human feelings whatsoever. The album's most telling track, and certainly the most unintentionally funny, is the concluding *When I Fall in Love*, a tribute to (no kidding) the late Nat King Cole. In keeping with the upscale nature of the whole project, Astley's producers hired Gordon Jenkins to do the arrangement. The result, however, merely proves how essentially *arriviste* Astley is. Sorry, guys, you can't buy class any more than you can buy soul. All in all, an early candidate for most pathetic album of 1988. S.S.

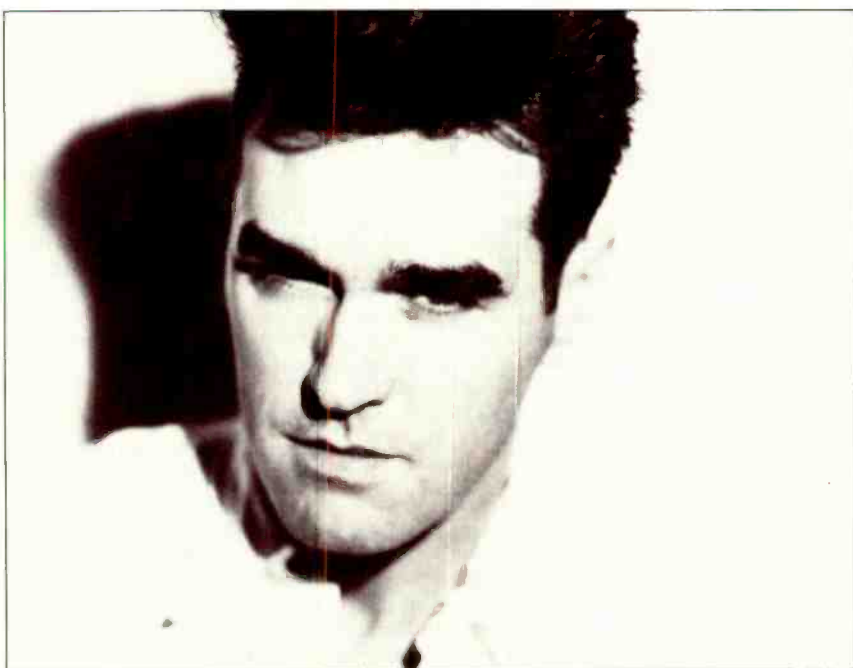
**LARRY CARR: *Fit as a Fiddle*.** Larry Carr (vocals); instrumental accompaniment. *Fresh as a Daisy; I've Got a Crush on You; This Is So Nice; Wait Till You See Her; Love Me Tomorrow*; and eight others. AUDIOPHILE AP-223.

Performance: *Daisy-fresh*  
Recording: *Close and clean*

Considering how much the late Larry Carr did as a record producer to preserve (and keep in LP circulation) some of the best recordings by the great pop singers of the 1920's to the 1940's, it's ironic that his own discography should

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## VIVA MORRISSEY

**T**HE Smiths embodied more paradoxes than any band since the Sex Pistols. They were pacifists, yet *provocateurs*, gentle boys with a violent streak. Their songs were acid, critical observations set in an upbeat, tuneful context. By the time the Smiths disbanded last year, the group's lead singer, Morrissey, seemed headed over the abyss. Their final album, "Strangeways," was unrelievedly mordant; worse, it lacked the wit that had always made Morrissey's bitter pills palatable. Abruptly, guitarist Johnny Marr and his associates gave Morrissey their notices.

Now Morrissey is back. And it's fittingly paradoxical that the first thing you want to hear in his new solo album, "Viva Hate," is what he's done about a guitar sound now that he's without Marr. Morrissey answers from the very first note. The ringing acoustic playfulness of Marr's twelve-string has been replaced by the growling electricity of Vini Reilly from the band Durutti Column. It's not as jumpy, but it still sounds like the Smiths. Morrissey clearly exerts a powerful influence over whomever he's working with.

Morrissey hasn't cheered up any, but he's recovered the form he lost—and none of his venom seems aimed at his former bandmates. Instead, he presents another series of tragicomic tableaux, savagely rendered and discomfitingly accurate. *Alsatian Cousin* is a character study in obsessive jealousy. *Little Man* muses on a washed-up teen idol—you

may be reminded of Bobby Sherman or Andy Gibb. *Everyday Is Like Sunday* describes the sort of vacation you'd expect Morrissey to have—sitting on a cold beach under a gray sky, scribbling a postcard, "Wish I weren't here." Morrissey is so accustomed to writing in the first person that he ends up being a spokesman for views you can't quite believe he'd admit to. In *Bengali in Platforms*, for example, he warns England's growing immigrant population to stay away ("Life is hard enough when you belong here/Shelve your Western plans").

The one song directed at his old band, *Break Up the Family*, tries to be resolute rather than resentful. If the band's dissolution was inevitable, for his part Morrissey is happier than ever. It rings the one hollow note on this otherwise excellent comeback for the St. Sebastian of rock. Morrissey's band may have deserted him, but fortunately for us, his muse didn't. Mark Peel

**MORRISSEY: *Viva Hate*.** Morrissey (vocals); Vini Reilly (guitars, keyboard); other musicians. *Alsatian Cousin; Little Man, What Now?; Everyday Is Like Sunday; Bengali in Platforms; Angel, Angel, Down We Go Together; Late Night, Maudlin Street; Suedehead; Break Up the Family; The Ordinary Boys; I Don't Mind If You Forget Me; Dial-a-Cliché; Margaret on the Guillotine; Hairdresser on Fire* (CD only). SIRE/REPRISE 25699-1, © 25699-4, © 25699-2 (46 min).

be so skimpy. Health problems in recent years forced him to cut back as a performer, too, but they certainly didn't affect his vocal cords or the special insights he brought to this mixture of familiar and unfamiliar songs by the Gershwins, Arlen and Mercer, Rodgers and Hart, Porter, and others. A first-rate group of musicians backs him up as well, with especially noteworthy work by pianist Hubert Arnold and trumpeter Richard Sudhalter. This is the sort of album that lovers of American show music will be enjoying and learning from for years. For Larry Carr, it's a fitting legacy. *R.H.*

**KINGDOM COME.** Kingdom Come (vocals and instrumentals). *Living Out of Touch; Pushin' Hard; What Love Can Be; 17; The Shuffle; Get It On;* and four others. POLYDOR 835 368-1, © 835 368-4, © 835 368-2 (47 min).

Performance: *Artificial Plant*  
Recording: *Good*

This would be a great heavy-metal album if you measured greatness by how much the singer sounds like Robert Plant. Kingdom Come's lead singer, Lenny Wolf, sounds more like Plant than Plant himself ever did. He's got Plant's cadences, his squeals, his phrasing. It's amazing. But is it great metal? Is Kingdom Come the long-awaited successor to Led Zeppelin? Well, Rich Little did a great impersonation of

Richard Nixon, but no one suggested Little step in as President after Watergate. The answer is, no, it's not great metal. It's not even good metal. It's Ronco metal—a budget imitation that sounds like the real thing but is missing two ingredients: songs that mean anything and an inflatable Jimmy Page doll to accompany Wolf's artificial-lemon squeezing. Now that Robert Plant is back, I'm not at all sure we need an imitation. *M.P.*

**GLADYS KNIGHT AND THE PIPS:** *All Our Love.* Gladys Knight and the Pips (vocals); vocal and instrumental accompaniment. *Love Overboard; Lovin' on Next to Nothin'; Thief in Paradise; You; Let Me Be the One; Complete Recovery;* and five others. MCA MCA-42004, © MCAC-42004, © MCAD-42004 (55 min).

Performance: *Still wonderful*  
Recording: *Very good*

The voice of Gladys Knight, with its rich, warm texture and knowing quality, must be one of the wonders of the world. Almost anything she records is a joy to hear, and this latest album by Knight and the Pips, their first on MCA, is no exception. It offers a pleasing mix of ballads and dance tunes that should delight old fans and perhaps lure some new ones. An assortment of producers have invested a lot of effort in giving "All Our Love" a contemporary

sound, paying close attention to rhythm tracks and other slick touches. This should help insure success for catchy tunes like *Love Overboard* and *Lovin' on Next to Nothin'*, but what really counts is the fine singing, especially in an intoxicatingly sensual song called *You*, in which Knight holds forth gloriously. Moments like that are worth waiting for. *P.G.*

**MIRIAM MAKEBA:** *Sangoma.* Miriam Makeba (vocals); vocal and instrumental accompaniment. *Emabhaceni; Baxabene Oxamu; Ngalala Phantsi; Ihoyiya; Kulo Nyaka; Baya Jabula; Mabhongo;* and twelve others. WARNER BROS. 25673-1, © 25673-4, © 25673-2 (42 min).

Performance: *Magnetic*  
Recording: *Very good*

"*Sangoma*," the new recording by exiled South African singer Miriam Makeba, is significant in several respects. Although she has toured extensively during the past two decades, this is the first album she has recorded in the United States in nearly twenty years, since her marriage to the controversial black leader Stokely Carmichael led to widespread cancellation of her concert and recording contracts. And it comes at a time when international concern about political events in South Africa has focused attention on that nation's artists. Release of the album also coincides with publication of Makeba's autobiography, *Makeba: My Story*, and it follows her six-month sojourn with Paul Simon's Graceland World Tour, which introduced her to many new listeners.

Release of this album is also a joyous occasion for those who recall Makeba as the elegantly gowned and exquisitely gifted young woman who appeared with Harry Belafonte back in the early Sixties. Her artistry today remains as magnetic as ever. Indeed, it would take a singer of exceptional self-assurance to produce an album as idiomatic as this one is. In her earlier recordings, Makeba presented material geared to Western tastes and was careful to introduce her African songs with charming explanations of their significance. Now, at fifty-nine, having weathered a battle with cancer and other personal hardships, and known throughout the world as "Mama Africa," she goes directly to the source of her inspiration—the music of her heritage.

The theme that unifies "*Sangoma*" is Makeba's own profound belief in a spiritual healing power. It is dedicated to her mother, who was a *sangoma*, or healer, and its nineteen songs were among the first that Makeba knew as a child. They range from the nonsense syllables of *Baxabene Oxamu*, a nursery rhyme used to teach children how to make the clicking sounds of the Xhosa language, to the rhythmic cadences of *Mosadi Ku Rima*, a women's work

*Kingdom Come: the long-awaited successor to Led Zeppelin?*

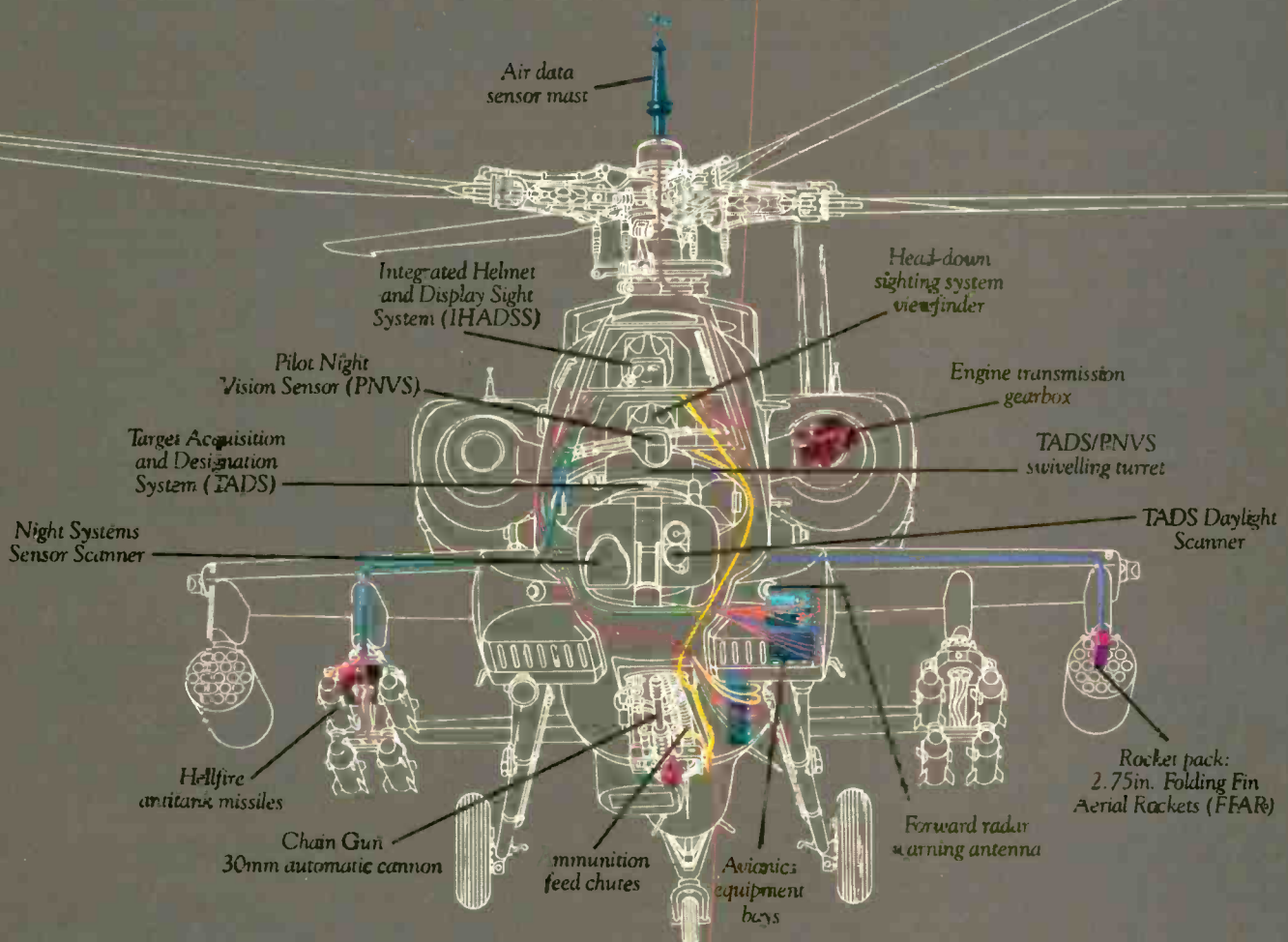




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## A PORTRAIT OF ERIC CLAPTON



