

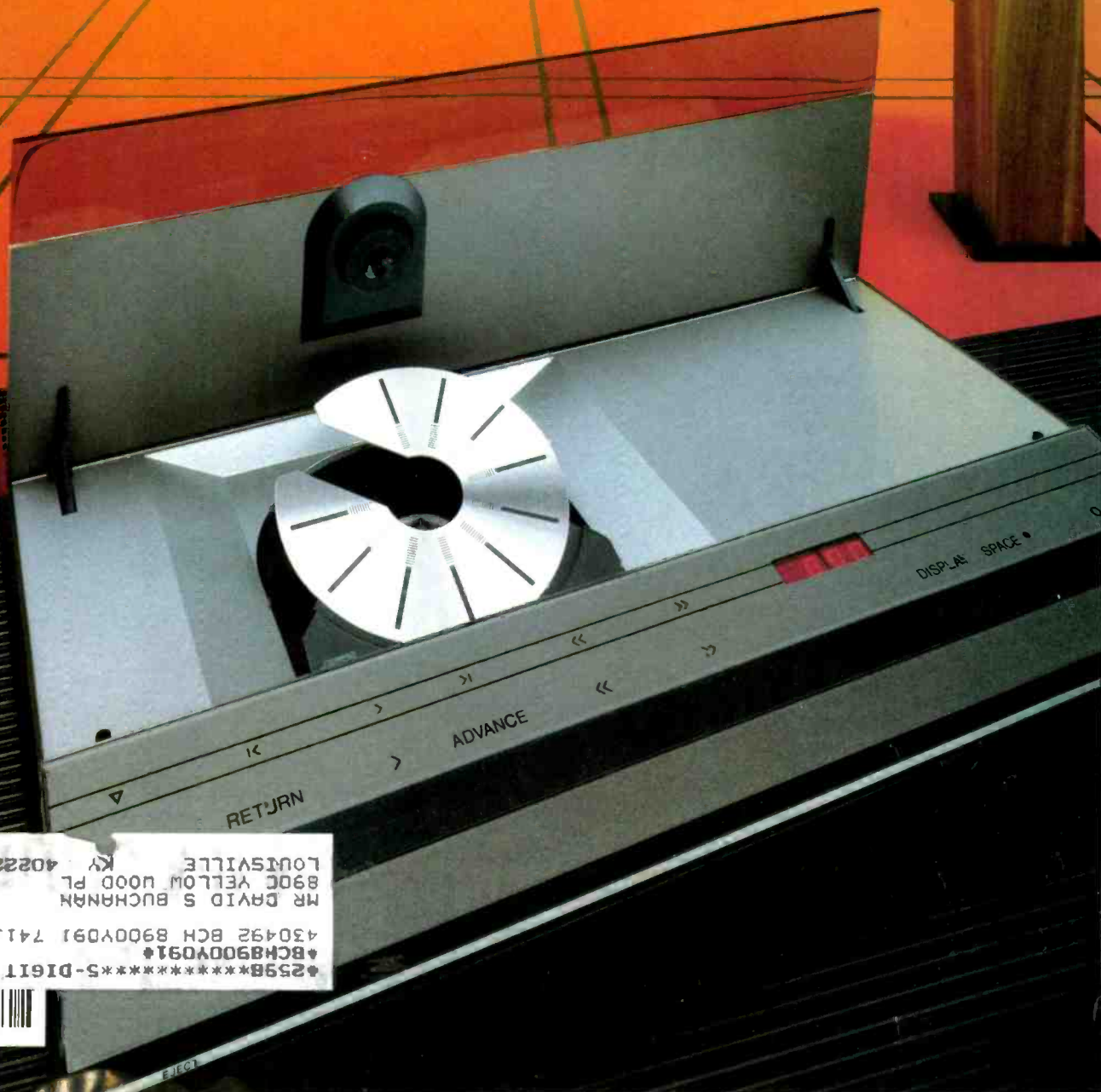
Stereo Review

AUGUST 1988 ● \$2.25

**EUROPEAN AUDIO:
TRADITION AND INNOVATION**

DIGITAL SOUND PROCESSORS

**LAB TESTS: AKAI CD PLAYER,
MARANTZ INTEGRATED AMP,
AXIOM SPEAKER, AND MORE**



MR DAVID S BUCHANAN
890C YELLOW WOOD PL
LOUISVILLE KY 40222

430492 BCH 8900Y091 741J JAN90
BCH8900Y091
*2598*****S-DIGIT 40222

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The power of music
driven to Infinity



The road demands the very most from music.

Nowhere else but in the mobile environment does music have to compete against wind, engine rumble and street noise.

So building autosound components that can deliver the full emotional punch, the musical power of a live performance despite these obstacles is a monumental undertaking.

But we at Infinity love a challenge.

A challenge that has led to a full series of technologically and musically advanced autosound components, each enabling you to finally realize the full sonic power of your music as was never before possible in a car.

(What else would you expect from a group of music-obsessed ex-aerospace physicists driven to build what critics hail as the best-sounding loudspeaker system ever made: the 7½ foot tall, \$45,000 Infinity Reference Standard V?)

Here, for the very highest-performance autosound installations, is the Reference Standard Designer Series—a breakthrough of automotive transducer technology, with com-



Reference Standard Designer Series

ponent drivers adapted directly from our remarkable IRS and Kappa Home Series.

Allowing an even wider choice of applications is the Kappa Automotive Series of integrated and component speakers, similarly designed to satisfy the critical ears of the serious—even fanatic—lover of music.

Because space in some cars comes at a very high premium, we designed the Reference Standard Plate System, featuring Infinity's exclusive



Kappa Automotive Series

IMG (Injection-Molded Graphite) cone woofer and revolutionary EMIT *k* tweeter.

And to drive the world's best automotive speakers, we created four muscular new power amps well deserving of the name Reference Standard Amplifier Series.

So now, if you want to experience the pure, pulse-pounding power of music in your car, whether in the stand-back snap of a Fender bass or the rising fury of a symphony orchestra, you know just what it takes.

Infinity.

Components by and for people who drive autosound performance to extremes.

Reference Standard Plate System



Reference Standard Amplifier Series



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



Bring the Dramatic Sound Of a Live Performance to Any Room With a Realistic® Equalizer

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.

The Stereo Expander alters the apparent location of sound. Normally, what you hear is concentrated between the two speakers. The expander creates the sensation that sound is coming from beyond your speakers for a truly thrilling audio experience.

Furniture, carpet, room size and shape affect frequency response. But with 24 narrowband controls to adjust audio response up to 12 dB from 31-16,000 Hz, you can practically eliminate acoustical problems from any room. And, you can boost or cut exact

frequencies of your choice to customize the sound to personal taste.

With the built-in tape control center, it's easy to make and monitor custom-equalized recordings without rerouting patchcords.

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.

*TM Sci-coustics, Inc. Price applies at participating Radio Shack stores and dealers.
*Radio Shack revolving credit. Actual payment may vary depending upon your account balance.

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Cover: *The Beogram CD 3300 compact disc player from Denmark's Bang & Olufsen and, in the background, the CM2 mini-tower three-way monitor system from England's B&W Loudspeakers.*
 Design by Sue Llewellyn, photo by Roberto Brosan.

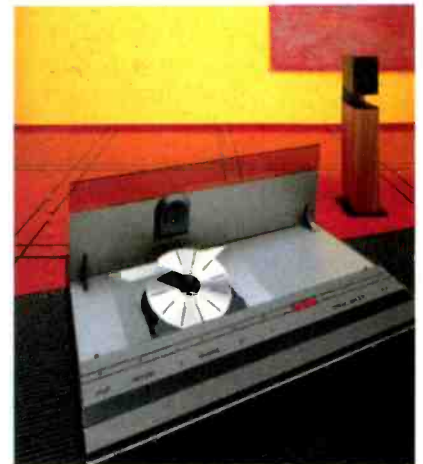
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 Please fill in if you bought equipment in the past thirty days.
 READER SERVICE INFORMATION CARD, FACING PAGE 89
 Circle the items you want to know about.



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LIFE IS FULL OF COMPROMISES, BUT YOU DON'T HAVE TO LISTEN TO THEM.

And that's just what you do with most compact disc players. You end up listening to the machine and not the music.

That's why Marantz designed the uncompromising CD-94.

The elastomer suspended aluminum transport and tracking system, along with the die cast non-magnetic main chassis, eliminate acoustic feedback.

A radial tracking, single beam laser reads the disc and eliminates the inaccuracies inherent in more conventional systems.

A 16 bit dual digital to analog converter and quadruple oversampling

digital filter guarantee perfect frequency and phase response within the compact disc's bandwidth.

The musical information is then fed through a high quality analog stage that utilizes ceramic damped capacitors and custom components linked by oxygen free copper wire.

All this to ensure that the soundstage accurately preserves the depth, presence and purity of the original performance.

The Marantz CD-94 fully programmable compact disc player. Expensive. But to the audio purist, compromise is just too high a price to pay.



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Phone: 818-998-9333 Fax: 818-998-5475

For more technical information, call or write Marantz for the brochure, "The 94 Series, A Technical Narrative."

CIRCLE NO. 53 ON READER SERVICE CARD

by Christie Barter
and Michael Smolen

HOME ELECTRONICS FUTURES

The Summer Consumer Electronics Show, which takes place in Chicago every year, usually offers tantalizing glimpses of things to come for the audio enthusiast. At this year's SCES major discernible trends included increased development of digital technology, greater evidence of the success of the marriage of audio and video, wider application of surround-sound techniques, tantalizing interaction between home audio systems and home computers, proliferation of multiroom systems, and the application of remote controls and automation to realize the goal of a "smart house."

Notable products that illustrated some of these trends included the Technics SA-R530, an audio/video receiver with digital Dolby Surround processing and a remote control with learning capability. The Revox B203/205 control system can be linked to your personal computer to increase the smarts of your audio installation. Panasonic's PV-4826 is a VCR that can be programmed from any touch-tone telephone. Luxman's TP-117, due in the fall, is a combination tuner and preamp that functions as a control center for multiroom and multizone installations.

The general emphasis on upscale equipment for home and car will be demonstrated in a picture story on show-stopping products in next month's issue.

MUSIC NOTES

The first woman inducted into the Rock and Roll Hall of Fame, Aretha Franklin is the subject of a one-hour film in the American Masters series to be broadcast on most PBS stations on August 22. . . . Deutsche Grammophon devotes its entire August release to conductor/composer Leonard Bernstein, who turns seventy on August 25. . . . Pianist Ruth Laredo, America's "First Lady of the Keyboard," has signed a

recording contract with MCA Classics, which will release her performances of music by Albéniz and Falla in the fall. . . . The Disneyland Records and Tapes Read-Along version of *Bambi*, which includes a book and a tape or record, has been certified platinum by the RIAA, indicating sales of over 1,000,000 copies.

DAT FOR SALE

Audio Gallery, a retailer in Santa Monica, California, is selling DAT recorders by Sony, Technics, Casio, JVC, and other manufacturers along with about a hundred European software titles (mostly jazz and classics). The store reports that a Technics portable priced at \$2,995 is selling especially well, not only because it is portable, but because it will make digital-to-digital recordings from one DAT machine to another. Audio Gallery, which imports these units directly from the Orient, offers its own one-year warranty.

PHILIPS INTRODUCES IDTV

A new digital, improved-definition television (IDTV), developed by Philips, will go on sale in September. A table model with a 27-inch screen, it costs \$1,500. A 31-inch IDTV console, priced at \$2,600, will be available in October. The IDTV system, through noninterlace scanning, doubles the number of scan lines from the standard 262 lines every 1/60th of a second to 525 lines every 1/60th of a second. The result is a 40 percent improvement in vertical resolution. Also, two viewer-selectable levels of digital noise reduction provide up to 12 db reduction in extraneous video noise for sharper picture reproduction.

TECH NOTES

Koss Corporation, celebrating its thirtieth anniversary, is reintroducing the Pro4AA Stereophones, classic headphones first introduced in 1970. Price: \$99.95. . . . Mitsubishi is again active in audio in a big way and is combining its audio and video

technology in a new line of home theater systems. . . . Telarc, until recently a CD-only label, has chosen TDK's SA tape for its first major release of prerecorded cassettes, a collection of ten best-selling recordings by Erich Kunzel and the Cincinnati Pops, priced at \$8.98 each. . . . Philips and DuPont Optical (PDO) has developed a 5-inch erasable optical disc that can store up to one gigabyte of information. . . . Toshiba has introduced the world's first 3-D camcorder, the SK-3D7, using the VHS-C format. The 3-D images are viewed with an electronic adaptor and special liquid-crystal glasses. It will sell for \$2,850 for the camera, adaptor, and glasses.



TRIPLE PLAY

Andrew Lloyd Webber, whose *Phantom of the Opera* won seven Tony Awards in June (including one as the season's Best Musical), has been honored by the American Society of Composers, Authors and Publishers for being the first composer to have three hit musicals running simultaneously in New York and London. He was awarded ASCAP's first Triple Play Award for the continuing, successful runs, both on Broadway and in the West End, of *Cats* and *Starlight Express* as well as *Phantom*.



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LETTERS

American Audio

I would like to applaud June's special report by William Livingstone on the state of American audio. Only through coverage like this can people appreciate and understand exactly what American audio companies have to offer.