IT'S not easy being God. If you doubt it, just ask Eric Clapton, who found himself so labeled at the dawn of his career and who has spent the intervening decades alternately avoiding the tag and attempting to live up to it. And if you want to hear how fascinatingly these two impulses have affected the singer/guitarist's work, check out "Crossroads," the intelligently programmed, sonically refurbished, embarrassment-of-riches retrospective just assembled by Polydor.

The compilation's producer, Bill Levenson, was clearly aiming for something akin to Bob Dylan's "Biograph" package, and in some ways what he has achieved is an even clearer portrait of his artist. The set is arranged chronologically and includes Clapton's very earliest (1963) demos with the Yardbirds, which are charming as history but artistically negligible; his blues-purist work with John Mayall; the sometimes impressive, sometimes hideously indulgent Cream epics; his overwhelming, deeply personal blues evocations with Derek and the Dominos; the mid-Seventies *Cocaine* period; and, finally, a remake of *After Midnight* that he originally cut for a beer commercial.

With rare and niggling exceptions, Levenson has included everything worth including, from a newly remixed *Layla* (a revelation) to the wonderful psychedelic trifle *Anyone for Tennis* to some B-side rarities like the magnificently weepy slide-guitar opus *Someone Like You*. And what comes across is just how focused and consistent a musician Clapton has been, almost from the beginning. Both as guitarist and singer, everything he's done has been clean, simple, and passionate. Except during the "Cream Live" period, he's rarely

wasted a note or faked a feeling, much like his original idol, the great Delta bluesman Robert Johnson. Even at his most laid back, Clapton's work has always been both honest and lean.

There's a lot to digest here, and not all of it, particularly the more blatantly commercial Eighties tracks, is sufficiently transcendent to justify talk of deification. Still, enough of it—the searing, time-stopping guitar solos on *Hideaway* and *All Your Love*, the unstoppable rolling and tumbling of Cream's live version of Johnson's *Crossroads*, the poignance and power of the previously unheard Dominos material—is transcendent enough to make you understand how such talk got started and to give you an idea of why Eric Clapton, of all the Sixties rock guitar heroes, is the only one whose work justifies a retrospective like this. *Steve Simels*

**ERIC CLAPTON: *Crossroads*.** Eric Clapton (vocals, guitar); other musicians. The Yardbirds: *Boom Boom; Honey in Your Hips; Baby What's Wrong; I Wish You Would; A Certain Girl; Good Morning Little Schoolgirl; I Ain't Got You; For Your Love; Got to Hurry*. John Mayall and Eric Clapton: *Lonely Years; Bernard Jenkins*. John Mayall's Bluesbreakers: *Hideaway; All Your Love; Ramblin'; On My Mind; Have You Ever Loved a Woman*. Cream: *Wrapping Paper; I Feel Free; Spoonful; Lawdy Mama; Strange Brew; Sunshine of Your Love; Tales of Brave Ulysses; Steppin' Out; Anyone for Tennis; White Room; Crossroads; Badge*. Blind Faith: *Presence of the Lord; Can't Find My Way Home; Sleeping in the Ground*. Delaney and Bonnie: *Comin' Home*. Eric Clapton: *Blues Power; After Midnight; Let It Rain*. Derek and the Dominos: *Tell the Truth; Roll It Over; Layla*. Eric Clapton and Duane Allman: *Mean Old World*. Derek and the Dominos: *Key to the Highway; Crossroads; Got to Get Better in a Little While; Evil; One More Chance; Mean Old Frisco; Snake Lake Blues*. Eric Clapton: *Let It Grow; Ain't That Lovin' You; Motherless Children; I Shot the Sheriff; Better Make It Through Today; The Sky Is Crying; I Found a Love; (When Things Go Wrong) It Hurts Me Too; Whatcha Gonna Do; Knockin' on Heaven's Door; Someone Like You; Hello Old Friend; Sign Language; Further On up the Road; Lay Down Sally; Wonderful Tonight; Cocaine; Promises; If I Don't Be There by Morning; Double Trouble; I Can't Stand It; The Shape You're In; Heaven Is One Step Away; She's Waiting; Too Bad; Miss You; Wanna Make Love to You; After Midnight*. POLYDOR 835 261-1 six LP's, © 835 261-4 four cassettes, © 835 261-2 four CD's (294 min).

song. Although all the songs are centuries old, there is a contemporary ring to *Ingwemabala*, which alludes to the legend of a spotted leopard found frozen on the slopes of Mt. Kilimanjaro, far from its usual terrain; as set forth by Makeba, the story takes on political connotations. While the music itself is magically infectious throughout, appreciation of the songs is greatly enhanced by the liner notes, which explain their origins. *P.G.*

**TEENA MARIE: *Naked to the World*.** Teena Marie (vocals, synthesizers); vocal and instrumental accompaniment. *Trick Bag; Ooo La La La; Crocodile Tears; The Once and Future Dream; Work It;* and five others. EPIC FE 40872, © FET 40872, © CK 40872 (49 min).

Performance: *Unrestrained*  
Recording: *Good*

If you're going to be emotive, you might as well go all the way, as Teena Marie does in her eighth solo album, in which she lays her musical soul bare. In addition to straightforward dance-floor odysseys with minimal melody and maximal backbeat, she boldly goes where her hyper-romanticism takes her. As a singer, she pushes her voice to its limit with a variety of mannerisms, from Betty Boop squeals to Minnie Riperton tweaks to Connie Francis sobs. On the title cut, for instance, she sings every third note with a throb. Teena Marie isn't timid as a composer either. In *Crocodile Tears*, a diatribe from a woman who finds out her man has been cheating, a sardonic reference in the lyrics to an orchestra brings on a violin solo—accompanied by the sound of a sobbing woman. Even if some of the exaggerated effects miss the mark, Teena Marie produces them so relentlessly, and with such sincerity, that you can't help but be swayed by her passion. *R.G.*

**IAN MATTHEWS: *Walking a Changing Line*.** Ian Matthews (vocals, guitar); vocal and instrumental accompaniment. *Standing Still; Except for a Tear; Alive Alone; On Squirrel Hill; Lovers by Rote;* and five others. WINDHAM HILL WH-1070, © WT-1070, © WD-1070 (43 min).

Performance: *Pristine*  
Recording: *Very good*

"Walking a Changing Line" is the first vocal album from Windham Hill, and it represents an auspicious beginning. It also marks the return to recordings of Ian Matthews, a talented singer and guitarist who has been away from the studio since 1983.

The album showcases the hip-yet-sensitive compositional talents of Jules Shear, who has performed in the groups Funky Kings and Jules and the Polar Bears and who now has an established career as a soloist. Shear composes idiosyncratic pop songs—jaundiced obser-

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ventions about life and romance set to bouncy, hook-saturated music—and the sweet-voiced, straightforward Matthews might not seem like the most natural person to sing them. But while his versions are virtually polar opposites of Shear's own—smooth instead of quirky, sincere rather than smart-alecky—the combination works: Matthews's voice softens the hard edge of the songs, and they harden the soft edge of his voice. The airy treatment here of *Standing Still*, for example, belies the bittersweet, heartbroken tone of the words ("I wanna hide/I wanna dig in deep/Pull over me/The hot cape of sleep"), creating a palpable tension.

"Walking a Changing Line" also showcases, on separate tracks, the work of keyboardists Van Dyke Parks, Patrick O'Hearn, Osamu Kitajima, Fred Simon (who wrote the one song not by Shear), Paul Hertzog, and Mark Hallman, and the arrangements range from the funky percolation of *Following Every Finger* to the moody atmospherics of *This Fabrication*. But the production and performances both fulfill that admirable interpretive goal of serving well the singer and the song. *R.G.*

**MEGADETH: *So Far, So Good . . . So What!*** Megadeth (vocals and instru-

mentals). *Into the Lungs of Hell; Set the World Afire; Anarchy in the U.K.; Mary Jane*; and four others. CAPITOL C1-48148, © C4-48148, © C2-48148 (34 min).

Performance: *Mainstream metal*  
Recording: *Okay*

Megadeth is a third-tier heavy-metal band, but it's undoubtedly the best third-tier heavy-metal band working today. Of course, like heavy metal in general, everything about Megadeth is a put-on, from its name to this album's title to its dutiful Tipper Sticker (a warning of offensive lyrics), which metal bands are now using to enhance sales in the teen market. Being some years removed from that demographic, I tend to judge heavy metal by the degree to which the band can surprise instead of the extent to which it offends. Megadeth is pretty respectable for the genre—they don't advocate dismemberment, and they do restrict their lustful impulses to the living—and there are one or two nice surprises here. Foremost is the cover of the punk anthem *Anarchy in the U.K.* Though not nearly as deranged as the original, it features far more coherent guitar work. (This is the first time I've been able to understand the lyrics, too—they're great!)

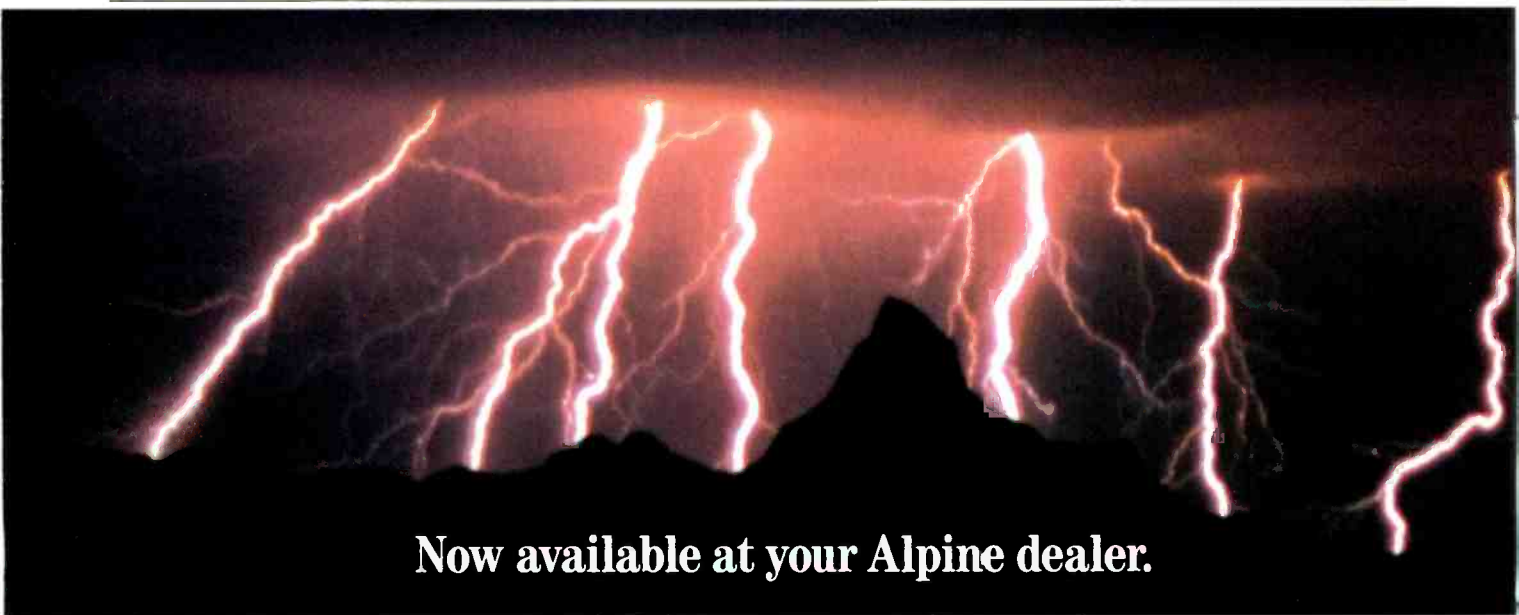
Other than that, the surprises tend to come as grating guitar sounds (like an amplified electric sander) and gyrating arrangements that change tempo frequently and at random. *M.P.*

**JONI MITCHELL: *Chalk Mark in a Rain Storm*** (see *Best of the Month*, page 79)

**NRBQ: *God Bless Us All***. NRBQ (vocals and instrumentals); the Whole Wheat Horns (instrumentals). *Crazy Like a Fox; Here Comes Terry; Every Boy, Every Girl; Sitting in the Park; She Got the House; Down at the Zoo*; and six others. ROUNDER 3108, © C-3108, © CD-3108 (45 min).

Performance: *Wonderful*  
Recording: *Good*

In many ways, NRBQ is the American equivalent of Brinsley Schwarz: a band launched with disastrous hype that persevered nonetheless, turned into a fabulous live act, and eventually gained critical respect without ever selling many records. Unlike the Brinsleys, however, NRBQ is still at it, and this new live set (its first) provides a pretty good inkling of why it's so special. Basically, what NRBQ's got is sensational musicianship, a truly eclectic ap-



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proach—everything from rockabilly to free jazz—and a wonderful sense of humor, all of which are on display here, making this simultaneously one of the least pretentious and the most impressive live rock albums in memory. Picks to click: a wonderfully demented version of Billy Stewart's mid-Sixties soft-soul classic *Sitting in the Park*, a fire-breathing version of the band's own near-hit *Me and the Boys*, and *Here Comes Terry*, perhaps the most off-the-wall introduce-the-band number you're likely to hear this century. Grab this one fast. S.S.

**THE O'KANES: *Tired of the Runnin'*.** Jamie O'Hara (acoustic guitar, vocals); Kieran Kane (mandolin, vocals); Richard Kane (electric guitar, fiddle, banjo); other musicians. *One True Love: All Because of You; Blue Love; Highway 55; Tired of the Runnin'*; and five others. COLUMBIA BFC 44066, © BCT 44066, © CK 44066 (41 min).

Performance: *Head-turning*  
Recording: *Nice*

In the eagerly awaited follow-up to their dynamic debut album, Jamie O'Hara and Kieran Kane—otherwise known as the O'Kanes—have remained true to its spirit, encoring their trademark acous-

tic country-rock-bluegrass sound and writing all but one of the ten cuts.

In many ways this is not nearly the commercial album the first one was, but it is more interesting musically, from the Everly Brothers-like *In My Heart* and *Blue Love* to the folky murder ballad *Highway 55*. "Tired of the Runnin'" draws on Kane and O'Hara's Irish roots as well, the ethnic strains wending their way into the framework of most of the songs. The bluegrass sound is also more pronounced, particularly in the title song, with its familiar theme of boy gone wrong, and *Rocky Road*, although the latter finishes out side one with a long instrumental break more reminiscent of the Allman Brothers than the Osborne Brothers. And if the two songwriters are somewhat short on humor and irony, they have wisely chosen to include Jesse Winchester's wonderful *Isn't That So*.

All in all, this album is an entertaining mixed bag: *One True Love*, the first single, finds a rockabilly groove somewhere between early Elvis and Eddie Rabbitt. And, as usual, the vocals are nicely balanced and well suited to the material, and the instrumental backing—especially Richard Kane's electric-guitar filigree—is beautifully delicate and supportive of the group's ensemble

sound. At times, the songs are so sparsely drawn as to make you wish for a tad more muscle behind both the lyrics and melodies, but there is an undeniable charm to the simplicity of the sound. Like the O'Kanes' debut record, this is a keeper. A.N.

**ROBERT PLANT: *Now and Zen*** (see Best of the Month, page 80)

**DARDEN SMITH.** Darden Smith (vocals, guitar); vocal and instrumental accompaniment. *Two Dollar Novels; Love Me Like a Soldier; Little Maggie; God's Will; Coldest Winter*; and five others. EPIC BFE 40938, © BET 40938.

Performance: *Make room*  
Recording: *Very good*

Twenty-five-year-old Darden Smith, named after a rodeo star, is the latest of the Texas singer-songwriters to kick up dust around the Nashville music scene. On his debut album, produced by Ray Benson of Asleep at the Wheel, Smith turns his writer's eye toward such predictable topics as the white-collar worker, the neighborhood of his youth, and the aging beauty of *Little Maggie*. But Smith knows how to craft an original phrase—as he proves in *Driving Rain*, about contemplating a leap off the edge



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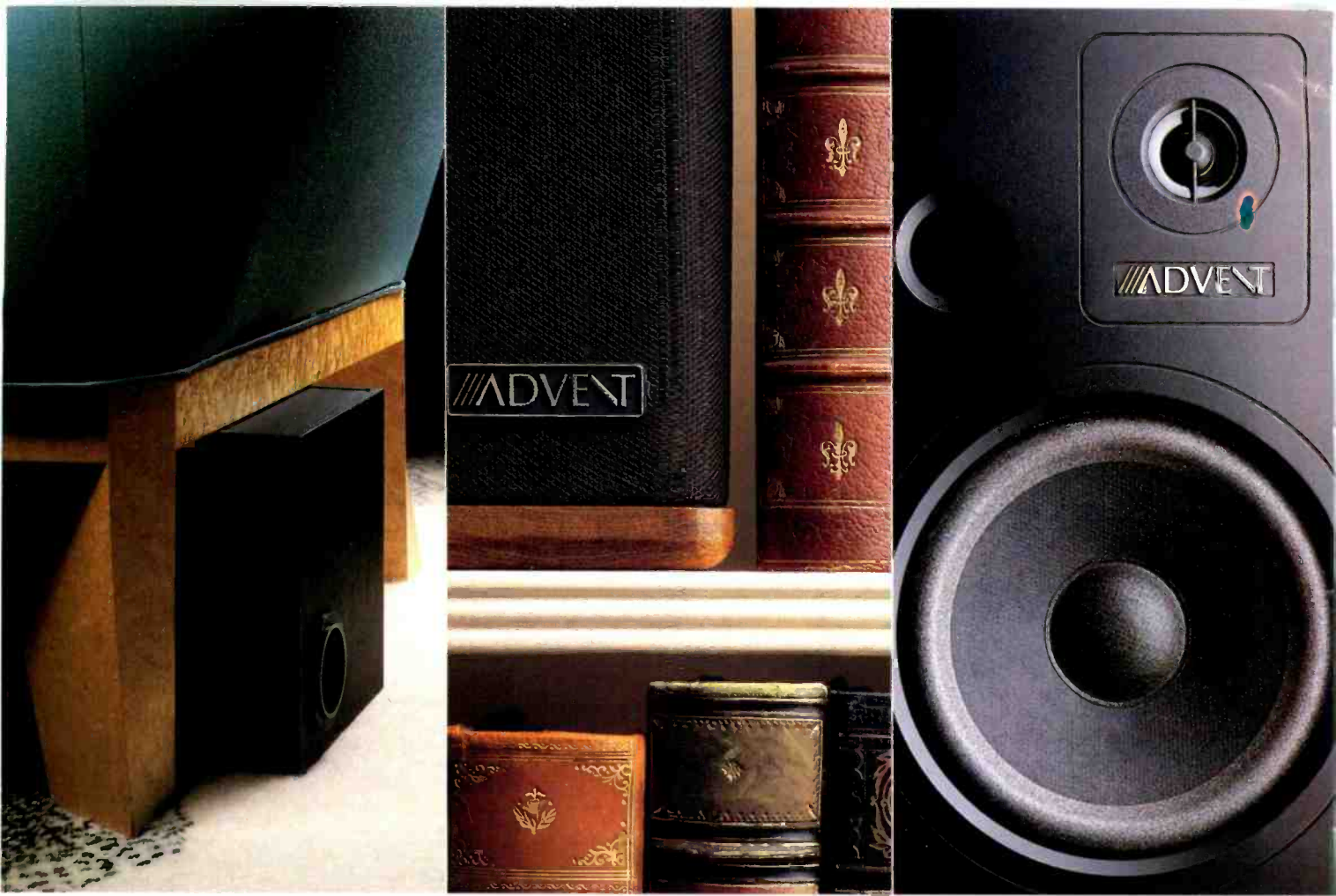
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of the world—and he can hook a good melody. It'll be a while yet before he's in the same league with Lyle Lovett and Nanci Griffith, the fellow Texans who come aboard for background vocals and Lone Star solidarity, but for starters this is a heck of a shot. *A.N.*

**RICK SPRINGFIELD: *Rock of Life*.** Rick Springfield (vocals, guitars, keyboards, sampling, percussion); vocal and instrumental accompaniment. *Rock of Life; Honeymoon in Beirut; One Reason (to Believe); Woman*; and six others. RCA 6620-1-R, © 6620-4-R, © 6620-2-R (45 min).

Performance: *Surprising*  
Recording: *Fine*

Okay, raise your hand if you can read Rick Springfield's name and not think of *General Hospital* and teenage girls. Just as I thought. But "Rock of Life," his first album in three years, seems intended to prove that there's more to him than vulgar, teen-idol teasing, and on a surface level it succeeds. The songs are crammed full of hooks, the production is invitingly layered and ambitious, and the vocals are involving and believable. It is still just pleasant pop, to be sure, but there are songs that approach luminescence: *Honeymoon in Beirut*, with its Steely Dan-like chorus; *Woman*, which boasts arrestingly frank lyric writing; and *Dream in Colour*, with its seductive, gauzy mood. Springfield is good at lust, and he's good at self-destructive romantic angst. Just don't ask him to get profound. *A.N.*

**GEORGE STRAIT: *If You Ain't Lovin' (You Ain't Livin')*.** George Strait (vocals); vocal and instrumental accompaniment. *If You Ain't Lovin' (You Ain't Livin'); Under These Conditions; Baby Blue; Famous Last Words of a Fool; Is It That Time Again; Back to Bein' Me*; and four others. MCA ● MCA-42114, © MCA-42114, © MCA-42114 (28 min).

Performance: *Updated*  
Recording: *Sparkling*

Just as George Strait was getting into a rut the size of all Texas, producer Jimmy Bowen dusted him off, dressed him up in new duds, and pointed him in a slightly different direction. Without sacrificing Strait's Texas allegiance, Bowen has steered him simultaneously toward a harder honky-tonk style and toward a smoother pop sound. Foremost in the first category is Tommy Collins's wonderful title song and *Under These Conditions*, from the unlikely trio of Ronnie McDowell, Troy Seals, and Joe Meador. And on the pop side, Strait delivers *Baby Blue* and the supper-clubby *Don't Mind If I Do* as if he were made for them. There's still enough of the old style to satisfy Strait's old legion, but for those of us who've been waiting for a growth spurt for a while, this one was overdue. *A.N.*



## POSITIVELY BILLY OCEAN

**U**NTIL now, Billy Ocean has been primarily a singles artist. His albums, while pleasant, have never been able to sustain the energy and drive of such songs as *Caribbean Queen* and *When the Going Gets Tough, the Tough Get Going*. But his new one, "Tear Down These Walls," represents a breakthrough. For the first time, Ocean has produced an album with consistently fine material.