The most important part of the report, however, was the "Counterpoint" offered by Joseph Roizen, president of Telegen. He hit the nail on the head with his condemnation of those American businessmen who search only for short-term profits. If one looks across the economy, invariably those companies that concentrate on research and development earn healthy profits, win bigger market shares, and outperform their foreign competitors. Success stories such as Ford Motor Co., Harman Kardon, Carver, Polk Audio, and others should be well publicized to prevent America from "being a country where we just sell each other hamburgers and sue each other." in the words of Mr. Roizen.

JIM MCKEON
Hampden, MA

It was fascinating to read Joseph Roizen's comment that the National Association of Broadcasters (NAB) is capable of funding \$40 million in applied research on competing systems for advanced compatible television. His assumption about the NAB's financial might is truly fanciful. In fact, \$40 million would consume the NAB's total membership dues for six years.

Mr. Roizen is also wrong to assume that a trade association should be responsible for completing product development work begun by private industry at precisely the time when the commercial payoff appears imminent. The NAB's role is to aid the adoption of new technologies invented by private industry, and we are doing that. With the networks and broadcasting groups we have set up an Advanced Television Test Center with an annual budget of \$2 million to evaluate all the developing new systems. Even this strains our financial resources. The industry—perhaps including Mr. Roizen's own firm, Telegen—will have to come up with the \$40 million.

WALTER W. WURFEL
Senior Vice President
National Association
of Broadcasters
Washington, DC

Pioneer's CD Magazines

In the June "Car Stereo" test report on the Pioneer KEX-M700 cassette tuner and CDX-M100 CD changer, Ken Pohlmann reported a "hassle" in using

the changer because "although the JD-M100 magazine used in the car changer can also be used in [Pioneer's] home changers, the reverse is unfortunately not the case." Mr. Pohlmann's difficulty may have resulted from trying to use an earlier Pioneer CD magazine, the JD-M6, which was still included with the initial run of the 1987 model changer that he referred to earlier in his report, the PD-M70. The JD-M100 magazine is now included with all of Pioneer's home CD changers as well as being the only one recommended for use in the CDX-M100 car changer. It can easily be identified because it has gray plastic trays to hold the CD's and a convenient viewing window.

ALEX GIMENEZ
Sunshine Audio Sales, Inc.
Deerfield Beach, FL

Getting It Fixed

I was quite disappointed by Ralph Hodges's "High End" column in June, "Getting It Fixed." He makes it appear that most, if not all, Japanese companies have no concern for their customers after the sale is made. This is definitely untrue!

I work at JVC's East Coast service/headquarters location in New Jersey. JVC has nine Factory Service Centers and a network of Authorized Service Centers throughout the continental U.S. Every effort is made to insure customer satisfaction. Turnaround time is carefully monitored, and Quality Assurance Reports are written by any service employee who finds a problem or feels there is something that can be improved. Customer survey letters are sent, and meetings are frequently held with the Customer Relations Dept., Engineering, and the Parts Dept. to discuss any problems.

The way we greet our customers is, "Hi, how may I help you?" Many customers are so happy with the service they have received that they send letters of appreciation. We cannot please everyone, but we sure as heck try! And I am sure the same is true for most Japanese companies.

SCOTT DURANN
Garfield, NJ

Correction

Through a copy-editing error, the heading for Richard Freed's review in July of the Canadian Brass recording of an arrangement of Bach's *The Art of the Fugue* indicated that it consisted of "excerpts." In fact, this single-disc/tape CBS Masterworks release contains all the music found in other recordings of the score, which are often spread over two LP's, cassettes, or CD's.



The performance is about to begin.

Introducing Pioneer's New High-Performance Car Stereo Amps.

Take your seat. Turn up the volume. And get ready for the ride of your life. Because our new high-powered, low-distortion car stereo amps are designed to give you unparalleled sonic quality—incredibly crisp, clear highs, heart-pounding bass, and a flawlessly brilliant midrange.

And with cutting-edge features like internal fan cooling, High-Speed MOS-FET transistors, PWM power supply and flexible multi-channel bridging, these powerplants turn any drive into high-performance excitement.

Pioneer's new car stereo amplifiers. They simply outperform anything else on the road.

Model Number	GM-4000	GM-3000	GM-2000	GM-1000
Max. Power Rating*	200 x 2	75w x 4	100w x 2	60w x 2
EIA Power Rating	100 x 2	40w x 4	50w x 2	30w x 2
Freq. Response (Hz) (+0dB, -1dB)	10 - 50,000	10 - 50,000	10 - 50,000	10 - 50,000
THD (%) (1KHz, 4 ohms)	0.002	0.005	0.005	0.005

 **PIONEER**



AM-320

polk audio

SDA SRS 2.3
\$1099.95 ea.

The Polk Revolution Continues!

"Polk reinvents the loudspeaker"

High Fidelity Magazine

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

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

Introducing the SDA SRS 2.3

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



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

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CIRCLE NO. 90 ON READER SERVICE CARD

Where to buy Polk Speakers? For your nearest dealer, see page 96.

Without these components your stereo system will sound like dirt.



Dust, lint, even fingerprints, can make an expensive piece of stereo equipment sound like an expensive piece of junk.

Our record, tape, and CD cleaners make these troubles disappear.

Our D4+™ record care system, with its patented cleaning fluid, lifts and suspends dirt from your record and wipes it clean away.

Our tape deck cleaning cassettes work just as neatly. They not only clean your tape heads to keep your music brilliantly clear. They clean the tape path (and all the little parts inside it), so your tapes don't stick and get "eaten up."

CD's? Nothing beats our CD cleaner. It's the only one with true radial cleaning. An ingenious breakthrough that prevents streaks from running along the CD's path, muddying up your music.

Make every piece of your stereo sound great using these and our other Discwasher® products. After all, what's the use of owning a really good sound system if all you amplify are really bad sounds?



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for sparkling performances.

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CIRCLE NO. 10 ON READER SERVICE CARD

NEW PRODUCTS



Terk

The disc-shaped Terk π (Pi) FM antenna's electronics, designed by Larry Schotz, include a low-noise amplifier said to provide up to 30 dB gain for weak signals. The circular portion is about the size of a compact disc, and the antenna can be used either vertically, for directional tuning, or horizontally, for omnidirectional tuning. The Pi antenna connects to a tuner with a 75-ohm shielded cable; a transformer is supplied for use with 300-ohm inputs. Finish is white or matte gray. Price: \$79.95. Terk Technologies, Dept. SR, 56 Harrison St., New Rochelle, NY 10801.

Circle 120 on reader service card



Monitor Audio

The R452MD from Britain's Monitor Audio is a two-way, floor-standing speaker system with a 1-inch aluminum-dome tweeter suspended on a soft polyamide surround and an 8-inch doped-paper-cone woofer supported by a heavy die-cast aluminum chassis. A tuned port is below the woofer. The complementary designs of the drivers are said to enable a minimal, four-element crossover to be used, increasing sensitivity and avoiding crossover side effects. Rated sensitivity is 91 dB sound-pressure level at 1 meter with a 1-watt input, frequency response is 20 to 20,000 Hz \pm 3 dB, and recommended amplifier power is 15 to 150 watts. Nominal impedance is 8 ohms. The cabinets and front baffles of each pair of speakers are finished in matched walnut, black-ash, or oak veneers. Dimensions are 10 inches wide, 12 $\frac{3}{4}$ inches deep, and 25 $\frac{1}{2}$ inches high. Price: \$1,099 a pair. Monitor Audio, Dept. SR, Kevro Electronics, Inc., P.O. Box 1355, Buffalo, NY 14205.

Circle 122 on reader service card



Sumo

Sumo's Aurora is a low-profile, rack-mountable AM/FM tuner with a knob control for fine tuning as well as bidirectional auto-seek tuning and eight presets for each band. It includes a selectable dynamic noise-reduction system that is said to improve reception of weak FM signals significantly with negligible effect on separation. The Aurora uses linear-phase IF filters and has a

switchable IF bandwidth. Performance is also said to be enhanced by an advanced multiplex decoder and gold-plated output jacks. Rated FM signal-to-noise ratio is 85 dB in mono, 82 dB in stereo. Alternate-channel selectivity is given as 75 dB, and the 50-dB quieting level is 16 dBf in mono, 34 dBf in stereo. Capture ratio is 10 dB. Price: \$649. Sumo, Dept. SR, 21300 Superior St., Chatsworth, CA 91311.

Circle 121 on reader service card



Classic Audio

Classic Audio's CA 260 power amplifier is a dual-mono design rated for 50 watts per channel. The combination of tubes and field-effect transistors in the drive circuits is said to achieve very low noise and distortion with only 8 dB of negative feedback. Massive power supplies with two-stage regulation are said to provide superior definition and imaging. The rack-mountable amplifier also features gold input connectors and protective circuitry to avoid possible damage from turn-on surges and power-line transients. Price: \$1,665. Classic Audio, Dept. SR, P.O. Box 176, Walton, NY 13856.

Circle 123 on reader service card

NEW PRODUCTS



KEF

KEF's top C Series speakers are the C95 (left, in different veneers and with grille on and off) and the C75. Both systems occupy less than a square foot of floor space, and both feature KEF's Uni-Q coincident two-way driver. In the C95, a 1-inch tweeter is mounted on the same axis and in the same acoustic plane as an 8-inch polymer-cone mid-range; the C75 has the same arrangement but with an 8-inch woofer, and an identical second woofer is mounted below its Uni-Q driver in a matching die-cast chassis. Bass frequencies in the C95 are handled by an 8-inch woofer mounted vertically inside the cabinet

and front loaded by a tuned cavity with a port below the Uni-Q driver.

The Uni-Q system is claimed to improve phase integrity, reduce diffraction, and provide accurate stereo imaging over a broader listening angle. Frequency response of the C95 is rated as 50 to 20,000 Hz \pm 3 dB; the C75's lower limit is 57 Hz. Nominal impedance for both models is 4 ohms, and sensitivity is 90 and 91 dB, respectively. The C95 can handle up to 250 watts per channel, the C75 150 watts. Height is about 34 inches for the C95, 28½ for the C75. Prices: C95, \$1,290 a pair; C75, \$750 a pair. KEF, Dept. SR, 14120-K Sullyfield Circle, Chantilly, VA 22021.

Circle 124 on reader service card

Acoustic Research

The AR TSW 115P is a powered two-way speaker system with magnetically shielded drivers for use near a video monitor or TV set. The amplifier built into one of each pair of speakers is rated for 16 watts per channel from 50 to 20,000 Hz with less than 1 percent total harmonic distortion and a 2.3-dB dynamic headroom. Each speaker has a 4-inch polypropylene-cone woofer in an acoustic-suspension enclosure and a ¾-inch liquid-cooled titanium-dome tweeter with AR's Tetra-helix mounting plate and acoustic lens. The woofer is electronically equalized to extend bass response. Peak acoustic output is said to be in excess of 105 dB sound-pressure level at 1 meter.

The cabinet's top and bottom are solid, natural-finish walnut or oak, and the rest is finished in black vinyl veneer with a black cloth grille. Dimensions are 10½ inches high, 7¼ inches wide, and 6¾ inches deep. Price: \$400 a pair. Acoustic Research, Dept. SR, 330 Turnpike St., Canton, MA 02021.

Circle 125 on reader service card

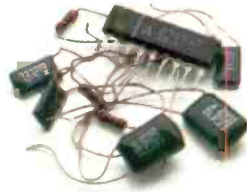


Sherwood

Sherwood's top cassette deck is the DS-1630R, a three-head, two-motor, autoreverse model with Dolby B and Dolby C noise reduction as well as Dolby HX Pro headroom extension. It features automatic music search for up to twenty selections, an auto tape-type selector, bias fine-tuning, a timer control, and a headphone jack with a level control. Frequency response is rated as 30 to 18,000 Hz with metal tape. It is compatible with Sherwood's Digi-Link system and can be controlled through a Sherwood receiver or amplifier. Price: \$379.95. Sherwood, Dept. SR, 13845 Artesia Blvd., Cerritos, CA 90701.

Circle 126 on reader service card





Yamaha just solved the industry's biggest problem.

All those little capacitors, resistors and semiconductors?

They make up what's known as a CD player's analog filter.

A necessary evil designed to remove unwanted digital noise. While unfortunately distorting otherwise crystal-clear sound with phase shift.



Yamaha's exclusive hi-bit direct out technology bypasses the analog filter, resulting in pure, crystal-clear sound.

Ahem. Presenting Yamaha's exclusive hi-bit direct output technology.

A revolutionary technology we've incorporated into our CDX-910U, giving you the option of completely eliminating the analog filter with the touch of a button.

Allowing you, in turn, to enjoy improvement in music you thought couldn't be improved.

You'll also find 8 times oversampling. Giving you incredibly accurate waveform resolution and unbelievably natural sound.

Hi-bit twin D/A converters to improve dynamic resolution and eliminate interchannel phase distortion.

And a host of features that add up to the most pleasurable listening experience yet.

Stop by your nearest Yamaha dealer today and hear the remarkable new CDX-910U CD player for yourself.

We think you'll come away sharing our philosophy that anything that comes between you and your music is definitely a big problem.

No matter how small it may be.



Use the 46-key wireless remote, or use a Yamaha RS integrated amp, preamp or receiver remote.

YAMAHA®



NEW PRODUCTS



Bush

Bush Industries' top-of-the-line AV-786 audio/video cabinet is part of its traditional-style Jamestown Collection. The video compartment, which is hidden behind raised-panel doors, is large enough to accommodate up to a 27-inch TV set. The audio-component area has one fixed shelf and three adjustable ones, protected by full-length safety-tempered glass doors framed in wood. The cabinet has a golden-brown oak finish with brass hardware. Dimensions are 53 x 50 $\frac{3}{8}$ x 20 $\frac{3}{8}$ inches. Price: \$359.95. Bush Industries, Dept. SR, One Mason Dr., P.O. Box 460, Jamestown, NY 14702-0460.