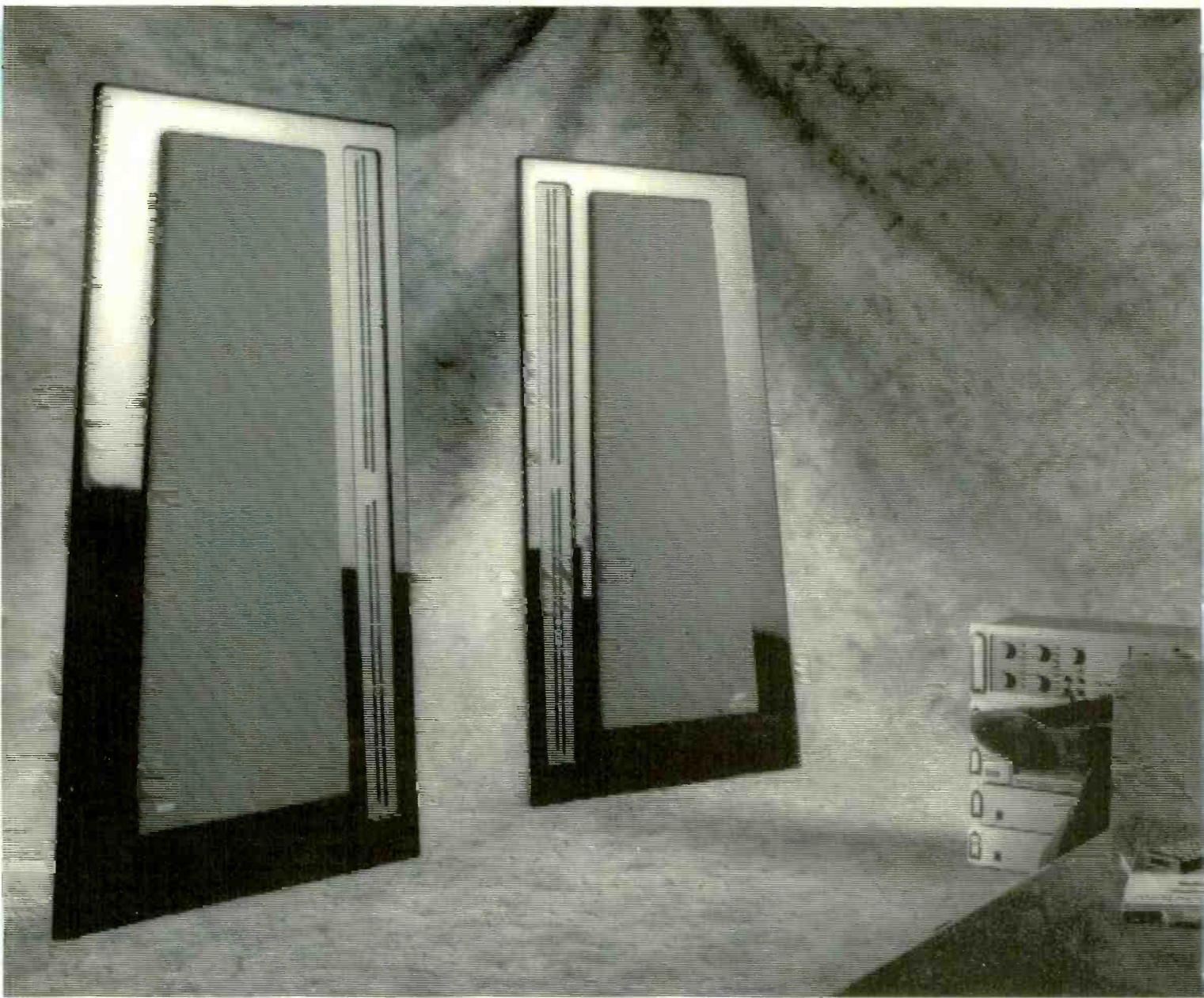
A sense of lightness pervades Ocean's music. That's a reflection of his vocal style and musical tastes, and, naturally, it also has something to do with his Caribbean heritage. But the lightness relates to the positive outlook of his songs as well. As he sings in *Because of You*, "No matter what they say/It's a great world anyway." His high, mellifluous crooning, radiating joy and innocence, undercuts the frank sensuality of some of his lyrics. Billy Ocean's music isn't tailored for dirty dancing.

But who really cares how you dance to *Get Outta My Dreams, Get into My Car*? What matters is that you cannot deny the beat, the melody, the hooks, the bridge. Neither could anyone else,

which is why the song went to No. 1 on *Billboard's* singles chart for two weeks in April. Chart-topping is nothing new for Ocean, but "Tear Down These Walls" has a lot more going for it than one big single. His smooth, synth-driven treatments give us a lilting funk turn on the title track, a classic bit of balladry in *Because of You*, and a syncopated Latin trot in *Pleasure*. For dancing, however, nothing else here compares with *Calypto Crazy*. Ocean sings it with an ecstatic throb, and the instrumental track is a five-minute festival. A native of Trinidad, Ocean loses himself in this music, and he finds in it an intensity that carries over to the rest of an irresistible album. *Ron Givens*

**BILLY OCEAN: *Tear Down These Walls*.** Billy Ocean (vocals); vocal and instrumental accompaniment. *Tear Down These Walls; Gun for Hire; Stand and Deliver; The Colour of Love; Calypso Crazy; Get Outta My Dreams, Get into My Car; Soon as You're Ready; Pleasure; Because of You; Here's to You*. JIVE/ARISTA JL-8495, © JC-8495, © JRCID-8495 (47 min).

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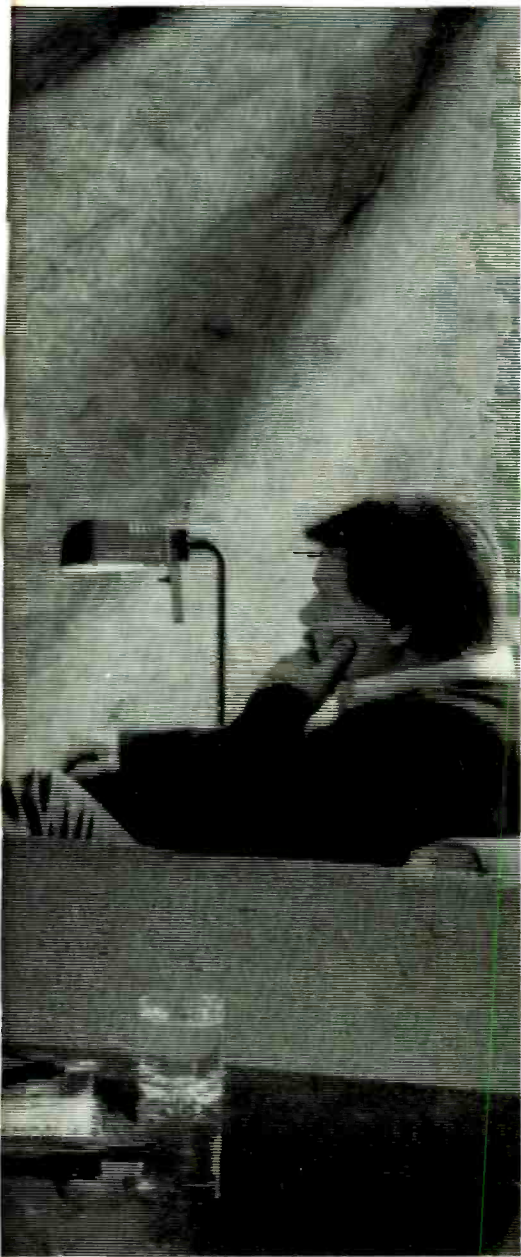
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# JAZZ

**JOHN ABERCROMBIE:** *Getting There*. John Abercrombie (acoustic and electric guitar, synthesizer); Peter Erskine (drums); Marc Johnson (bass); Michael Brecker (tenor saxophone). *Sidekicks; Upon a Time; Getting There; Remember Hymn*; and four others. ECM ● 833 494-1, © 833 494-4, © 833 494-2 (44 min).

Performance: *Expansive*  
Recording: *Very good*

John Abercrombie just keeps getting better. Always a superb technician, this thinking man's guitarist has until now tended toward understated compositions and performances in his solo albums. Even when his improvisations became passionate, they were like a fire that produces much light but little heat. Now, with "Getting There," he has broadened the style of his writing and the emotional quality of his playing.

Abercrombie is accompanied here by a duo with which he regularly tours: drummer Peter Erskine, who has played with Weather Report and Steps Ahead, and bassist Marc Johnson, who leads his own group, Bass Desires. Tenor saxophonist Michael Brecker, who's been known to sit in with this trio during club dates, adds his considerable talents to three tracks. The rapport among these four musicians makes for seamless, winning performances. Erskine drums with exquisite taste and sensitivity, using brushes when the mood is delicate and snapping off brisk snare patterns when things turn urgent. Johnson also exercises just the right restraint; his solo in *Upon a Time* is a superbly modulated run of cleanly articulated notes, each with a deep, round bottom. And Brecker's muscular tenor has a cerebral yet fiery quality that blends cleanly with Abercrombie's own instrumental voice, a voice that has never before shown such range. The opening tune, *Sidekicks*, reveals a harsher, somewhat funky side to his playing that is seldom heard. *Upon a Time* is more typical of the guitarist in its reflective, cerebral beauty, and the combination of bass, cymbals, and synthesized vibes in *Thalia* pushes Abercrombie to incendiary heights. In "Getting There," John Abercrombie definitely gets there, and so do we. R.G.

**DICK HYMAN AND STAN KURTIS:** *Runnin' Ragged*. Stan Kurtis (violin); Dick Hyman (piano). *Wild Dog; Satan's Holiday; Romantic Joe; Cheese and Crackers; Red Velvet*; and seven others. FANFARE/PROJAZZ © PCJ 652, © CDJ 652 (40 min).

Performance: *Charming*  
Recording: *Very good*

Italian-born violinist Joe Venuti grew up in Philadelphia and became one of



John Abercrombie: incendiary

the handful of musicians who gave the violin legitimacy as a jazz instrument. Venuti's most famous collaborator was guitarist Eddie Lang, with whom he recorded a series of remarkable duet and orchestral sides in the Twenties. Although close to ninety at the time of his death in 1978, he was performing up until the end, often with pianist Dick Hyman, who has teamed up with violinist Stan Kurtis to capture the essence of Venuti's early performances. Their collaboration in "Runnin' Ragged" is thoroughly delightful. With Hyman's piano replacing Lang's guitar, the sound is quite different from the original, more like something you'd have heard in a prewar European café, but that also contributes to this set's special charm as a loving tribute. C.A.

**THE JAZZTET:** *Real Time*. Art Farmer (flugelhorn); Benny Golson (tenor saxophone); Curtis Fuller (trombone); Mickey Tucker (piano); Ray Drummond (bass); Marvin "Smitty" Smith (drums). *Whisper Not; Are You Real; Along Came Betty; Sad to Say; Autumn Leaves*. CONTEMPORARY C-14034, © CC-14034, © CCD-14034-2 (49 min).

Performance: *Exhilarating*  
Recording: *Excellent*

It is hard to believe that almost thirty years have passed since Art Farmer and Benny Golson formed the original Jazztet. Consisting of trombonist Curtis Fuller, pianist McCoy Tyner, bassist Addison Farmer, and drummer Dave Bailey, the group was a success with fans and critics in the early Sixties but lasted only three years. "Real Time" marks the Jazztet's return, and it's a wonderful live recording made in 1986 at the New York club Sweet Basil. Pianist Mickey Tucker, bassist Ray Drummond, and drummer Marvin "Smitty" Smith lay down a fine foundation for

Farmer, Golson, and Fuller, who sound better than ever. The Jazztet's style has not changed, yet even after all these years there is a freshness about it. Old fans may become misty-eyed at the familiar sounds of *Whisper Not* and *Along Came Betty*, two performances that are also bound to win the group new fans. C.A.

**BOB MINTZER:** *Spectrum*. Bob Mintzer (tenor saxophone); instrumental accompaniment. *Like a Child; My Romance; Frankie's Tune; I Hear a Rhapsody; Mr. Funk; Cowboys and Indians*; and six others. DMP © CD-461 (65 min).

Performance: *Polished potpourri*  
Recording: *Superb*

To some ears, Bob Mintzer's "Spectrum" will probably sound too slick for comfort, but polish is this session musician's stock in trade, and he has assembled some of New York's most-in-demand studio players for this album. The different sizes of the groups lend a pleasant variety to the overall sound, and the seven big-band arrangements are smooth, functional structures dotted with engaging, if somewhat calculated, solos. Though not a major creative force, Mintzer is a skilled craftsman who knows how to serve up fare of proven digestibility. C.A.

**JOE WILLIAMS:** *Every Night*. Joe Williams (vocals); Norman Simmons (piano); Henry Johnson (guitar); other musicians. *Shake Rattle and Roll; Jimmy's Blues; I Want a Little Girl; Sometimes I'm Happy*; and six others (seven others on CD). VERVE ● 833-236-1, © 833-236-4, © 833-236-2 (51 min).

Performance: *Solid*  
Recording: *Very good remote*

Joe Williams's "Every Night," another in Verve's "Vine Street Live" series, is a wonderful set. Most of the songs, through which Williams and his musicians move at a pleasant clip, will be familiar to his fans, but the set also contains Eubie Blake's rarely heard *A Dollar for a Dime* and Bernard Ighner's equally delightful *Same Ol' Story*. As usual, Williams breathes new life into the old songs, and he is clearly on the same wavelength as the accompanying quartet led by Norman Simmons, a pianist who has been making fine music for close to thirty years without getting the attention he deserves (even here there is no mention of Simmons in the liner notes). Guitarist Henry Johnson also merits a nod for his fine work here. The CD version is made even more attractive through the inclusion of an additional cut, a very mellow reading of *Don't You Know I Care*. Highly recommended. C.A.