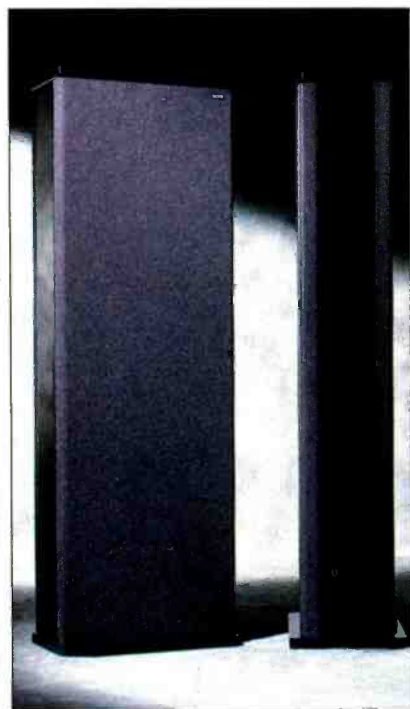
Circle 127 on reader service card

NEC

The PLD-310 Dolby Pro Logic surround-sound decoder from NEC can decode Dolby Surround soundtracks and adjust its output for systems with different speaker configurations. In the normal setting, it provides the full Dolby Surround effect with separate signals for left, center, right, and surround speakers. For systems with no center speaker, the "phantom" setting gives the illusion of a center channel from a

standard left-right stereo pair. The "wide" setting provides a full-range signal for all speakers, regardless of location, and the bypass mode can be used for conventional stereo programs without Dolby Surround encoding. The PLD-310 also includes a 20-microsecond digital delay circuit, a test-tone generator, and a wireless remote control. Price: \$449. NEC Home Electronics, Dept. SR, 1255 Michael Dr., Wood Dale, IL 60191.

Circle 128 on reader service card



Mirage

The Mirage M-1 floor-standing bipolar speaker system has a $\frac{3}{4}$ -inch hyperbolic-dome tweeter, a 4 $\frac{1}{2}$ -inch carbon-filled polypropylene midrange driver, and an 8-inch woofer on each side, operating in phase and with equal outputs. Crossover points are 400 and 2,300 Hz; the front and back woofers use different crossover slopes to eliminate cancellation effects. To minimize diffraction, the vertical cabinet edges are rounded and all of the drivers are mounted flush with the baffle. Rated frequency response is 25 to 23,000 Hz ± 2 dB. Sensitivity is rated as 83 dB sound-pressure level at 1 meter with an input of 1 watt, and nominal impedance is 6 ohms. The M-1's sides, top, and bottom are finished in high-gloss black lacquer, and a black double-knit cloth grille covers the speaker panels. The speaker stands 59 $\frac{3}{4}$ inches high and is 19 $\frac{1}{2}$ inches wide and 9 $\frac{1}{2}$ inches deep; weight is 185 pounds. Price: \$4,000 a pair. Mirage, Audio Products International, Dept. SR, 135 Torbay Rd., Markham, Ontario L3R 1G7.

Circle 129 on reader service card

OWI

The Model 503 from OWI is a compact three-way, weatherized speaker system designed specifically for year-round outdoor use. It has a $\frac{5}{2}$ -inch woofer, a 2-inch midrange, and a 1-inch tweeter. Frequency response is given as 60 to 22,000 Hz, sensitivity as 93 dB sound-pressure level at 1 meter with an input of 1 watt, and nominal impedance as 8 ohms. Dimensions are 6 $\frac{3}{4}$ inches high, 10 inches wide, and 6 inches deep. The 503's can be mounted on walls or ceilings with optional Omni-mount brackets. Price: \$359 a pair; brackets, \$30 a pair. OWI, Dept. SR, 1160 Mahalo Place, Compton, CA 90220.

Circle 130 on reader service card



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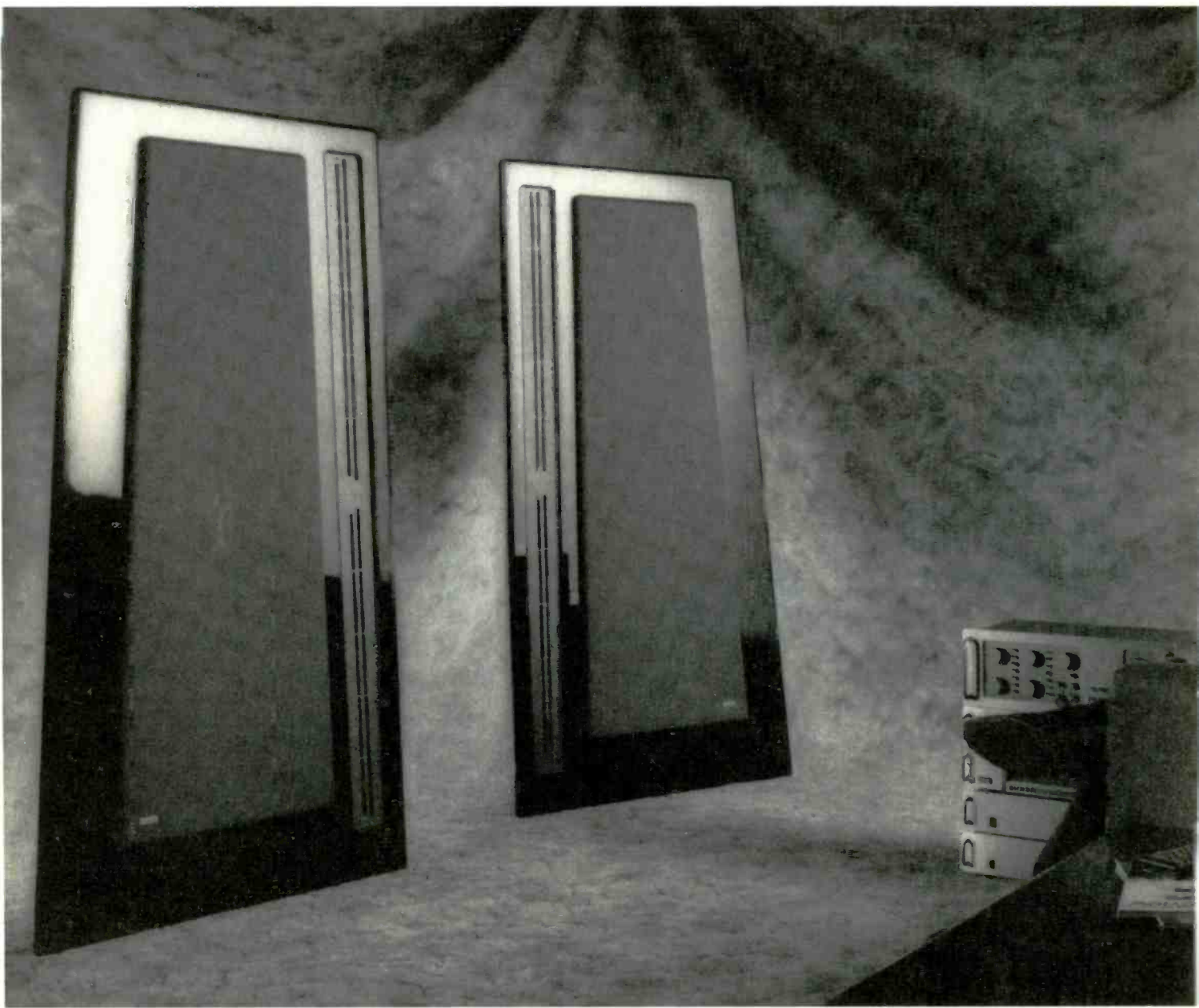
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Amazing.



How it works.

A brief conversation with Bob Carver:

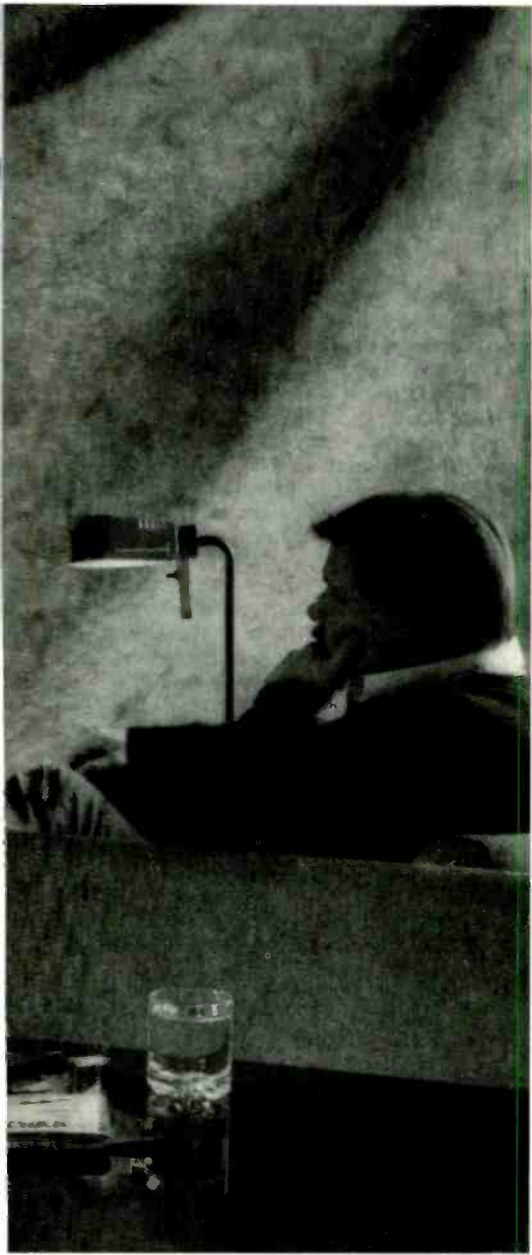
Q. How can The Amazing Loudspeaker put out so much powerful, extended bass?

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

Q. Why use a ribbon driver?

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

POWERFUL



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

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

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

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

STEREO REVIEW

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

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

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

Henry Hunt
Hi Fidelity Editor
HOUSTON POST

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

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

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

Peter Aczel
THE AUDIO CRITIC

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

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

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

Sheer wonder:

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

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

Julian Hirsch
STEREO REVIEW

Q. But aren't ribbon drivers inefficient?

A. Not when designed with enough magnetic field strength. Each Amazing Loudspeaker ribbon uses 30 feet of high energy magnets in a special focused field gap. At 82dB efficiency, that's almost twice as efficient as any other ribbon that goes down to 100Hz. Our M-1.01 power amplifier yields peak SPLs exceeding 106dB, up to 110dB with an M-1.5! More than ample to deliver a symphonic orchestra's sonic power, fifth row center.

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

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

CARVER

ACCURATE

MUSICAL

by Ian G. Masters



Record Cleaning

Q I play a lot of records, so I go through a lot of record-cleaning fluid. I have considered switching to distilled water—for the price of a 16-ounce bottle of the liquid I use, I could buy seventeen gallons of water—but the cleaner manufacturer says his product protects vinyl stabilizers, contains antimicrobial agents, and has “surfactants” to break down fatty acids such as fingerprints. Even granting that all this is true, does it warrant a cost 137 times higher than distilled water?

DAVID ENGLISH
Somerville, MA

A Vinyl is very fragile stuff, so to protect your investment in records, it makes sense to treat them as gently as possible even if it costs a bit extra. The developers of record-cleaning systems have put a great deal of research into their products, and while that may not make them 137 times better than distilled water, why take the chance?

I suspect, however, that the cost only matters because you over-clean your records. For most plays, a record need only be brushed lightly and possibly treated with a static remover (not an “antistatic” aerosol spray, which will just gum up the grooves). Only when a record is very dirty does it need liquid treatment, not every time you play it. If you use the fluid only occasionally, it should last for years. Its greater cost compared with distilled water then means very little.

Digital Pre-Echo

Q With vinyl discs, and even cassettes, I have occasionally been able to hear the sound from the next track a few seconds ahead of the actual recording, but I accepted such false starts as inevitable with those systems. When I got into CD's, I thought I had rid myself of such phantom sounds, but recently I bought the compact disc version of a favorite old album, and I found I could hear the same sort of musical mirage. How can this happen? And is there any possibility of fixing it?

ERIC J. SAWYER
Arlington, MA

A There is nothing in the compact disc system that could cause this effect, so the fault must have been in the analog master tape. If a conventional tape is stored for a long time, it can develop print-through: The magnetic pattern on the tape begins to duplicate itself onto adjacent tape layers. This caused the pre-echo you noticed on your cassettes, and it can do the same thing to a master recording. Unfortunately, there is not much you—or the record company—can do about pre-echo once it's there.

Separating Power

Q To reduce the possibility of hum, I am considering removing the transformers and power-supply circuitry from the chassis of my amplifier and housing them separately, connecting the two sections with shielded cables. Would this be worth my time and effort? Would it improve sound quality appreciably?

RICHARD CHRISTENSEN
Provo, UT

A No and no, unless you currently have a hum problem. Even if you do, it's probably caused by something else that can be fixed much more easily. Nevertheless, it is true that keeping the power section of an amplifier as far away as possible from the low-level signal carriers reduces the possibility of 60-Hz leakage, and there have been many amplifiers over the years that have been separated in the manner you suggest. Few of today's amplifiers are troubled with hum from that source, however, so the sort of radical surgery you propose is unlikely to be worthwhile.

Dedicated Equalizer

Q I have the opportunity to acquire an old pair of Bose speakers, but the instructions state that they must be used with the equalizer designed for them. The equalizer was lost years ago.

Would I risk damaging the speakers if I operated them without the proper equalizer? If not, would I be able to achieve flat frequency response with another equalizer or by using the tone controls on my amplifier?

MARK BARE
Waterloo, NE

A Running the speakers without the correct equalization would not cause them any harm, but the response would be far from flat. You might be able to offset this to some degree with another equalizer, but you would have to do a lot of fiddling to get an acceptable balance, and it's still very unlikely that the speakers would come close to their intended performance level.

Audio designers use various means to make their products achieve a particular sound. The most common method in speaker design is to choose drivers that match as closely as possible and then make fine adjustments to the built-in crossover network to smooth out any irregularities. Another approach, such as Bose used in certain of its models, is to have an external device to compensate for nonlinearities in the response curve. Such equalizers are inserted into the system *before* the power-amplification stage, so that fewer components interrupt the signal between amplifier and speaker. The circuit is designed to deal with the characteristics of a specific speaker, which will not function properly without such tailoring.

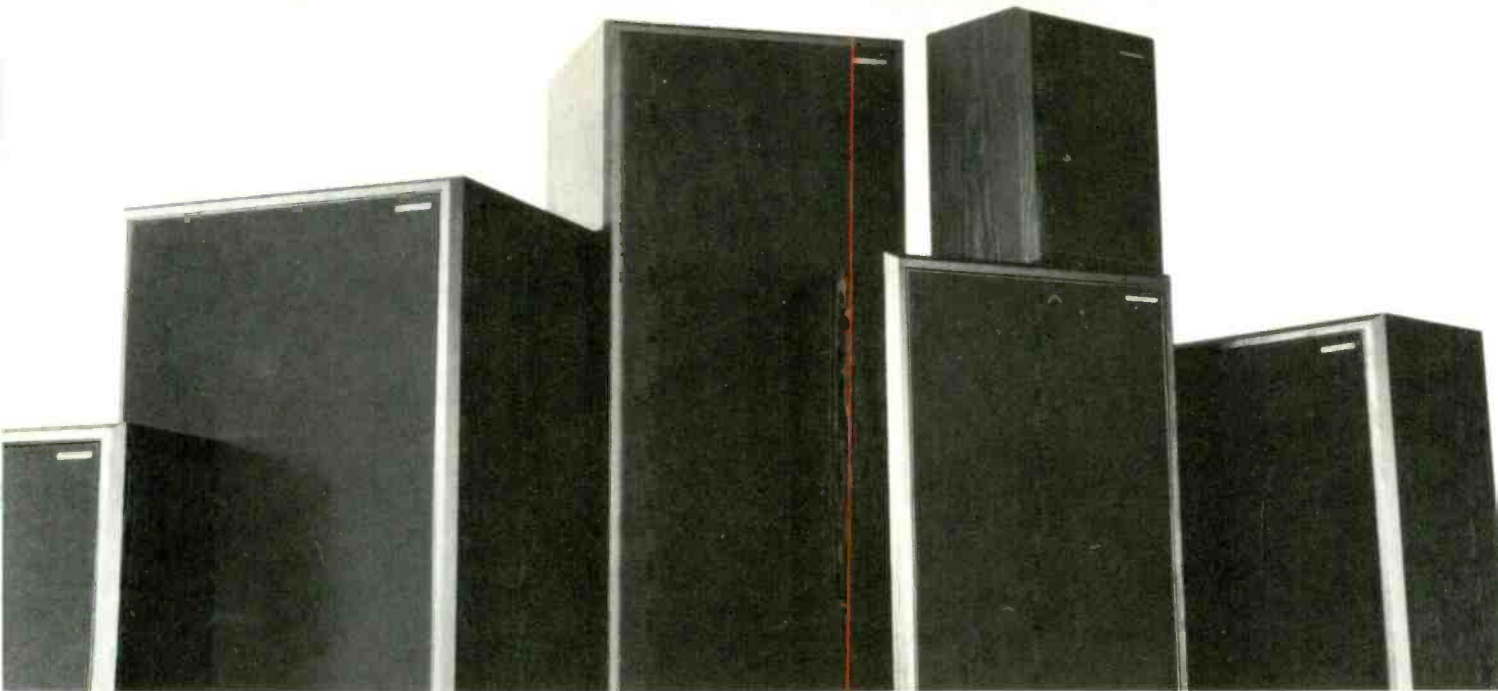
Bose should be able to supply you with the proper equipment for a lot less than buying a new pair of speakers. It would be well worth the investment.

Recording MTS Video

Q I own a VCR with hi-fi stereo sound and have recently purchased a video monitor that has MTS stereo capability, which the VCR lacks. By feeding audio from the TV set to my VCR, I can record stereo programs while I watch them, but I would like to make unattended recordings as well. Is there any way to do that with my present equipment?

RONALD E. MILLER
APO New York

A The simplest way is just to leave the monitor on when you are not present but want to make a recording; television sets don't use very much power, so this would not be particularly energy-wasteful. If you balk at that, however, an external timer can be used to switch the set on just before recording starts and to shut it down afterward. The only things you lose are multiple-programming and channel-switching capability. □



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CIRCLE NO. 33 ON READER SERVICE CARD

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

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

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

Ensemble. The last loudspeaker of Henry Kloss.

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

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

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

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

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

The almost sub-audible but palpable sounds generated by the big pipes of the organ, the bottom of the acoustic or electric bass, the low notes of the synth...

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

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

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

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

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

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

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

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

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

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

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

As for the other 8 octaves of music.

The rest of the sound spectrum, from a nominal crossover of 140 Hz, is reproduced by a stereo pair of two-way satellite units. Each incorporates a low-frequency driver, crossing over at 2,700 Hz to a direct-radiator tweeter that goes beyond audibility.

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

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



What Henry Kloss tells his friends:

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

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

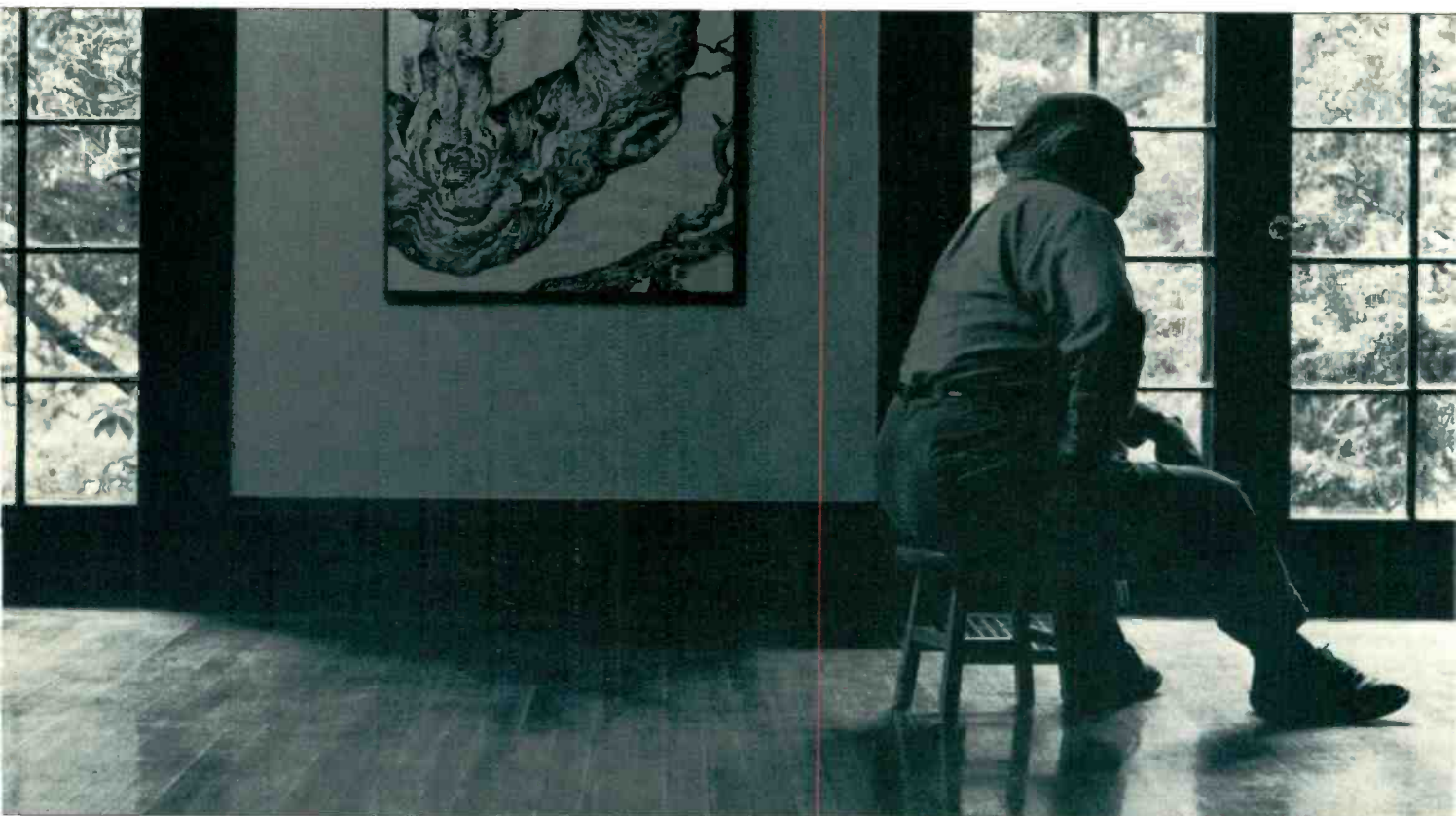
Overcoming the fear of paying too little.

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

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

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

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



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

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

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

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

Speaking directly to the people who make the speaker.

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

We welcome you.

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

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



placement and other related audio equipment.

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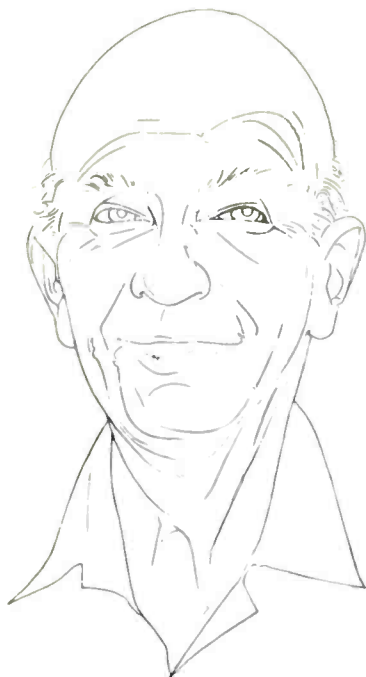
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Suite 102

by Julian Hirsch



What Product Reviews Can't Tell You

ONE question that is posed to me from time to time, and one that I frequently ask myself, concerns the reliability of hi-fi components. Considering the sizable investment that goes into even a modest music system, this is a legitimate subject of concern to the consumer. And the importance of reliability is increased by the integrated designs of today's electronic products, which do not lend themselves to conventional service and repair techniques. "Repair," when it is possible at all, is usually a matter of replacing the entire circuit board or subassembly containing the defective component, instead of identifying and replacing the defective part itself.

Anyone who has looked inside a modern receiver, CD player, or tape deck will appreciate the difficulty of gaining access to all parts of the circuitry, especially while the unit is operating, in order to measure signal waveforms and operating voltages. This is a job for a skilled technician, preferably factory-trained.

Even authorized service companies often have to return a defective product to a factory service center because they are unable to effect a proper repair themselves.

Obviously, these repairs are highly labor-intensive, which means *expensive*, and in view of the ongoing decline of new product prices (in constant dollars), it frequently makes more sense to scrap an otherwise satisfactory product that has developed a problem and buy a new one—usually with additional features and better performance—than to invest a comparable, or greater, sum in repairing the old one. For example, although little is said about the life span of the laser diode that is the heart of a CD player, it is certainly finite. Replacing it is quite expensive and would probably not be worthwhile in the case of a low-price player.

There is also a considerable variation among manufacturers in the time required to supply spare parts. Because of these and other factors, it is evident that a product that is not prone to failure is preferable to one having poor reliability, even if the latter has better performance qualities while it is working.

Unfortunately, for a number of reasons reliability data are simply not available to the purchasing public. Although their repair technicians know very well which makes and models cross their benches most often, authorized service agencies cannot disclose this information under penalty of losing their franchises. Independent testing organizations such as Consumers Union can amass a wealth of reliability data from their own tests and from regular reader/member sur-

veys, but although such statistics can be useful in the case of automobiles and major home appliances, they are of little help in a product area as volatile as consumer electronics, where few products have a market life of more than a year and there is no significant market for used components.

Our product tests for STEREO REVIEW are essentially limited to function and performance, as well as evaluating the components' ergo-

Out-of-warranty failures usually occur only after prolonged service, but the only way we can judge reliability is by whether a product survives our limited use period.

nomie or human-engineering qualities. A few of the tests we perform, such as operating an amplifier into 2-ohm loads or high-power pulse testing of speakers, deliberately stress a product beyond its ratings, but they are not intended to be destructive in nature. Generally, damage from such tests is rare and does not bar a product from receiving an acceptable review.