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*Discs and tapes reviewed by Robert Ackart, Richard Freed, David Hall, Stoddard Lincoln, and Eric Salzman*

**BACH (arr. Frackenpohl): *The Art of the Fugue (excerpts)*.** Canadian Brass. CBS ● M 44501, © MT 44501, © MK 44501 (57 min).

Performance: *Enlivening*  
Recording: *Handsome*

The Canadian Brass's 1986 recording of Vivaldi's *The Four Seasons* in Arthur Frackenpohl's skillful arrangement proved to be remarkably effective, and now we have the same arranger's still more intriguing brass realization of Bach's valedictory work. In common with the most persuasive settings of the work for various other groups of instruments, this one simply stops where Bach stopped, more or less in the middle of a phrase in the final *Contrapunctus*, and then appends the last piece he actually completed, the chorale prelude "Vor deinen Thron tret' ich hiermit." With or without that piece, *The Art of the Fugue* has for many listeners a certain mystique—a spiritual dimension—that might suggest the brass quintet as an unlikely medium, but Frackenpohl's imaginative arrangement and this group's superb performance prove that it suits the music as well as any other. The fine recording is dedicated to the memory of Glenn Gould, since it was in meetings with the Toronto-born pianist that the members of the Canadian Brass first conceived this project a dozen years ago. R.F.

**BACH: *Brandenburg Concertos: Concerto in A Minor for Flute, Violin, Harpsichord, and Strings (BWV 1044)*.** Musica Antiqua Köln, Reinhard Goebel cond. ARCHIV © 423 116-4 two cassettes, © 423 116-2 two CD's (106 min).

Performance: *Brisk*  
Recording: *Great*

This recording of the *Brandenburg Concertos* is characterized by the brilliance of its sound and the energy and drive of the performances. The exciting thing about the sound is the exceptional instrumental balance; everything can be clearly heard. In the opening movement of the First Concerto, for example, the

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FRESH FAURÉ



Shlomo Mintz and Yefim Bronfman

**T**HE new Deutsche Grammophon recording of Gabriel Fauré's two sonatas for violin and piano, played by Shlomo Mintz and Yefim Bronfman, is one of those things that come along every now and then to defy a reviewer's resourcefulness in finding fresh superlatives. Everything about it is so surpassingly fine that comparisons with other versions of the same music are simply pointless—though in this case the release is especially welcome for filling a void in terms of CD representation of the Second Sonata. That work, which followed its predecessor by more than four decades (it was composed in the middle of World War II, by which time Fauré was seventy-one and partially deaf), has had relatively little exposure even now, while the First has been a repertoire favorite and one of Fauré's best-known compositions in any form. Mintz and Bronfman bring a remarkable sense of freshness and affection to both sonatas, as if each believed deeply that there was no more beautiful music he might be playing and no other partner with whom he would be happier.

Here is exactly what anyone could want in chamber-music performance: a

real feeling of give and take, of the two musicians really playing to each other, responding to each other—each building on the other's last phrase, exuding conviction and passion and spontaneity, and yet in every bar caressing the ear with the most beautiful tone. In the more impassioned passages as well as the more reflective ones, Mintz's sound is burnished gold, and Bronfman manages to be as assertive as full partnership demands without ever overwhelming the violin.

I wasn't so taken by Mintz and Bronfman's earlier DG recording of sonatas by Franck, Debussy, and Ravel, in which there appeared to be a conscious restraint working against their natural impulse, but in the Fauré works they seem to be a dream duo. For its part, DG has come through with a recording to match, outstanding in terms of its realism and its ideal balancing of the two instruments. A real gem.

*Richard Freed*

**FAURÉ: *Violin Sonata No. 1, in A Major, Op. 13; Violin Sonata No. 2, in E Minor, Op. 108*.** Shlomo Mintz (violin); Yefim Bronfman (piano). DEUTSCHE GRAMMOPHON © 423 065-2 (52 min).

CHRISTIAN STEINER/DEUTSCHE GRAMMOPHON



Nicolesco: Bellini with passion

interplay between the horns, oboes, and strings is so clearly defined that the hunting calls, instead of being swallowed up in the complex counterpoint, are a living presence. In the Second Concerto, all of the soloists, including the trumpet and the recorder, are equally well balanced, creating a near-perfect ensemble. And so on with the rest. Never, in fact, either in a live performance or in a recording, have I heard every note in these six scores as I have here. Reinhard Goebel's tempos, moreover, are breathtakingly fast. With the sole exception of the first movement of the Sixth Concerto, which loses poise and breadth at such a fast clip, the results are stunning.

As a bonus, we get the A Minor Triple Concerto, a companion piece to the Fifth *Brandenburg* in that it uses the same instrumentation. But even a similarly energetic performance fails to provide this somewhat dreary work with much excitement. S.L.

**BELLINI: *Beatrice di Tenda*.** Mariana Nicolesco (soprano), Beatrice; Piero Cappuccilli (baritone), Filippo; Stefania Toczyska (mezzo-soprano), Agnese; Vincenzo La Scola (tenor), Orombello; Iorio Zennaro (tenor), Anichino, Rizzardo. Prague Philharmonic Choir; Monte Carlo Orchestra. Alberto Zedda cond. RIZZOLI ● LP-2006 three LP's, © MC-2006 three cassettes, © CD-2006 three CDs (163 min).

Performance: *Unusually exciting*  
Recording: *Clear, good presence*

Although I describe this performance as "unusually exciting," Bellini's rarely

heard *Beatrice* is anything but a "usual" opera. Based on fifteenth-century Milanese history, it calls for singers of great technical facility, stamina, and dramatic flair—artists, in short, of the Callas mold, whose voices, though not necessarily beautiful at every moment, are capable of virtually any musical hurdle and who can, at the same time, convey vivid dramatic conviction.

Rizzoli has come up with such a cast. Mariana Nicolesco, as Beatrice, who is falsely accused of adultery by her husband, sings accurately, fluidly, and with passion, in several passages recalling Callas. Most of what she does is vocally beautiful, and everything she expresses is dramatically convincing. As Beatrice's ill-advised, jealous, philandering, and politically opportunistic husband, Piero Cappuccilli, always an estimable vocal technician, sings powerfully, fearless of the *fiortura* imposed upon him, and with a provocative edge in his voice that lends terror to his performance.

Agnese is a character often found in opera: the woman who is beloved illicitly by the heroine's husband, but is herself in love with a man whose tender passion is for the heroine. Stefania Toczyska sings the role with a warm, full-throated, and flexible voice. Vincenzo La Scola copes manfully and successfully with the rather unkind demands made of him by the composer. As the innocent ham in the sandwich of conflicting and unreasoning passion, he holds his own with commendable aplomb.

The Prague Philharmonic Choir and Monte Carlo Orchestra, like the soloists, respond to the caring attention conductor Alberto Zedda brings to the score. His regard for Bellini's splendid lyricism is never obscured by his concern to make arresting theater of the piece, and he delivers a beautifully integrated performance. R.A.

**BUSONI: *The Major Piano Works*.** Geoffrey Douglas Madge (piano). PHILIPS © 420 740-2 six CD's (383 min).

Performance: *Masterly*  
Recording: *Very good*

Question: What Italian composer, living and working in Germany, used an old Elizabethan song to interpret an eighteenth-century Italian play about a Chinese princess? Answer: The princess is Carlo Gozzi's Turandot, the Elizabethan song is *Greensleeves*, and, of course, you've already guessed that the composer is Ferruccio Busoni. *Turandots Frauengemach*, the fourth of his Elegies for piano, was written in 1909—a decade and a half before Puccini's opera. And it is a wonderful piece of music.

Of all the major musical figures who straddled the turn of the century, Busoni remains the most enigmatic. Debussy, Mahler, Ives, even Schoenberg have come into their own, but Busoni continues to elude us. He was a great

pianist. He was a philosopher. He had tremendous influence through his writings and teachings. He wrote lots of music—especially for piano. He loved to arrange music by other composers, especially Bach. (Bach-Busoni was a popular hyphenated item on recital programs a generation ago.)

Busoni was also an apostle of ultra-modernism who played and arranged Schoenberg's music before World War I and inspired disciples as diverse as Varèse and Weill. After a long apprenticeship as a post-Lisztian Romantic, he blossomed forth with a kind of ferocious Baroque atonality before finally settling down to his own brand of Neoclassicism.

All of these phases are represented in this three-volume set of Busoni's major piano works. The six CD's contain the most important original works of all his periods: the Twenty-four Preludes, the *Racconti fantastici*, and the *Macchiette medioevali* in his full-blown late-Romantic style; the Elegies (his most-performed works) and the Bach fantasies, culminating in the gigantic *Fantasia contrappuntistica* of 1910; and the sonatas and smaller pieces written just before and after World War I in a simpler, clearer, essentially nonvirtuosic style. It is in these relatively little-known later pieces that Busoni found a somewhat consistent voice. It is a quiet one, far removed from the finger-smashing, ear-crunching *Sturm und Drang* that made him famous.

Geoffrey Douglas Madge is an Australian pianist who has lived and worked extensively in England and continental Europe. He reminds me a good deal of John Ogdon, the British pianist who tackled similarly challenging repertoire a while back. These performances have a lot of grit. Madge is a powerful pianist, and the playing here has the feel

Madge: Busoni with grit



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# Stereo Review

of real-time performances, not studio patch jobs. In a few places the sweat and strain are quite audible, but by and large Madge has this sprawling repertoire under his fingers in a most astonishing way. Some of the quieter, subtler pieces could have used a bit more wit and elegance, but otherwise this monumental collection of whopper performances, much like Busoni's music itself, never ceases to amaze, puzzle, confuse, and delight. *E.S.*

**COPLAND: *Sextet for Clarinet, Piano, and Strings; Piano Variations; Piano Quartet.*** Gilbert Kalish (piano); Boston Symphony Chamber Players. NONESUCH ● 79168-1, © 79168-4, © 79168-2 (48 min).

Performance: *Excellent*  
Recording: *Excellent*

It was the difficulty Aaron Copland had in getting his Short Symphony (the one now classified as Symphony No. 2) performed in 1937 that moved him to arrange it for clarinet, piano, and string quartet, and the sextet thus produced has indeed enjoyed somewhat wider circulation than the orchestral work from which it was derived. The Piano Quartet, composed in 1950, is an altogether different kind of work, Copland's first attempt at writing twelve-tone music. The listener, though, is aware only of a very solid, beautiful, and intimately communicative piece. The Piano Variations, a work that antedates both of the others, is one of the classics of twentieth-century keyboard music—eloquent, concise, and powerful. Gilbert Kalish knows exactly how to bring this work to life, and he seems to provide much of the impulse in the two larger works as well. In any event, the entire program comes off very well and is enhanced by the excellent annotation of Michael Steinberg. *R.F.*

**GERSHWIN: *Concerto in F (trans. Castagnetta); Three Preludes; Rhapsody in Blue.*** Norman Krieger (piano). STRADIVARI © SCD 8000 (53 min).

Performance: *Okay*  
Recording: *Good*

**GERSHWIN: *Lady Be Good, Overture; Yan-kee; The World Is Mine; Waltz Medley; Short Story; Till Then; Just Another Rhumba; Wake Up, Brother, and Dance; Primrose Medley; Dance Alone with You; All the Living Long Day; Dawn of a New Day; Girl Crazy, Overture.*** Kevin Cole (piano). FANFARE/PRO ARTE © CDD 365 (49 min).

Performance: *Effective*  
Recording: *Good*

Frankly, I can't see the need or the audience for a Gershwin Concerto in F without orchestra. Grace Castagnetta's transcription for piano solo is listenable enough and, in fact, points up how much of the work is actually carried by the piano, but there are orchestral



*Kalish: Copland with life*

touches that are not adequately replaced—the opening drums and the trumpet and horn in the slow movement, among others. The *Rhapsody in Blue* is quite another matter. It can be, and has been, an effective solo piece, the precedent for such performances having been set by Gershwin himself. Norman Krieger does well by it and by the Three Preludes, and he makes a valiant effort on behalf of the unaccompanied concerto. The sound is very good indeed, but this one, I'd say, is for a rather limited audience.

Kevin Cole's collection of short piano pieces, under the collective heading "Lady Be Good," should have a wider appeal. The thirteen selections, including some virtually unknown songs, piano versions of two overtures, and two medleys arranged by Cole himself, are all first recordings. Cole conveys the style and substance effectively, the recording itself (made by Fanfare in Canada four years ago) is quite good, and there are very comprehensive notes by one of our pre-eminent Gershwin authorities, Edward Jablonski. *R.F.*

**HAYDN: *Symphony No. 103, in E-flat Major ("Drum Roll"); Symphony No. 104, in D Major ("London").*** Concertgebouw Orchestra, Nikolaus Harnoncourt cond. TELDEC/KOCH IMPORT SERVICE ● 6.43752, © 4.43752, © 8.43752 (58 min).