As a rule, out-of-warranty failures during normal operation occur only after prolonged service. Since it is impractical to extend testing for months or years, the only way we can judge reliability is by whether a product survives our limited use period. Occasionally one fails during testing, or even arrives in an inoperative state. Our usual practice is to request a second sample; if it performs satisfactorily, the first is considered to be an aberration. If the second unit fails, the test and report are canceled. Although this is not an ideal system, it is all we can do under the circumstances.

I do have strong views on product serviceability, however. For example, any fuses that might be blown in a careless misuse of the product that does not damage the circuits themselves, such as an accidental short circuit in speaker wiring, should be replaceable by the user. Naturally, such mishaps occur

Tested This Month

*Akai CD-93B
Compact Disc Player
Marantz PM-74D
Integrated Amplifier
Axiom AX-5 Speaker
Harman Kardon Citation
Twenty-Six DAT Deck*

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.

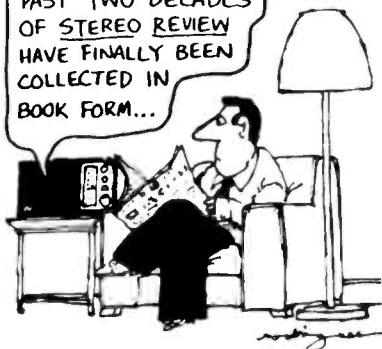
It makes the journey to your music that much shorter.

Artistry in Sound

ONKYO

TOTAL HARMONIC DISTORTION

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TECHNICAL TALK

much more frequently during testing than in normal use, and I take a dim view of having to remove the cabinet or cover and search for the fuse (often a value or type not readily available locally). I recall a case a number of years ago when a powerful amplifier made a total of three round trips between New York and California because its DC power-supply fuses, which blew at the instant of clipping, were buried in its vitals and required a major disassembly for their replacement! It is difficult for me to react with enthusiasm to such a design flaw, no matter how well the product performs otherwise.

Another important factor that is difficult to establish through product reviews, even if they include use testing, is the effectiveness of an automobile FM tuner in providing useful stereo reception. Although I do only bench testing on car stereo components, each such product reported on in the magazine also undergoes extensive road testing to check its performance in various reception areas.

Since a road test is a subjective evaluation, it reflects the specific local reception conditions that existed at the time, the particular car in which the tuner was installed, and the views of the tester. Another tester, in another car and location,

may not necessarily arrive at the same conclusions. This is, of course, a fundamental limitation of subjective testing. Nevertheless, in this case it is all we have, since I know of no laboratory measurements that will predict with any accuracy how well a car stereo FM receiver will cope with multipath reception (the *bête noire* of mobile FM).

I have had letters from several readers commenting on the vast differences between different car receivers they have tried and the total lack of correlation between their experience and the results of numerical laboratory measurements. I sympathize with their problems, although I have no solution to offer. It seems that almost all radios can perform satisfactorily in areas of good reception, and almost none perform well in the worst locations, with the majority falling between these limits. I have found that car FM tuners in general are no match for any reasonably good home tuner in respect to capture ratio, AM rejection, and selectivity. Nevertheless, I continue to be amazed at how much circuitry is squeezed into the tiny spaces of car stereo head units, and I prefer to be impressed by how *well* any given model works rather than by its failure to match the performance of a home tuner many times its size. □



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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!

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In the years that followed, Concord's quest for performance continued. Time and time again, Concord led the industry in developing new autosound technology. This drive for perfection established

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with a
preamp level fader

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1977
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The CX70 also incorporates many other Concord Firsts. FNR™ FM noise reduction, a Matched Phase™ tape head, dbx™ tape noise reduction and a DC servo tape drive motor are all included.

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First car deck
with 3 Band
Bass/Treble EQ

1983

First car deck
with 2/4 way
amplifiers

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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

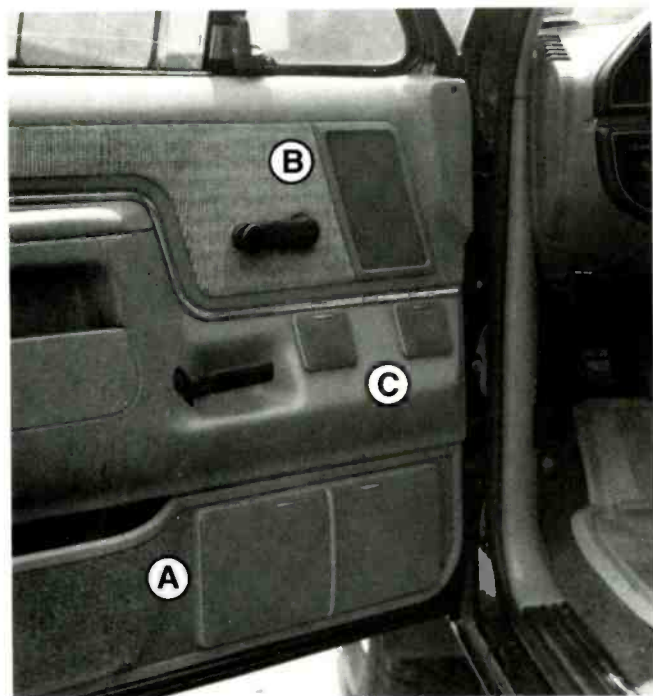
Concord Firsts.

The **Boston** Acoustics

Installation of the Month Contest



The 1988 Ford F150 Pickup Truck with this month's winning installation.



A 760LF 6 1/2" subwoofer system.

Two 760LF woofers are mounted side by side on the bottom of each door. This forward position for the woofers was made available by simply interchanging the map pocket panels from each door. The grille was adapted by cutting and joining two Boston 6 x 9" grilles. (All grilles were painted with factory paint to match the interior.)



B 4" woofer from 741 two-way component system.

Two pairs of 741 two-way component systems were also fitted into the cab. One pair of the 4" woofers went into the existing factory locations near the top of the door. (The others are in the rear of the cab, mounted in the rear side panel to provide fill for a surround effect.)



C Varimount® CFT tweeter from 741 component system.

Two Varimount tweeters placed side by side on the door panels between the 760LF woofers and the 741's woofers. Since the panel is angled up toward the passengers, the tweeters were flush mounted without their modules.

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

The August winner:

Robert Dyjak, Brooklyn, Connecticut

Robert Dyjak carefully selects his program material (everything from C&W to Rock) for its quality of recording, and usually plays his music at high levels. He wanted strong left-right separation, deep bass response and highs that would be clear without being shrill. Because he also wanted full sound all around him in the cab, he selected a combination of Boston woofers and component systems with that in mind. According to Robert, "The system fulfills everything asked of it. It has punch in the bass and clean clear highs, even when it's turned up loud—and it gets *very* loud. The combination of the Boston speakers and Soundstream electronics gives everything asked of it without calling attention to itself or being hard to use. The whole system sounds and looks clean from layout to installation. It all works."

The winner's dealer: Sound 1, Inc. Norwich, CT

The winner's salesperson: Bruce MacAdie

The winner's installation expert: Joe Hart

The winning system:

Boston Acoustics speaker systems:

Two pairs of 6 1/2" 760LF woofers mounted behind specially adapted Boston grilles in each of the front doors. Two pairs of 741 two-way component systems, with one pair of the 4" woofers in the factory door location, the other pair on the rear side panels to provide surround effect. The tweeters are mounted side by side on the upward-angled section of the door panel, facing the passengers.

Electronics:

Soundstream: TC308 cassette/tuner permanently mounted in the factory dash location. Amplifiers: D100 (50 watts x 2) powering the 760LF woofers, SF90 four-way (30 watts x 2, 15 watts x 2) for the 4" woofers and tweeters. The amps and the DX3 3-way electronic crossover are bolted under the seat.

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*. 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

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TEST REPORTS



AKAI CD-93B COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

AT first glance Akai's Reference Master CD-93B, which heads the company's current line of CD players, looks much like many other full-featured players, but it has a number of advanced circuit and construction features. Some of the latter can be appreciated when you pick it up—the CD-93B weighs a solid 30 pounds, more than twice as much as most full-size CD players!

Akai's engineers designed the CD-93B to avoid three weaknesses that they had concluded were shared by most current CD players: nonlinearity in the digital-to-analog (D/A) conversion process, vibration in the laser tracking assembly, and internal

signal degradation through interference and signal loss. Their solution to the first problem was to use true 18-bit digital filters with quadruple oversampling. A major benefit of this feature is to maintain linearity down to the lowest signal levels, where most CD players have substantial amplitude errors. Also, the high sampling frequency (176.4 kHz) effectively eliminates switching products from the analog output without requiring the use of high-order analog low-pass filtering. Since separate D/A converters are used for the two channels, inter-channel phase shift is also essentially absent.

Internal signal degradation has

been minimized by the use of optical couplers and fiber-optic cables to carry the digital signals within the player, isolated power supplies with separate power transformers for the analog and digital circuitry, and separate transformer windings and regulated supplies for the left and right analog channels. The digital circuit boards are also shielded to prevent their signals from leaking into the analog portions of the player.

The reduction of vibration transmission was achieved by the player's massive, rigid mechanical construction. The chassis is formed from a single U-shaped piece of die-cast aluminum molded with a raised honeycomb surface. The top plate of the chassis is a piece of 3.2-millimeter-thick (about 1/8 inch) copper-plated aluminum. Even the disc drawer, typically a molded plastic assembly in other CD players, is a single, rigid piece of die-cast aluminum, and there is a large alumi-

JOOK LEUNG

TEST REPORTS

num clamp for damping disc vibrations during play. For more rapid track changes and cueing, a linear motor is used to drive the laser.

The Akai CD-93B has a full complement of control features, including programming for playback of up to twenty tracks in any desired order and direct access to any track or indexed section. It has the usual repeat functions, auto-spacing (a 4-second pause between tracks during playback), and a very complete display window, including a "Music Calendar" that shows the playing and programming status of all the tracks on the disc. Another part of the display shows the current track and index numbers, the operating mode, and elapsed or remaining time in both the current track and the entire disc. A button can switch off the entire display except for the current track number and the operating-status indication.

The front panel of the CD-93B has a headphone jack with its own volume-control knob. The player can be set up for external-timer operation with a switch below the disc drawer. The rear apron has gold-plated phono-jack outputs for the analog line signals and a coaxial

output for the digital signals. There is also an optical digital output connector and a switch that turns the digital outputs on and off.

The CD-93B comes with a wireless remote control that duplicates all of its front-panel controls except the power switch, headphone volume control, and timer switch. The player is finished in black with pale gold markings. It measures 18 inches wide, including the wood-grain side panels, 13 inches deep, and 4½ inches high. Price: \$1,199. Akai, Dept. SR, 225 Old New Brunswick Rd., Piscataway, NJ 08854.

Lab Tests

The frequency response of the Akai CD-93B was one of the flattest we have measured, varying only +0.1, -0.05 dB from 20 to 20,000 Hz. The two channels had identical responses, and their levels differed by only 0.02 dB. The output from a 0-dB 1,000-Hz test track was 2.06 volts into an EIA standard load. The headphone volume was good with medium-impedance phones.

The 1,000-Hz harmonic distortion (excluding noise) was 0.0033 percent at 0 dB, 0.0057 percent at -10

dB, and 0.0128 percent at -20 dB. The A-weighted noise level was -104.5 dB referred to a 0-dB level, and the dynamic range was 100 dB. The channel separation was symmetrical (measuring the same from left to right as from right to left): 90 dB at low and middle frequencies, 66 dB at 20,000 Hz.

The low-level linearity (with dither) of the player's output, measured with the CBS CD-1 test disc, was the best we have found so far, with maximum errors of less than 0.3 dB down to the -100-dB level. The interchannel phase shift was nearly unmeasurable, typically less than 1 degree and reaching 2 degrees at 20,000 Hz. As with most CD players, the 100-Hz phase shift was about 4 degrees, also entirely negligible.

It came as no surprise, considering the construction of the Akai CD-93B, to find that it had no difficulty whatever in tracking all of the calibrated defects on the Philips TS5A test disc and that its playback was unaffected by anything less violent than a fist-slammng blow to the top cover, over the disc—which hurt me more than it did the player! The laser slewing was fast and accurate, with typical track-to-track times of about a second or less.

Comments

Our test results on the Akai CD-93B speak for themselves. It is truly a top-rank player, and its performance and features are commensurate with that status and with its price. We did not have an opportunity to use its digital outputs with an external D/A converter, although it is difficult to imagine any improvement that could result from such operation (when we have made such comparisons in the past, the results have not been as good as with the players' own converters).

In any case, this handsome product lived up to our expectations in full measure. So far as we could tell, it did not sound any different from other good CD players, but the benefits of this type of attention to detail rarely, if ever, translate *directly* into improvements in sound quality. They are real nonetheless and frequently well worth a premium cost.

Circle 140 on reader service card

FEATURES

- Quadruple-oversampling 18-bit digital filters
- Programming for up to twenty selections by track number
- Direct keypad access to any track or index point
- Fast forward and reverse with audible sound
- Auto-space to insert 4-second pauses between tracks
- Front-panel headphone jack with volume control
- Coaxial and optical digital outputs
- Front-panel switch for unattended timer operation
- Display of track and index numbers, elapsed or remaining time (track or disc), operating status, programming status; display defeat
- Heavy die-cast chassis, die-cast disc drawer, and heavy top plate
- Separate power transformers for analog and digital circuits
- Separate transformer windings for left and right analog channels

LABORATORY MEASUREMENTS

Maximum output level: 2.06 volts
Total harmonic distortion at
1,000 Hz: 0.0033% referred to 0 dB, 0.0057% referred to -10 dB, 0.0128% referred to -20 dB
Signal-to-noise ratio (A-weighted): 104.5 dB
Channel separation: 90 dB at 1,000 Hz and below, 72 dB at 10,000 Hz, 66 dB at 20,000 Hz
Dynamic range: 100 dB

Frequency response: +0.1, -0.5 dB from 20 to 20,000 Hz
Maximum phase shift (from 100 to 20,000 Hz): 4 degrees at 100 Hz, 2 degrees at 20,000 Hz
Cueing time: 1.3 seconds
Cueing accuracy: A
Impact resistance: top, A; sides, A
Defect tracking: tracked maximum-level defects on Philips TS5A test disc

THE END OF THE RECEIVER.



The GTP-500 is the most innovative and logical audio component in years. A superb tuner and preamplifier together on one chassis, completely separate from the power amplifier. This eliminates all the technical limitations of the receiver, assuring uncompromised sonic performance as well as an unrestricted choice of power. And a wireless remote controls the entire system—from your favorite chair or from several rooms in your home. The GTP-500 tuner/preamplifier is shown here with our 60 watt-per-channel* power amplifier. Up to 600 watts per channel are also available. In short, you're witnessing the dawn of a new era. To get the full story, write for our literature and reviews.

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Or why our Color Noise Reduction circuit and Double-Sided Black Matrix

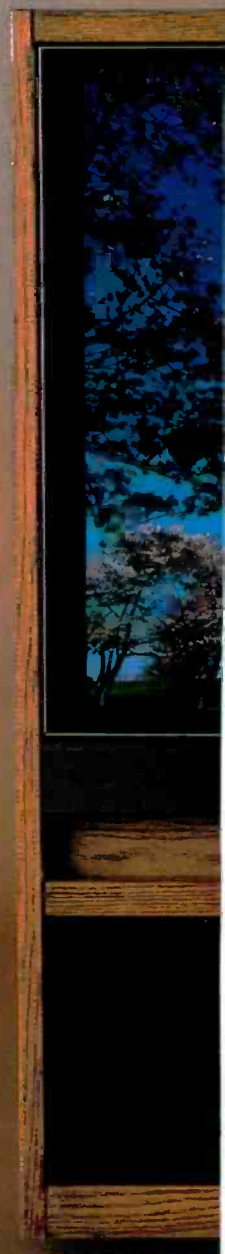
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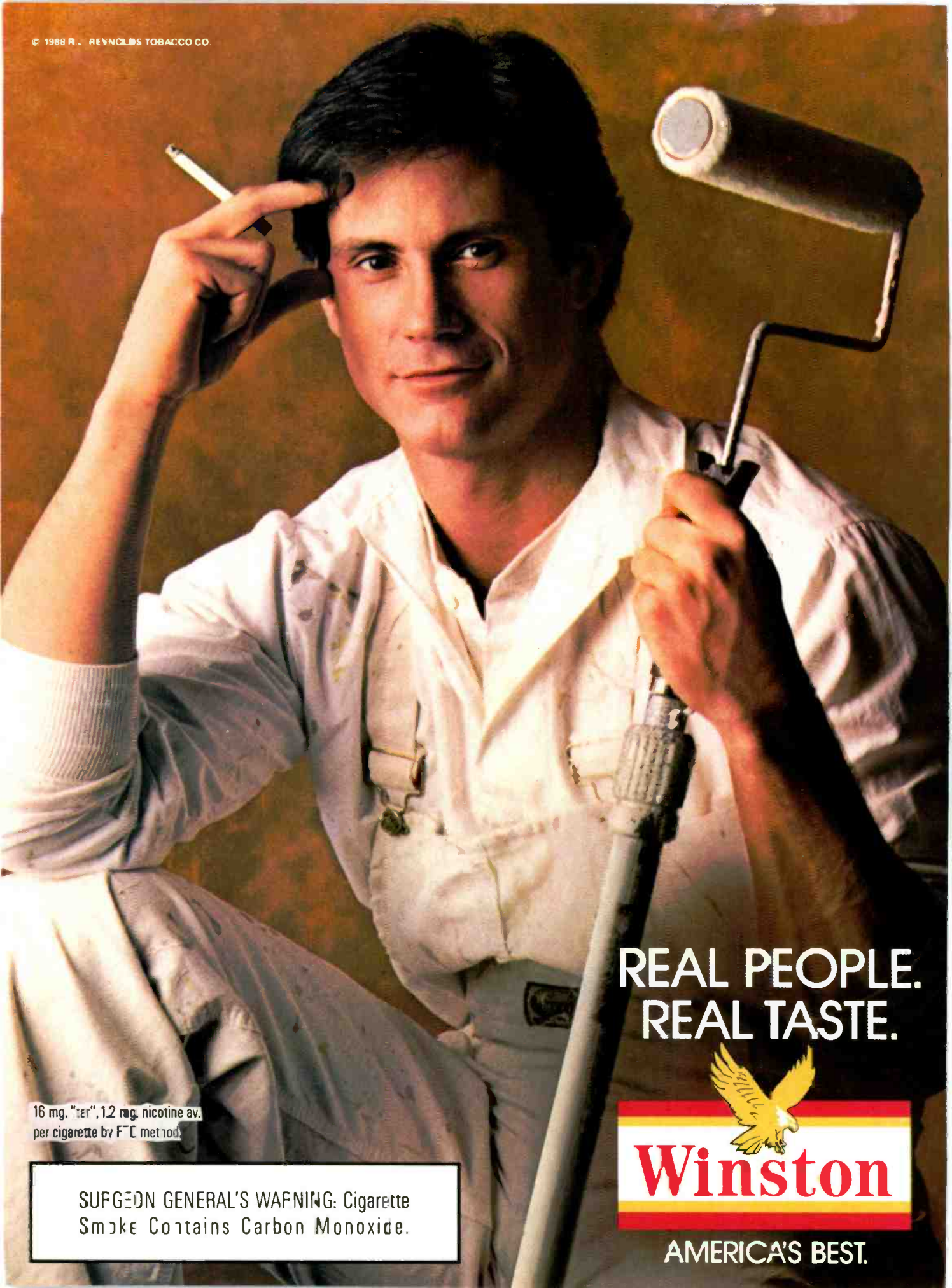


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MARANTZ PM-74D INTEGRATED AMPLIFIER

Julian Hirsch, Hirsch-Houck Laboratories

THE Marantz PM-74D integrated amplifier, rated to deliver 100 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.03 percent total harmonic distortion, features the company's "QuarterA" circuit, which provides low-distortion Class A operation at ordinary listening levels and a smooth transition to Class B when a high power output is required. Similar in function to the variable-bias circuits used in some amplifiers from other manufacturers, the QuarterA system effectively eliminates the cross-over distortion typical of conventional Class AB amplification while retaining the greater efficiency of Class B at higher power levels.

In addition, the PM-74D has an automatic-voltage-shift power-supply circuit that increases the supply voltage on the output transistors during brief high-level signal transients and restores the normal operating voltage when the extra power capability is no longer needed.

The Marantz PM-74D has the

operating and control features you would expect in a deluxe integrated amplifier. There are four high-level inputs—CD, tuner, TV/AUX (iliary) 1, and TV/AUX 2—and a single magnetic phono input, which can be set with a front-panel switch for either a moving-magnet (MM) or a moving-coil (MC) cartridge. Unlike most amplifiers, the PM-74D has separate bass and treble tone controls for each channel; the four knobs form a square at the left side of the panel. At the right side are four similar knobs for volume, balance, input selection, and recording-output selection. A recording can be made from any of the input sources while you are listening to any other. A vertical row of red LED's identifies the selected program source. There is also a front-panel stereo headphone jack.

The other controls are large push-buttons, including separate switches for the two sets of speaker outputs, tone-control defeat, mono/stereo mode, loudness compensation, MM or MC phono, tape copy (from deck

1 to deck 2), and tape monitoring (from either deck). The PM-74D also has a CD/PHONO DIRECT switch that bypasses all unnecessary circuits when the CD or phono input is selected. It disables the tape-monitor and tape-copy circuits as well as the mono/stereo switch and the balance control. It also disconnects the unused portions of the input-select or switch from the rest of the amplifier circuitry.

The rear apron of the amplifier has insulated speaker binding posts that accept the stripped ends of speaker wires but are incompatible with dual banana-plug connectors. The signal inputs and outputs, including the gold-plated CD and phono jacks, are grouped on one side of the rear apron, with three AC convenience outlets (one switched) at the other side.

The Marantz PM-74D is a fairly large amplifier, measuring 18 inches wide with its rosewood side panels, 14¼ inches deep (including the speaker binding posts), and 6½ inches high. It weighs about 30 pounds. Price: \$880. Marantz, Dept. SR, 20525 Nordhoff St., Chatsworth, CA 91311.

Lab Tests

After we preconditioned the amplifier for an hour at one-third rated power, its 1,000-Hz output clipped

TEST REPORTS

at 132 watts per channel into 8-ohm loads, for a clipping headroom of 1.2 dB. Into 4 and 2 ohms, respectively, the clipping outputs were 196 and 307 watts per channel. At outputs from 1 watt to more than 100 watts into 8 ohms, the distortion was typically between 0.002 and 0.003 percent. The 4-ohm distortion was slightly higher, around 0.005 percent at most power levels, and into 2 ohms it rose from less than 0.01 percent at usual listening levels to more than 0.2 percent at 300 watts. (The 2-ohm measurements were made with only one channel driven to avoid blowing out the power-line fuse.) The dynamic power output was 170 watts into 8 ohms, 300 watts into 4 ohms, and 360 watts into 2 ohms; the 8-ohm dynamic headroom was 2.3 dB.

The distortion at any given power level was nearly constant across the audio frequency range. At the rated

100 watts it was less than 0.002 percent from 20 to 7,500 Hz; at 50 watts it was about 0.0022 percent over that range, and at 10 watts it was between 0.004 and 0.005 percent. At all power levels the distortion at 20,000 Hz measured about 0.004 percent.

The slew factor of the PM-74D was 2.25, with a triangular output waveform appearing at about 45,000 Hz when it was driven at 100 watts into 8 ohms. The amplifier was stable with reactive simulated speaker loads.

For a reference output of 1 watt, the amplifier required a high-level input of 15 millivolts (mV) or a phono (MM) input of 0.285 mV; in the MC phono mode, the required input was 0.029 mV. The respective A-weighted noise levels (referred to 1 watt) were -83, -80.6, and -74 dB. The phono preamplifier overloaded at input levels ranging from

105 mV at 20,000 Hz to 143 mV at 20 Hz.

The amplifier's frequency response, measured from the CD input to the speaker output, was flat through the midrange and down only 0.05 dB at 100 and 10,000 Hz. It dropped to -0.35 dB at 20 Hz and -0.15 dB at 20,000 Hz. The response was identical in the normal and CD DIRECT modes. The tone controls had the usual sliding bass-turnover frequency (between approximately 200 and 500 Hz) and treble curves hinged at about 2,500 Hz. The RIAA phono equalization was accurate within ± 0.2 dB. The loudness compensation boosted both low and high frequencies, by about 7 and 5 dB, respectively, at reduced volume settings.

Comments

Both the electrical performance and the listening quality of the Marantz PM-74D were consistent with its price and position in the hi-fi marketplace. Its high power output, both continuous and dynamic, low distortion, and operating flexibility make it a reasonable choice for use in any high-quality audio system.

The styling of the PM-74D is conservative, with a welcome absence of flashy lights and circuit features that do not contribute to its sound quality. All the controls operated smoothly and positively, without electrical noises, and the gold markings contrast well with the black panel background. Our major objection to the design of the amplifier is that all of its control knobs are the same size and are placed in symmetrical groups that may require some user familiarity, and close examination, before they can be operated without conscious thought. Also, we would have preferred speaker connectors designed to accept dual banana plugs as well as wires.

These are, of course, trivial criticisms. What is important to emphasize is that the PM-74D is a powerful amplifier—especially when used with 4-ohm speakers—that has excellent short-term output capabilities, extremely low distortion, and good protection against accidental damage. And it looks as good as it measures!

Circle 141 on reader service card

FEATURES

- Automatic switching between Class A and Class B operation depending on output level required
- Automatic power-supply voltage increase for signal peaks
- High-level inputs for CD, tuner, TV/AUX1, TV/AUX2, two tape decks
- LED indicators for selected source
- Phono input switchable for moving-coil or moving-magnet cartridge
- CD/PHONO DIRECT switch to bypass unnecessary circuits for CD and phono sources
- Tape-copy switch for dubbing from deck 1 to deck 2 independently of program source being heard
- Separate bass and treble tone controls for each channel with tone-control bypass switch
- Switchable loudness compensation
- Mono/stereo switch
- Separate selector switches for two sets of speakers
- Gold-plated input jacks for CD and phono
- Three AC convenience outlets, one switched

LABORATORY MEASUREMENTS

1,000-Hz output power at clipping: 132 watts into 8 ohms, 196 watts into 4 ohms, 307 watts into 2 ohms

Clipping headroom (relative to rated output): 1.2 dB

Dynamic power output: 170 watts into 8 ohms, 300 watts into 4 ohms, 360 watts into 2 ohms

Dynamic headroom: 2.3 dB (8 ohms)

Harmonic distortion (THD + noise) at 1,000 Hz into 8 ohms: 1 watt, 0.0097%; 10 watts, 0.0033%; 100 watts, 0.0026%

Maximum distortion (20 to 20,000 Hz into 8 ohms): 0.0041% at 100 watts (20,000 Hz)

Sensitivity (for a 1-watt output

into 8 ohms): CD, 15 mV; MM phono, 0.285 mV; MC phono, 0.029 mV

Phono-input overload: 105 to 143 mV

A-weighted noise (referred to a 1-watt output): CD, -83 dB; MM phono, -80.6 dB; MC phono, -74 dB

Phono-input impedance: 47,000 ohms in parallel with 125 pF

RIAA equalization error: ± 0.2 dB from 20 to 20,000 Hz

Tone-control range: 100 Hz, ± 10 dB; 10,000 Hz, +9.5, -10.5 dB

Frequency response: -0.35 dB at 20 Hz, -0.05 dB at 100 and 10,000 Hz, -0.15 dB at 20,000 Hz

EXCELLENCE IN ANY LANGUAGE.