Performance: *Highly theatrical*  
Recording: *Very good*

Those who have heard Nikolaus Harnoncourt's recordings of Mozart from Dresden and Amsterdam over the past two years already know that this pioneer proponent of historically correct performances of seventeenth- and eight-

teenth-century repertoire is now delivering red-blooded, two-fisted readings of Viennese Classical fare with big orchestras made up of modern instruments. The Haydn symphonies in this new Harnoncourt coupling are cases in point. At the very start, in the opening pages of No. 103, instead of the quietly admonitory drum roll from which the score gets its name, we are treated to a full-scale timpani flourish. The same flourish is heard again at the point of the drum-roll reprise toward the close of the first movement. "Authentic" or not, the performance as a whole is intensely dramatic, with maximum emphasis on dynamic and color contrasts, and since this is undoubtedly the most powerful of the late Haydn symphonies, Harnoncourt's interpretive approach works superbly.

His account of the familiar D Major Symphony is for the most part in a more classic vein, the exceptions being a tremendous, emotion-laden outburst at the central climax of the slow movement and a minuet taken at a terribly fast clip, rather like Charles Mackerras in his recent Mozart recordings. The sound packs plenty of wallop too, and it is free from the excess reverberation that sometimes troubles Concertgebouw recordings. All told, provocative and truly bracing Haydn. *D.H.*

**LISZT: *Songs. Three Songs from Schiller's "William Tell"; Three Petrarch Sonnets; Four Poems by Victor Hugo; Four Poems by Heinrich Heine; and five others.*** John Aler (tenor); Daniel Blumenthal (piano). NEWPORT CLASSIC © NC 30028, © NC 60028 (72 min).

Performance: *Ardent*  
Recording: *Clear*

John Aler sings the seventeen songs in this Liszt recital with emotional conviction and a fine sense of style. He possesses a true *tenore leggiero*, a limpid, soaring tenor voice capable of effortless and unusually smooth coloratura singing, and he brings careful attention to detail and a winning sincerity to the performances. Daniel Blumenthal's piano accompaniments are likewise on a highly satisfying level. But the packaging has its shortcomings. Nowhere is there a picture of either of the artists, the notes on them are sketchy, and there are no original-language texts. All that's provided is a set of rather flat English translations. *R.A.*

**MAHLER: *Symphony No. 2, in C Minor ("Resurrection").*** Kiri Te Kanawa (soprano); Marilyn Horne (mezzo-soprano); Tanglewood Festival Chorus; Boston Symphony Orchestra, Seiji Ozawa cond. PHILIPS © 420 824-2 two CD's (80 min).

Performance: *Theatrical*  
Recording: *Good to spectacular*

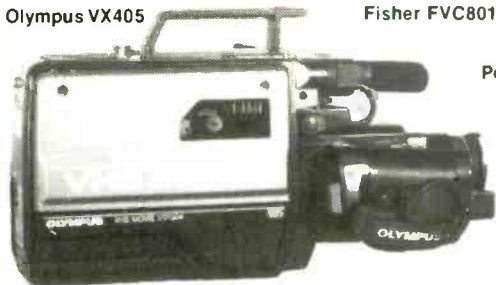
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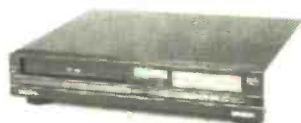
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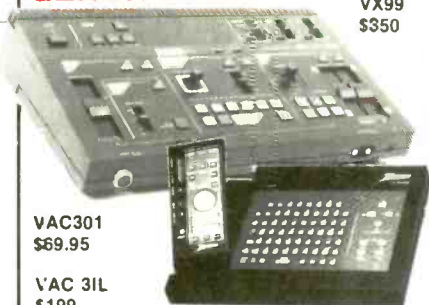
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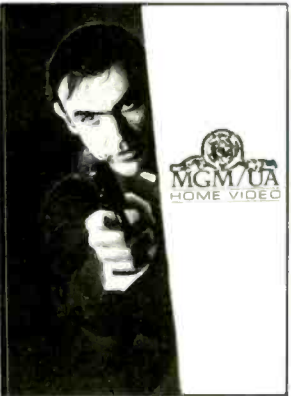


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the cosmic grandeur of Leonard Bernstein's celebrated Ely Cathedral reading or the highly individual, rapt mysticism of Simon Rattle's recent Angel recording. The opening movement here is no somber celebration of death but a straight-out theatrical spectacle—and it is very well carried off within that context. The *Ländler*-like second movement is played with great delicacy, providing a wholly effective element of contrast, but without the feeling of menace that Rattle brings to the central episode. On the other hand, Ozawa has a fine feel for the ironies implicit in the main body of the scherzo, and Marilyn Horne delivers the lovely *Urlicht* solo with fervor.

In the apocalyptic finale Ozawa and his Boston forces come fully into their own. Not only is the performance of this movement superb musically, thanks in large measure to the work of the Tanglewood Festival Chorus, but the recorded sound, in terms of tonal body throughout the entire frequency spectrum, is simply spectacular. Kiri Te Kanawa, moreover, is in lovely voice and teams up in fine fashion with Horne in the finale. *D.H.*

**MENDELSSOHN: Symphonies Nos. 3 and 4** (see Best of the Month, page 82)

**MOZART: Requiem in D Minor (K. 626); Kyrie in D Minor (K. 341).** Barbara Bonney (soprano); Anne Sofie von Otter (contralto); Hans Peter Blochwitz (tenor); Willard White (bass); Monteverdi Choir; English Baroque Soloists, John Eliot Gardiner cond. PHILIPS 420 197-1, © 420 197-4, © 420 197-2 (54 min).

Performance: *Excellent*  
Recording: *Excellent*

**MOZART: Requiem in D Minor (K. 626).** Yvonne Kenny (soprano); Sarah Walker (contralto); William Kendall (tenor); David Wilson-Johnson (bass); Choir of Saint John's College, Cambridge; English Chamber Orchestra, George Guest cond. CHANDOS 8574 (54 min).

Performance: *Excellent*  
Recording: *Fine*

These two recordings of the Mozart Requiem offer excellent examples of two different stylistic approaches to this music. John Eliot Gardiner's represents authentic performance practice with period instruments, George Guest's the English cathedral style. Gardiner, with the English Baroque Soloists and Monteverdi Choir, offers the sound and style that is indeed more appropriate for the music. The colors of the early instruments sharply define the orchestration so that none of Mozart's detail is lost, and the sharp articulations and driving tempos bring the kind of vital strength to the overall musical fabric that is essential to performances of eighteenth-

century works. Add in the fine solo singing and Gardiner's skillful conducting, and you soon realize that this is a performance that's going to be hard to equal. The same virtues are apparent in the accompanying D Minor *Kyrie*, scored for double woodwinds, four horns, two trumpets, and timpani.

George Guest comes close to equaling Gardiner, however, in his recording of the Requiem with the Choir of Saint John's College and the English Chamber Orchestra. Although the modern instruments lack the presence of period ones, Guest uses the articulations of Classical style to great effect, and his overall approach is splendidly vigorous. The glory of this recording, of course, is the sound of an all-male English chorus, but the soloists, too, are first-rate.

Interestingly, both conductors have used the familiar Süssmayr version. Despite its faults, musicians are finally realizing that Mozart's pupil knew a lot more about his teacher's thoughts and style than does many a modern musicologist. *S.L.*

**PROKOFIEV: Symphony No. 5, in B-flat Major, Op. 100.** Leningrad Philharmonic Orchestra, Mariss Jansons cond. CHANDOS/HARMONIA MUNDI USA 8 ABRD 1271, © ABTD 1271, © CHAN 8576 (38 min).

Performance: *Swift and brilliant*  
Recording: *Bright and spacious*

The pacing of the opening movement of Prokofiev's Fifth Symphony sets the tone for any performance as a whole. Taken too deliberately, the movement can become oppressively elegiac. Slatkin on RCA, Previn on Philips, and Ashkenazy on London all set a heroic-lyrical tone without bogging down. At the opposite pole from these and most other recorded performances, Artur Rodzinski and the New York Philharmonic in 1946 offered a swift and highly dynamic view of the score that was equally valid. Mariss Jansons, who has succeeded the late Yevgeny Mravinsky as chief conductor of the Leningrad Philharmonic, chose the Rodzinski route for his new recording, which gives a different slant on Prokofiev's epic score—and one that is also very exciting. The reading is not as profoundly tragic in its view of the first and slow movements as, say, Previn's, but the element of ferocity in the scherzo and finale has hardly ever been better communicated than it is here, thanks both to the incredible virtuosity of the Leningrad players and to the conductor's own dynamism.

The recorded sound from Dublin's National Concert Hall, of a brilliance and spaciousness reminiscent of Boston's Symphony Hall, seems tailor-made for Jansons's linear-dynamic approach. Every strand of musical texture emerges with a finely etched clarity. What a pleasure to hear the important wood-block percussion in the scherzo

and finale set in proper perspective rather than buried in the orchestral hurly-burly.

All told, this is a "different" Prokofiev Fifth but a no less fascinating one. I wish only that Chandos had given us a longer program than a mingly thirty-eight minutes. *D.H.*

**RAVEL: *Boléro; Rapsodie espagnole; Alborada del gracioso; Menuet antique; La Valse.*** French National Orchestra, Eliahu Inbal cond. DENON © 33CO-1797 (57 min).

**RAVEL: *Daphnis et Chloé.*** French National Chorus and Orchestra, Eliahu Inbal cond. DENON © 33CO-1796 (57 min).

Performances: *Disappointing*  
Recordings: *Likewise*

Over the past half-dozen years Eliahu Inbal has shown himself to be an outstanding conductor of Mahler and Bruckner. Moreover, he did some of his training as a conductor in France, and in the early Seventies he made some fine recordings with the Monte Carlo Opera Orchestra for Philips. Given all that, I expected these two Ravel CD's to turn out better than they did. Part of the problem is the recording locale, Radio France's Studio 104 in Paris, which does not strike me as very accommodating to Ravel's colorful orchestral texture, which needs an acoustic that is both warm and bright. The sonic surround for these recordings is on the dry side—good perhaps for *Le Tombeau de Couperin* but hardly ideal for *Boléro*, *Alborada del gracioso*, or the *Rapsodie espagnole*, not to mention *Daphnis et Chloé*.

The performances themselves are decent enough but lack urgency and sparkle, the *Danse générale* at the end of *Daphnis et Chloé* being a particularly glaring example. Inbal brings something of a Viennese lilt to *La Valse*, but the relentless build-up in tension that should culminate in the final catastrophe is just not there. *D.H.*

**SCHUBERT: *Piano Sonatas: C Minor, D. 958; A Major, D. 959; B-flat Major, D. 960. Allegretto in C Minor, D. 915; Three Piano Pieces, D. 946*** (see Best of the Month, page 80)

**VAUGHAN WILLIAMS: *Symphony No. 5, in D Major; The Lark Ascending.*** Michael Davis (violin); London Symphony Orchestra, Bryden Thomson cond. CHANDOS/HARMONIA MUNDI USA © ABTD 1260, © CHAN 8554 (54 min).

Performance: *Forthright*  
Recording: *Bright and clear*

The Fifth Symphony of Vaughan Williams stands between the furies of his Fourth, from 1935, and his apocalyptic postwar Sixth. But even though the Fifth was completed in 1943, as Britain

was undergoing the severest trials of World War II, the music, like the opera *The Pilgrim's Progress*, from which it derives much of its thematic material, evokes eternal verities transcending immediate human concerns. There is only one movement in fast tempo, the second, a scherzo marked *Presto misterioso*. A wind-swept affair of less than five minutes' duration, its performance in this recording makes one understand why the composer dedicated the symphony "To Jean Sibelius, without permission." The ruminative opening *Prelude* and swift scherzo give way to a *Romanza* that contains the most hauntingly beautiful of all Vaughan Williams's meditative essays. The finale is a celebratory passacaglia.

Most recordings and concert performances I have heard of this work have tended to stress its otherworldly aspect. I find Bryden Thomson's more forthright and rugged approach equally valid for the different light it sheds on the score as a whole, and the bright church acoustic lends added impact.

The idyllic Romance for Violin and Orchestra, *The Lark Ascending*, gets a lovely performance here, with Michael Davis's solo violin and the solo flute in the central orchestral episode placed in a natural, unexaggerated perspective. I can recommend this release wholeheartedly. *D.H.*

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**MICHAEL MURRAY: *The Organ at the Cathedral of St. John the Divine.*** Dunstable: *Agincourt Hymn.* Soler (arr. Biggs): *The Emperor's Fanfare.* B. Marcello: *Psalm 19.* Purcell: *Trumpet Tune.* Widor: *Symphony No. 6, Op. 42, Finale.* Bach: *Prelude and Fugue in E Minor (BWV 533, "Cathedral").* Vienne: *Meditation; Prelude.* Franck: *Chorale No. 2, in B Minor.* Dupré: *Cortège and Litany, Op. 19, No. 2; Seven Pieces, Op. 27, Final.* Michael Murray (organ). TELARC © CD-80169 (60 min).

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

In what the late Irving Kolodin long ago termed "The Age of Complete," which began in the early years of the LP disc, most record collectors have become accustomed to more homogeneous programs than this one—all-Bach, all-Franck (or at least all-French), etc. Those who find variety no less attractive, however, and devotees of the organ who are perhaps as intrigued by the instrument itself as by its repertoire, should enjoy hearing the big organ at the Cathedral of St. John the Divine in New York City put through its paces. There are some dazzling moments in this hour's worth of music, and all of it suits Michael Murray down to the ground. Telarc's recording team has provided just enough presence to add warmth to the brilliance without any muddying of the textures. *R.F.*

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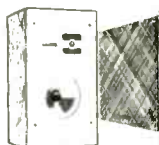


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by William Livingstone

**R**EGARDLESS of the rise and fall of the dollar, music has long been a major cultural export from the United States to the rest of the world. In recent decades the American whose music is heard by the most people at home and abroad is probably not George Gershwin, Cole Porter, Michael Jackson, or Bruce Springsteen, but the film composer John Williams.

Three pictures that are among the most successful movies in cinema history—*Jaws*, *Star Wars*, and *E.T.*—have scores by Williams. And in this year's Academy Awards in April, he was nominated twice, for his scores for *The Witches of Eastwick* and for *Empire of the Sun*. In addition to his film work, Williams is the conductor of the Boston Pops, widely recognized as the world's best-known orchestra.

"We do our parochial thing here in Boston," Williams says, "but the Pops is not just a local institution. Through our tours and TV broadcasts we reach a large constituency all across the country, and through our Philips records we have a huge constituency around the world. The Pops attracts a lot of younger people and leads audiences to a better understanding of music and the need for a symphony orchestra in contemporary life. I think that's important."

Before the space movies for which he is best known, Williams composed soundtrack music for a variety of comedies and disaster films (such as *Towering Inferno*). Of *Star Wars*, which was released in 1977, he says: "I have no pretensions about that score, which I wrote for what I thought was a children's movie. All of us who worked on it thought it would be a great Saturday-morning show. None of us had any idea that it was going to become a great world success."

Last year on the tenth anniversary of the release of *Star Wars* it was revealed that the trilogy made up of that picture and its sequels, *The Empire Strikes Back* and *The Return of the Jedi*, had brought in more than \$1.2 billion in ticket sales and an additional \$1.5 billion in sales of books, posters, toys, T-shirts, and galactic paraphernalia. Some of the creators of the trilogy had difficulty dealing with success of such magnitude. The director George Lucas, for example, has spoken of its disruptive effect on his personal life.

Although Williams is grateful for the financial rewards and for professional recognition in the form of Oscars and Grammy Awards, he takes a rather cool view of success. "Film music can be very lucrative," he says, "but it's very capricious. You can make tremendous



## JOHN WILLIAMS

*Success has made Williams a very rich man, but instead of sitting back and clipping coupons, he prefers "to be out where the magic dust is being put together."*

amounts of money if you have a successful film, but you may have to work thirty years to achieve that. There's a great deal of luck involved. In my thirty years in Hollywood I've had a mixture of good luck and not such good luck, a full bag of ups and downs."

Perhaps if Williams has had no visible difficulties in handling success, it is because of the way he has managed his career and set new goals for himself. In 1980, when he was forty-eight and at the peak of his profession as a composer, he accepted the artistic challenge of succeeding the legendary Arthur Fiedler, who had conducted the Boston Pops for fifty years. That year STEREO REVIEW interviewed Williams when he was making "Pops in Space," his first album with his new orchestra, his first on the Philips label, and Philips's first digital recording.

"I have only a two-year contract with the Pops," he said. "My relationship with the orchestra will last as long as I am happy here and as long as Boston is happy with me." He is now in his ninth season, and Boston is clearly still happy with him. After some fifteen additional Philips albums, I interviewed Williams

at a more recent recording session. "Nothing has changed," he said. "I still have a short-term contract, and that's best for me. It's not easy to give an unqualified answer, but I can truthfully say I'm happy with it."

He was recording Peter Maxwell Davies's *An Orkney Wedding, with Sunrise*, a piece commissioned for the celebration of the one-hundredth anniversary of the Pops in 1985. The composition, which calls for a bagpipe solo, might be described as synthetic folk music. "It's wonderful," says Williams. "It's a theater piece, a musical piece, and we've had conspicuous success with it." Williams has conducted the Pops in *An Orkney Wedding, with Sunrise* not only in Boston, but also at Carnegie Hall in May. The recording has not yet been scheduled for release.

Williams's recordings with the Pops include a wide range of repertoire, such as big-band music in "Swing, Swing, Swing" (Philips 412 626), favorite romantic melodies in "Pops in Love" (416 361), and music from movies and TV shows about outer space in "Out of This World" (411 185). Since he has written so much music for space films himself, it is fitting that Williams has conducted the Pops in Holst's *The Planets* (Philips 420 177), the composition that set the style for most of the subsequent musical descriptions of outer space and other worlds.

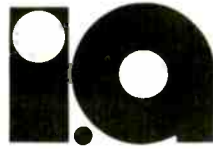
Success has made Williams a very rich man, but instead of sitting back and clipping coupons, he prefers "to be out where the magic dust is being put together." He says what keeps him going is the challenge to make his work better, "to make ourselves better, to give the audience more, to have the orchestra feel more commitment and hence more reward."

He takes very seriously the responsibility that comes with the Pops' position in American life. He believes the arts have an uplifting function and that we must give them high priority to insure the quality of our lives. "I'm convinced that we are spiritually nourished by good music, not just Bach, but good music of other kinds. I think that's relevant. We have to take time to read Thackeray's novels and Macaulay's *History of England* for its gorgeous syntactic stuff and beautiful language. Clear thinking and good articulation are impossible without cultivation of that kind. And we have to make time to listen to the music of Mozart.

"The whole idea of quality in life and work is what we think about when we go on stage for a recital or an orchestral concert. Will it be good enough? That keeps me going, and that challenge is the key to my obsession with what I am doing in my work." □



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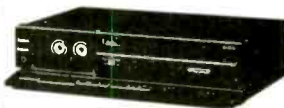
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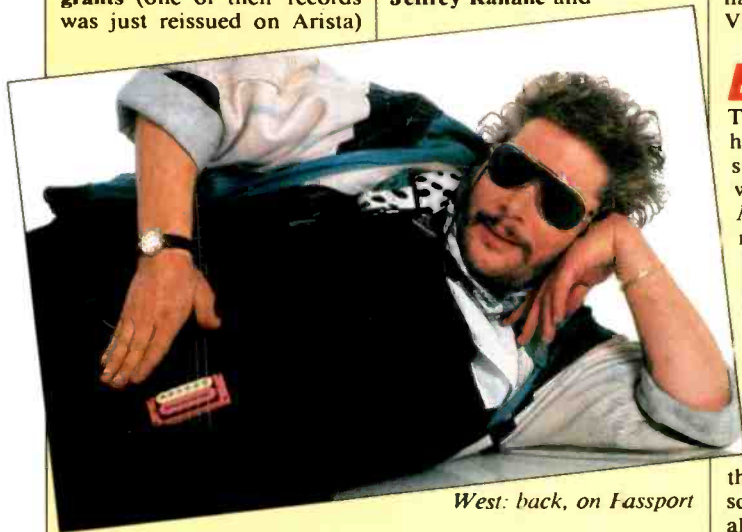
**R**ETURN of the Incredible Bulk! Leslie West, lead guitarist for the legendary Vagrants (one of their records was just reissued on Arista)

In the past eight years Swensen has played with major European and American orchestras and in chamber concerts with many well-established artists. This summer he will perform in Cambridge with pianist Jeffrey Kahane and

vin, along with the first of two albums he's made with Kahane containing all of Schubert's music for violin and piano. Future projects include the Shostakovich Violin Concerto and (with Galway) Beethoven's Sere-nade for Flute, Violin, and Viola.

the best-seller charts. At press time it had broken into the top twenty.

**O**UR pick to click as the summer's crossover album: "Sky—the Mozart Album," featuring the British rock group Sky making its



*West: back, on Fassport*

and for the Woodstock-era fave Mountain, is back with a brand-new album, "Theme," on Passport. Along for the ride is none other than Cream's Jack Bruce, who for the first time on record gets to sing his own *Theme from an Imaginary Western*, memorably covered by Mountain way back when. While we are, of course, pleased that West, the man who once billed himself as the Great Fatsby, is back in action, we are also pleased to find his sense of humor intact. "Rock and roll," he told us, "is like high school with paychecks." Pressed for his views on the current music scene, he remarked, "I don't know, but Eric Clapton's Budweiser commercial is the best thing *he's* done in years." □

in New York City's Mostly Mozart Festival with flutist James Galway.

Scheduled for release in October is Swensen's recording of the Beethoven Violin Concerto with the Royal Philharmonic under André Pre-

**B**EST known to record collectors for his work with Talking Heads, David Byrne has also developed quite a successful career in films. He won rave reviews for *Stop Making Sense*, a concert movie with the Talking Heads, and in 1986 he was director, co-writer, and on-screen star in *True Stories*. This year he won his first Academy Award for the soundtrack to *The Last Emperor*, which he composed with Ryuichi Sakamoto and Cong Su. It won the Oscar for best original score. The soundtrack was also named best original score in the Golden Globe Awards and best musical score by the Los Angeles Film Critics Association.

Byrne is still busy on records, and his latest album with Talking Heads, "Naked" on Sire, is rapidly climbing



*Canonici and Hendricks*

debut on Philips Classics. A group that once included guitarist John Williams, Sky still plays to the beat of drummer Tristan Fry, who is also the percussionist with Neville Marriner's Academy of St. Martin-in-the-Fields. The new album, of popular snippets from the works of Wolfgang Amadeus, represents a collaboration between Sky's four rockers and the Academy, both under Marriner's direction. □

*Swensen: exclusively on RCA Victor Red Seal*



**U**NDER the new ownership of Germany's Bertelsmann Music Group, BMG Classics (RCA Victor Red Seal) is beefing up its roster of young classical artists, such as the Irish pianist Barry Douglas and the Danish recorder virtuoso Michala Petri. The latest to be signed to an exclusive RCA Victor Red Seal contract is the American violinist Joseph Swensen.

**O**N July 11, PBS begins the third season of American Masters, a series that documents the lives and achievements of prominent figures in the creative arts. Included in the series is "Fifty Years of Music with John Hammond," recollections of some of the artists Hammond recorded, such as Bruce Springsteen, Alberta Hunter, Count Basie, Bob Dylan, and Aretha Franklin.

Other programs in the series will be devoted to Duke Ellington and to Woody Guthrie and Leadbelly. In the latter, Guthrie's songs will be performed by such artists as Springsteen, Willie Nelson, and U2. Produced by WNET/New York, the series will air Mondays at 9:00 p.m. Eastern time on most PBS stations. □

**R**EADY to light up the screens in America's movie houses this fall is a new film version of Puccini's

LARRY DIMARZIO/PASSPORT RECORDS

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*La Bohème*, starring **Barbara Hendricks** as Mimi and **Luca Canonici** as Rodolfo. It's the first film and the first Mimi for Hendricks, a popular American soprano who has been singing on the international circuit for a dozen years. It's also Canonici's first film and his first Rodolfo, but what's remarkable about *his* motion-picture debut is that he will be seen but not heard.

Featured with Hendricks on the *Bohème* soundtrack, just released by RCA, is the popular Spanish tenor **José Carreras**, who took part in the Erato recording sessions in Paris a year ago. When the time came later to shoot the film, however, Carreras had fallen gravely ill, and someone—preferably a tenor with matinee-idol looks—had to be found, fast, to lip-sync over the track he had laid down.