“...Absolute Spitzenklasse...”

Stereoplay Magazine, Germany

—Hans Ulrich-Fessler

“...Een Serieus Produkt...”

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—Hans Goddijn

“...Un Nuovo Reference Standard...”

Stereoplay Magazine, Italy

—Sandro Ruggieri

“...Superior Sound Quality...”

**Digital Audio & Compact Disc Review
Magazine, The United States**

—Ken Pohlmann



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AXIOM AX-5 SPEAKER

Julian Hirsch, Hirsch-Houck Laboratories

THE Canadian-made Axiom AX-5, which its manufacturer calls a Reference Monitor, is a three-way speaker system whose cabinet measures 30 inches high, 12 inches wide, and 11 inches deep. Sold in mirror-image pairs, the AX-5's are supplied with 6-inch-high pedestals that place the tweeters about 33 inches from the

floor. The pedestals are fitted with removable spikes to improve floor contact. The speakers weigh about 50 pounds each.

The 10-inch woofer of the AX-5 is mounted in the rear of the cabinet and has a port on the front panel. The woofer cone, which appears to be aluminum, has a compliant edge-surround that permits large cone

excursions. The high- and mid-frequency drivers are vertically aligned near the inside edge of the front panel. The midrange driver is a 3-inch dome, also with a compliant edge-surround, and the tweeter is a 1-inch dome radiator.

The cabinets of our test samples were finished in an attractive blond wood except for the rear panel, which is flat black, as are the front and rear grilles. The grilles are retained by plastic snaps, and even with the front grille removed, the speakers present an attractive appearance. Spring-clip connectors are recessed into the rear panel, and there are no external level controls. Price: \$1,249 a pair. Axiom, Dept. SR, Hwy. #60, Dwight, Ontario POA 1H0.

Lab Tests

The room response of the Axiom AX-5 was exceptionally flat and smooth, within ± 2 dB from 100 to 20,000 Hz. The close-miked measurements from the woofer cone and its port combined to produce a bass-response curve flat within ± 2 dB from 20 to 250 Hz. Together with the room curve, this resulted in a composite frequency response of ± 2.5 dB from 20 to 20,000 Hz.

Although this is most impressive performance, it must be remembered that our composite curve is merely an educated estimate of the speaker's potential and not an actual response that could be realized in *any* real room. Nevertheless, the AX-5 produced what may be the flattest response we have yet measured from a loudspeaker. (The rated frequency response is 32 to 22,000 Hz ± 2 dB.)

The system's sensitivity was about average, producing an 86-dB sound-pressure level (SPL) at 1 meter when it was driven by 2.83 volts of pink noise. The impedance dipped to a low of 2.5 ohms at 350 Hz and was less than 4 ohms from 70 to 750 Hz. Its maximum value of about 11 ohms was reached at 40 and 1,700 Hz. The bass distortion measured at the woofer cone was very low, just over 1 percent at 50 Hz, but the cone's output dropped rapidly below that frequency, which was the effective crossover between the woofer's cone and port. The dis-

TEST REPORTS

tortion at the port was much higher. The woofer was able to absorb a very high input, about 700 watts into its 3.5-ohm impedance at 100 Hz, before giving audible indications of cone "bottoming."

Our quasi-anechoic FFT measurements confirmed the smoothness and breadth of the AX-5's frequency response. The phase linearity of the system was excellent in the tweeter range, with a total variation of ± 0.1 millisecond (ms) from 2,500 to 20,000 Hz. The group delay increased linearly at the lower frequencies, reaching 1 ms at about 500 Hz.

Although only a couple of specifications on the AX-5 were provided by the manufacturer, we were able to estimate the approximate crossover frequencies from the measurements and the driver dimensions. The crossover from woofer to mid-range appeared to be at about 250 or 300 Hz, and the crossover to the tweeter was around 2,000 Hz.

Comments

The sound of the Axiom AX-5 was consistent with its measured performance. In other words, it was very smooth and uncolored, with no discernible emphasis or deficiency in any part of its operating frequency range. In spite of the very

low minimum impedance of the system, we had no problems driving it with any good amplifier. It was altogether listenable, comparing more than favorably with other speakers we had on hand. It is also a very handsome speaker.

We have some doubts about the efficacy of the AX-5's spiked pedestals, however. The spikes do not fasten rigidly to the pedestal bottom but are merely inserted in holes near its corners. Our listening room is carpeted, and the spikes were not long enough to penetrate to the concrete floor below. The result was a total negation of any possible benefit from the spikes; the pedestal made only a tenuous contact with the floor and in effect was merely resting on the carpet. Moreover, since the speaker cabinet actually rests on four small rubber discs on the top of the pedestal, we doubt the value of the mounting system even if the spikes were in simultaneous contact with a floor surface.

That is a minor matter, however, since the benefits of mounting spikes are debatable anyway. Basically, the Axiom AX-5 is a very smooth, fine-sounding speaker that looks as good as it sounds and should be compatible with almost any size room.

Circle 142 on reader service card



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JOOK LEUNG

HARMAN KARDON CITATION TWENTY-SIX DIGITAL AUDIO TAPE RECORDER

Craig Stark, Hirsch-Houck Laboratories

EARLIER this year, Harman Kardon announced to the press that it would start delivering production-line models of its Citation Twenty-Six digital audio tape (DAT) deck to U.S. dealers in June. STEREO REVIEW received an advance sample for test in anticipation that home DAT recorders might finally be available to U.S. consumers by the time this report is printed.

The Citation Twenty-Six uses direct-drive motors both for its capstan and for the drum that houses

the tiny helical-scan heads. The DAT cassettes, roughly half the size of the familiar analog audio cassettes, are inserted into a pop-out front drawer that operates like its counterpart in a CD player. The playback section uses quadruple oversampling and separate digital-to-analog (D/A) converter chip sets for each channel to simplify the output filtering and to maintain proper phase relationships between the channels. Three separate power supplies and charge-coupled (rather than wired) connections to the analog circuitry are em-

ployed to minimize induced digital noise. The deck records only at the standard DAT sampling rate of 48 kHz (precluding direct digital dubbing of CD's), but it can play tapes recorded with sampling rates of 48, 44.1, or 32 kHz.

The full-featured Harman Kardon deck includes such amenities as an infrared wireless remote control that duplicates its front-panel buttons, playback programming capabilities for up to thirty selections, and such program-locating facilities as cue and review, intro scan, and blank search. Users can add or change the START and STOP index markers in the tape's subcode field during recording or afterward; it is possible, for instance, to mark an inadvertently recorded radio commercial so that it will be skipped on subsequent playback. A multiple-option repeat facility is also provided.

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TEST REPORTS

The Citation Twenty-Six's large fluorescent display indicates tape position either in terms of counter units, elapsed time, or remaining time. Signal levels are monitored by two fourteen-segment-per-channel peak-holding indicators calibrated from -55 to 0 dB. From -39 to 0 dB the increments are marked every 3 dB, and the recommended recording range (-18 to -3 dB) is high-lighted in green.

In addition to the standard line-in and line-out jacks, both electrical and optical digital input and output connections are supplied, though no microphone facilities are provided. The playback level control adjusts the overall output as well as the signal at the headphone jack. Recording levels are set for both channels with a pair of large concentric

knobs, and a switch is provided for controlling the deck with an external timer.

Overall, the Citation Twenty-Six measures 17 $\frac{3}{8}$ x 4 $\frac{5}{8}$ x 12 $\frac{5}{8}$ inches, and it weighs 22 pounds. Price: around \$2,000. Harman International, Dept. SR, 240 Crossways Park W., Woodbury, NY 11797.

Lab Tests

Playback response of the Citation Twenty-Six, using the Sony TY-7551 test tape (the only one available yet), was almost perfectly flat for both channels, deviating by no more than +0.2, -0.1 dB throughout the 20 to 20,000-Hz range. Signal-to-noise ratios (S/N) were very high, though slightly lower than those of one or two other DAT decks we have measured. The crosstalk

measurements, generally excellent, were superb at 10,000 Hz. Our measurement of total harmonic distortion (THD) plus noise, a level of 0.03 percent, was slightly higher than specified, but that probably reflects Harman Kardon's use of the ultrasonic-cutoff filter called for in the Electronics Industries Association of Japan (EIAJ) standard for digital audio components.

We checked the overall record-playback response of the unit with a superb Audio Precision analysis system borrowed for the occasion. The results are shown in the accompanying box, and they closely mirror the playback-only figures. The AP instrument has such extraordinary analytic capacities that we were able to note some degree of nonlinearity in the analog-to-digital (A/D) conversion at levels below -44 dB, but as this is the first time we have made such a measurement its significance is hard to assess. A small amount of residual digital noise in the output was evident on an oscilloscope. There is, of course, no wow-and-flutter to be measured on a DAT machine, and its speed accuracy was exact. The input sensitivity and output level were entirely normal.

Comments

Although the currently available prerecorded DAT's are not to my musical taste, they certainly showed the spectacular playback performance of which the Citation Twenty-Six is capable. I was no less impressed when I listened to tapes we had recorded from CD's on other DAT machines.

Dubbing these same CD's on the Citation Twenty-Six did enable me to detect a few minor discrepancies. On horns and voices I noticed a slight loss of smoothness and a very small amount of background graininess, though I hasten to add that these imperfections were slight enough to pass unnoticed in any but the most intense, calibrated A/B comparisons. The overall caliber of the sound of the Harman Kardon Citation Twenty-Six was superb, as will be apparent to any audio enthusiast who has the pleasure of trying the deck for himself.

Circle 143 on reader service card

FEATURES

- Cue-and-review, intro-scan, and blank-search facilities
- Repeat of section, track, or entire tape
- Thirty-selection programmability
- User-controlled START, STOP, FRASE index markers
- Fourteen-segment-per-channel fluorescent record-level display
- Display of counter units, elapsed or remaining time
- Playback level control
- Front-panel headphone jack
- Electrical and optical digital inputs and outputs
- Infrared wireless remote control
- External-timer record/play facilities

LABORATORY MEASUREMENTS

Fast-forward/rewind times: R-120, 55 seconds; R-90, 42 seconds

Speed error: not measurable

Wow-and-flutter: not measurable

Line input for indicated 0 dB: 0.21 volt

Line output at indicated 0 dB: 2.0 volts

Playback performance (Sony TY-7551 test tape)

Frequency response (decibels):

	Left	Right
1,000 Hz	0.0	0.0
20 Hz	-0.1	-0.1
100 Hz	0.0	0.0
10,000 Hz	+0.1	+0.15
20,000 Hz	+0.15	+0.2

Signal-to-noise ratios (decibels):

	Left	Right
Unwtd.	87.6	86.9
A-wtd.	92.2	91.9
CCIR	92.4	92.4

Crosstalk (decibels):

	Left	Right
1,000 Hz	-86.7	-87.0
10,000 Hz	-85.1	-85.0
-60-dB level	-59.95	-60.15

Total harmonic distortion (THD) at 1,000 Hz: 0.03% (both channels)