That lucky someone was Canonici. According to Daniel Toscan du Plantier, president of Erato and co-producer of the *La Bohème* film, Canonici is "a great new voice." To prove that point, Erato has just released a solo album (available on RCA in the U.S.) in which the twenty-nine-year-old Italian tenor sings arias by Puccini, Verdi, Donizetti, Bellini, Cilèa, and Adam. □

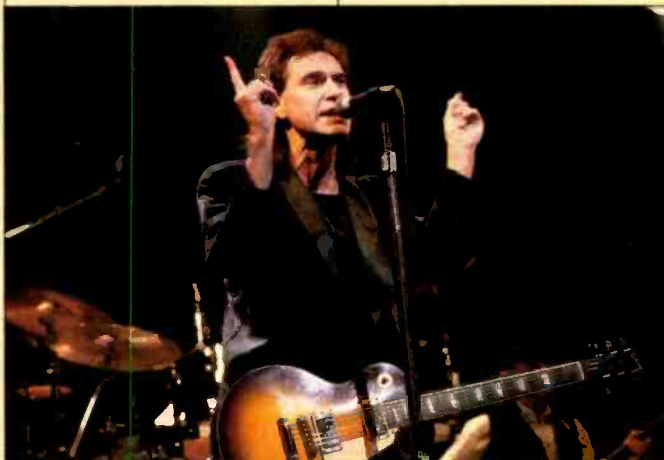
"**W**HAT is so rare as a Kink in tune?" some wag once observed about Ray Davies and his colleagues in the Kinks, and we are sorry to report that they are going to be extremely rare from now on. The band's American

*Litton: on Virgin*



STEVE SHERMAN/JAY K. HOFFMAN

tour, just ended, will apparently be the last hurrah for the venerable British rockers. Of course, Davies has retired before, and given the precedent set by (among others) Frank Sinatra, David



*Davies: in again, out again, here again ...*

Bowie, and Elton John, he may well tread the boards again someday. In any event, the self-proclaimed possessor of the finest tush in show business, and one of the great rock songwriters, Davies won't be out of the public eye for long. He is currently working up a musical version of *Around the World in Eighty Days*, which may actually open on Broadway next year. Meanwhile, inconsolable Kinks fans can make do with the group's most recent album, "The Road" (MCA). □

**H**AVING established itself in England and the United States as a hot label for rock and New Age music, Virgin Records has now launched a classical line. The first release on Virgin Classics includes eleven titles, ranging from music of the sixteenth and seventeenth centuries written for a consort of viols to works by such twentieth-century British composers as **Benjamin Britten** and **Michael Tippett**.

The artists in Virgin Classics' first release are also mostly English, with the notable exception of **Andrew Litton**, who was born and educated in New York City. Litton conducts the Royal Phil-

harmonic in performances of Mahler's First Symphony and *Songs of a Wayfarer*, with soprano **Ann Murray** as soloist.

The other prominent American is tenor **Robert**

**White**, who sings a program of Irish ballads collected by the late Princess Grace of Monaco. He's accompanied, in fact, by the Monte Carlo Philharmonic under **Robin Stapleton**. □

**F**ROM our You Gotta Have Art Department: Those despairing of finding anything new or innovative

mini-movie (thirty-four minutes, hi-fi stereo) is a deliberately hallucinatory tour of the lower-Manhattan demimonde. While we haven't a clue as to what it all means, it's certainly, well, different. Think of it, perhaps, as *The Garbage Pail Kids Go to SoHo*. Longo, meanwhile, has just directed the first video for **Vernon Reid** and his band, **Living Colour**, whose debut album, "Vivid," has just been released by Epic. □

**G**RACENOTES. The neatest cameo of the year: **Timbuk 3**, whose new album, "Eden Alley," is just out on IRS, as the bar band in the Dennis Quaid thriller *D.O.A.*

Home video of the month: *Hell Comes to Frogtown* (New World), which is not, as you might suppose, about former **Television** bassist **Richard Hell** on a trip to Paris. Instead, the pic is a post-nuke apocalypse adventure with giant mutant frogs driving Jeeps around the desert while various punk bands are heard on the soundtrack. We are not making this up. . . . Attention, animal-rights activists: **Rotund** rappers the **Fat Boys**, filming a video for their remake of *The Twist*, recently auditioned hundreds of pets for a dance



*Longo (above) filming Stipe (right)*

in rock video may find their interest piqued by **Arena Brains** (Elektra), a new long-form effort directed by big-time New York artist **Robert Longo**. Starring **REM** lead singer **Michael Stipe** and featuring music by **Public Image Ltd.**, among others, the

sequence. At press time, the leading contender was said to be an underage duck. . . . Consumer inducement of the month: **Joe Jackson's** new "Live in Tokyo" video includes a three-inch CD of songs that are not included on the tape. □

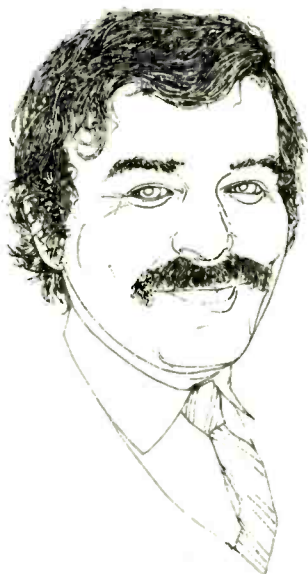
JACQUES SARRAT/ERATO DISQUES

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## THE HIGH END

by *Ralph Hodges*



### *Sony Seminars*

FOR some years now it has been the practice of Sony of Japan, in cooperation with Sony of America and other foreign subsidiaries, to host regular technical seminars for the press, detailing whatever new technological wrinkles the company is about to spring and even taking a peek or two into the further future. These meetings may go on for a day, or for the best part of a week, and they feature real, live Tokyo-based engineers, grappling manfully with the English language. The locales are chosen thoughtfully, and they are sometimes exotic, although the rigor of the proceedings may keep you from noticing. Once, in Japan, we were told, "Now you are going to work as hard as the Japanese." If we didn't, it wasn't for lack of being driven twelve hours a day.

The seminar just past was held in Terre Haute, Indiana (exotic locales, remember), at Sony's subsidiary Digital Audio Disc Corporation, the largest CD supplier in the U.S. and proud possessor of a pilot production line for prerecorded DAT's. The principal theme was, of course, digital audio, and Sony once again hinted at its determination to produce a digital chain that is com-

plete straight through to the loudspeaker ("hinted" meaning that, except for a new and impressive prototype of a digital preamplifier, there were no further details available). Much of the real substance of the conference, however, involved analog concerns and reflected some decidedly offbeat thinking, even for a company that is obsessed with innovation.

Although Sony has not ordinarily shown much interest in things like interconnect cables, and is known for packaging some of the most limp-wristed patch cords in the business with its components, its engineers have become true zealots in matters of connector jacks and chassis shielding and construction. The latest additions to the ES line, Sony's premier equipment for the high-end market, are festooned with gold-plated jacks, have aluminum chassis panels with copper plating on both sides, often have thick base slabs made of a synthetic molded compound said to be similar to marble, and have ceramic feet with "non-elastic" rubber buffers. For electromechanical devices such as CD players, double-wall chassis construction is the rule, and the oversize power transformers, kept separate for digital and analog sections in the deluxe models, are floated on resilient shock absorbers.

What Sony seems to be saying to the high end is that isolation from the outside world, and isolation from inside elements that may be incompatible housemates, is the essence of audio improvability. It is especially important that anything that vibrates, like motors and power transformers, be insensible to analog circuitry. To get an idea of how seriously Sony takes vibration, or resonance, it's interesting to examine a white paper distributed at the seminar, dealing principally with electronic and mechanical elements developed by Sony and used in its new two-chassis CDP-R1/DAS-R1 CD player system.

An early section describes an "audio-grade" resistor architecture employing "a carbon-film resistance element with a gold-plated cap, molded inside a hard resin compound." The next paragraph begins, "Since there is an electrical connec-

tion point between the cap and the resistance film, it is highly sensitive to resonance. However, the resin molding works to reduce the entry of resonance to this point." Likewise, when we get to coupling capacitors, we learn that the element is "sealed up in a resin-filled square casing as a countermeasure against resonance." The separate analog and digital power transformers get the same treatment.

*Sony's engineers have become true zealots in matters of connector jacks and chassis shielding and construction in the ES line of equipment.*

Then come the electrolytic capacitors for the power supplies: "The resonance generated by these capacitors mounted on the circuit boards presents a problem in terms of sound quality. As a countermeasure, large electrolytic capacitors are mounted on foam-rubber bushings in order to damp out resonance. The result is stabilized low-frequency sound reproduction for stronger, more well-defined bass."

Fascinating, isn't it?

Please don't think I am exaggerating the emphasis placed upon vibration effects in Sony's current design philosophy. It appears to be a central issue in the mind of a certain Mr. Teruhisa Ide, who has been at the cutting edge of Sony's advanced technology for some time now and has several astounding products on his résumé. Those of us old enough to have lived with vacuum tubes when they were the only option remember microphonics, but many of us thought they died with transistors, unless there was a cold solder joint in the works. Perhaps not. Mr. Ide has lots of nice graphs and numbers to back up his argument.

Still, it's amusing to contemplate that the company that put high-fidelity electronics on the hips of joggers, swimmers, and hang-gliders is now urging us to keep them absolutely motionless. But that's what's fun about the Sony seminars. You'll always hear something that will surprise you. □

# Marlboro Lights

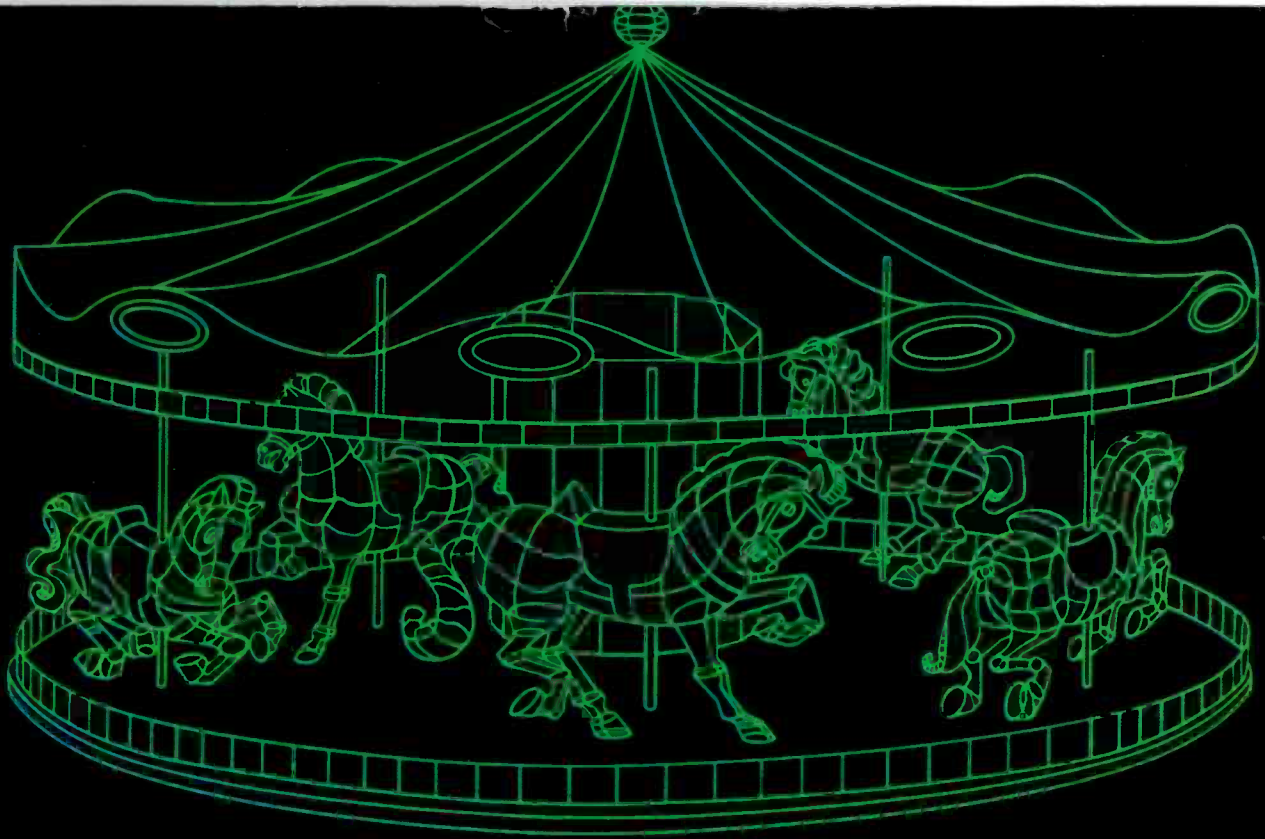


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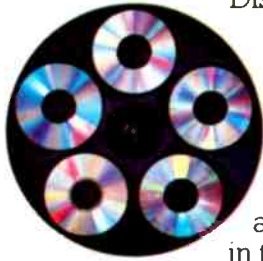
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