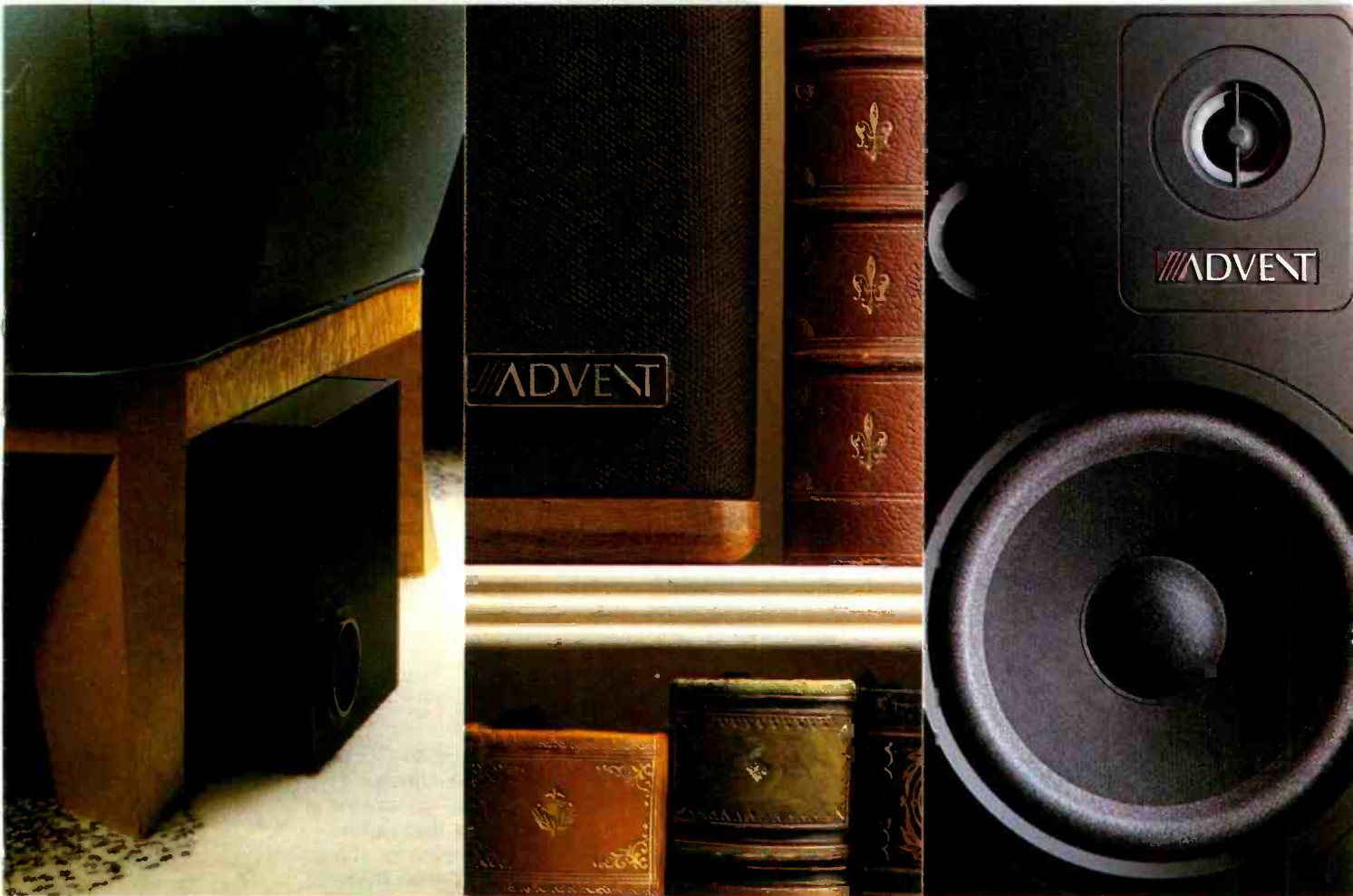
Record-playback performance
Frequency response (decibels):

	Left	Right
1,000 Hz	0.0	0.0
20 Hz	+0.14	+0.05
50 Hz	+0.09	+0.11
100 Hz	+0.09	+0.04
200 Hz	+0.09	+0.06
500 Hz	+0.05	+0.04
2,000 Hz	+0.03	-0.02
5,000 Hz	+0.03	+0.04
10,000 Hz	+0.03	+0.09
12,000 Hz	-0.15	+0.03
15,000 Hz	-0.11	+0.09
18,000 Hz	-0.38	-0.11
20,000 Hz	-0.59	-0.27

Signal-to-noise ratios (decibels):

	Left	Right
Unwtd.	85.6	86.1
A-wtd.	88.0	89.1
CCIR	87.9	85.7

Total harmonic distortion at 1,000 Hz: left, 0.02%; right, 0.022%



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To the American observer, Europe has always offered a curious blend of Old World and New Wave. The dynamics of that combination are rather neatly captured in a current ad for a brand of English gin, which shows a furlhelmed Buckingham Palace guard standing face to face with a mohawked punk rocker. Therein lies the charm of Europe for many—it's old and rich in tradition, but it's never stale.

One could say the same about European audio. Many of the European brands known to American audiophiles come from companies with a lengthy tradition of turning out fundamentally sound, not necessarily flashy products. In some ways the design of the equipment, while stylish, tends toward the conservative—as one British manufacturer told me, “We don't go in for flashiness or gimmicks; form always follows function.” And yet, at the same time, it seems there's always something new and interesting coming out of European factories.

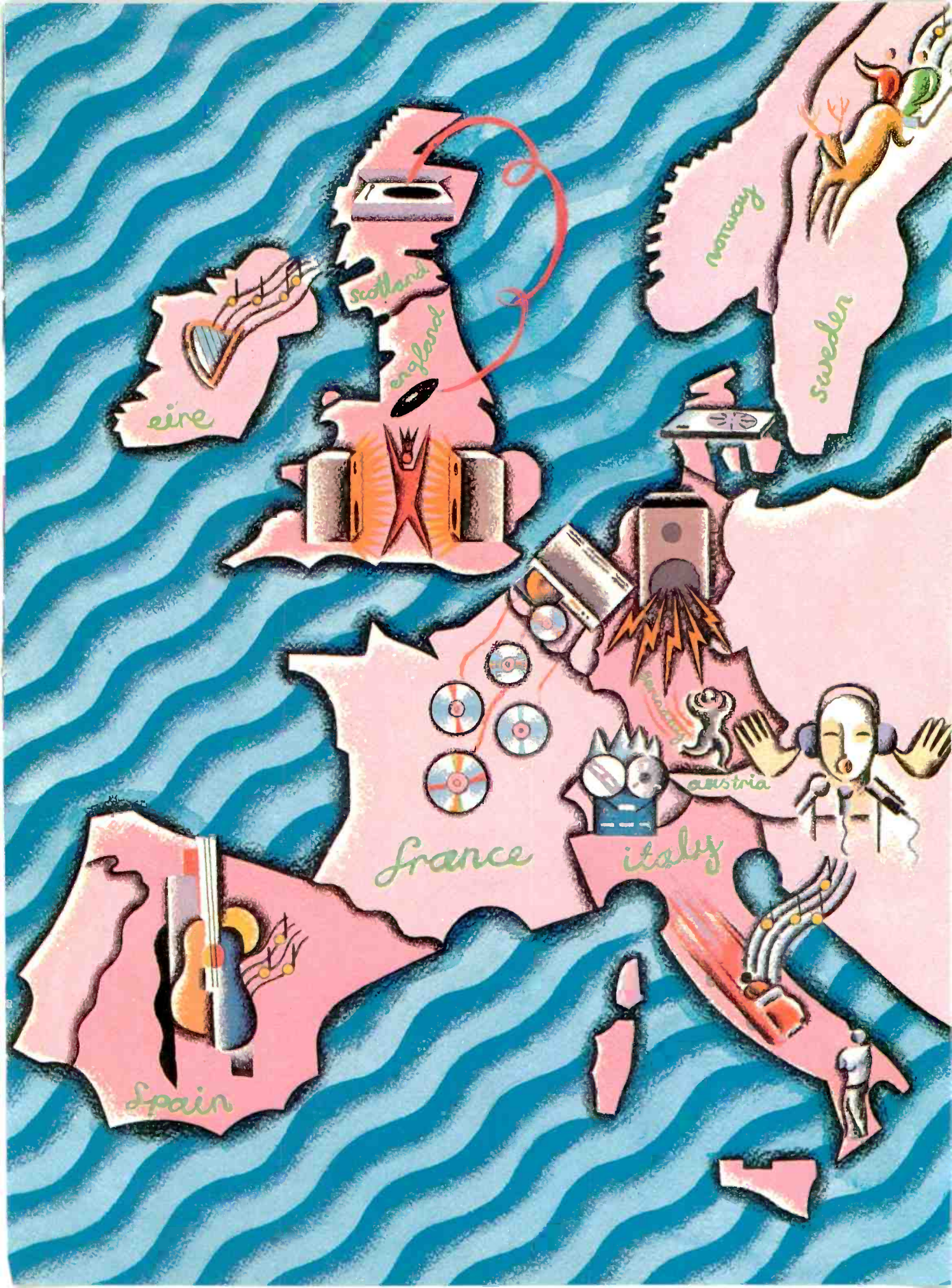
In Scotland, for example, Linn is making state-of-the-art turntables in its brand-new, robot-operated Glasgow factory. Traveling south to England, you find consistently innovative uses of speaker materials at the high-tech production facilities of B&W, KEF, and Celestion. Across

the English Channel, the Dutch company Philips—co-creator of the compact disc format—remains a world leader in digital audio/video product development. A competing giant, France's Thomson, is currently applying its technical prowess toward production of a recordable/erasable compact disc machine—a prototype was unveiled by the company in March. Germany's Blaupunkt is one of several companies working to develop and implement a revolutionary broadcast system called RDS, for Radio Data System, that will enable Europeans to utilize radio tuners in new ways. Grundig has re-entered the market with a whole new line of audio/video electronics, including a high-end series called Fine Arts. And in Denmark and Switzerland, Bang & Olufsen and Revox are producing some of the most user-friendly high-end multiroom audio systems ever seen.

In addition to the advances made by these well-known companies, more subtle product innovations consistently emerge from the thriving cottage industry of small audio manufacturers throughout Europe. In Germany alone there are a couple of hundred hi-fi manufacturers, many of them specializing in speakers. Great Britain, too, has more one-product audio manufacturers

BY WARREN BERGER

ILLUSTRATION BY DOLORIS FAIRMAN OF SHARP PRACTICE, U.K.

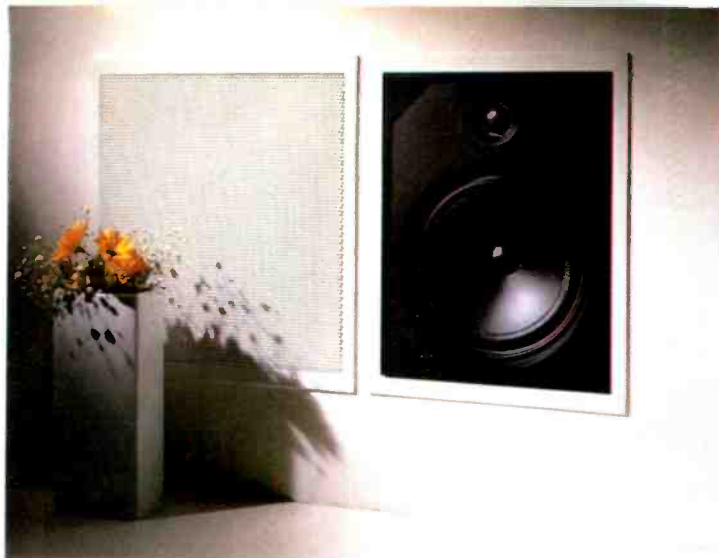


Two high-end speakers from MB Quart in Obrigheim, Germany: on the left is the Quart 3200, finished in black piano lacquer (\$9,000 a pair), and on the right is the Referenz, which stands 75 inches high and is finished in white piano lacquer (\$25,000 a pair).



The Jamo Art speaker (\$400 a pair) is a flat-panel system only 3½ inches deep that's designed to be hung on the wall. The Scandinavian-bred speaker can be used as a full-range system (40 to 20,000 Hz \pm 3 dB) or in combination with Jamo's SW-50 subwoofer as shown.





A full-range, in-wall loudspeaker, the KEF CR200F incorporates drivers made at KEF's Maidstone, Kent, facility in England. The 13 x 10-inch speaker is only 3½ inches deep.



than anyone can keep track of. While many of these companies do not ship to the U.S., their work is certainly appreciated at home.

"In the European audio market, there's an emphasis on subjective evaluation," said Chris Browder, executive vice president of B&W Loudspeakers' American division. "The European press, which is extremely influential in the audio market, isn't as concerned with specs and lab tests as with design and the way a piece of equipment sounds to the listener. This helps the cottage industry, because there's an appreciation of the small company's attention to detail."

Sound and Style

It's been argued for years that European preferences in sound quality differ overall from those of Japanese and American listeners, though that generalization is not easily supported. On the contrary, some observers note that you'll find sharper divisions within Europe and within the U.S.—one British speaker manufacturer, for example, draws parallels between the sonic tastes of Britons and New Englanders, adding that Germans are more like Californians in this respect.

It has also been suggested that differences in sound between European and American audio equipment stem more from the attitudes of the manufacturers than the preferences of consumers. "European engineering tends to take a more purist approach," said Ortofon's president, Kevin Byrne. "The engineering is less marketing-driven."

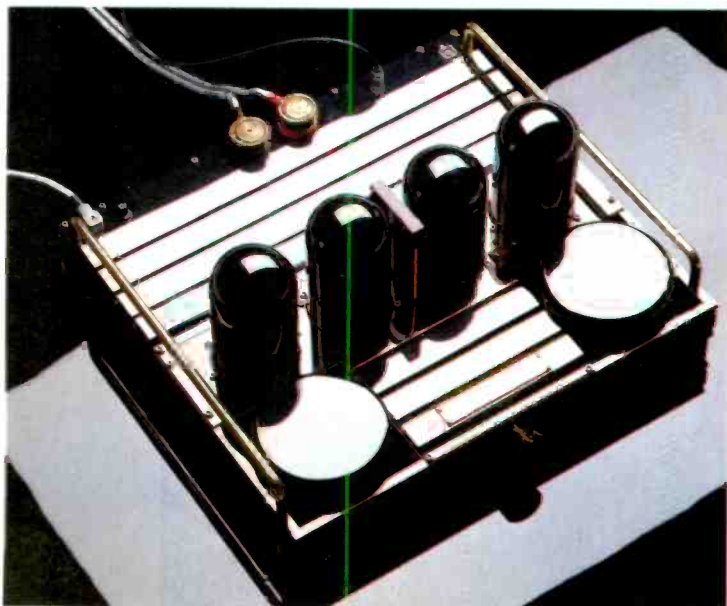
That may be so, but engineers clearly do take note of the European life style in designing equipment. For instance, because European listening environments tend to be smaller than in the U.S., most equipment is smaller and less powerful. Americans are sometimes amazed to see Europeans use shoe-box-size (but extremely high-quality) speakers in their living-room hi-fi systems.

Conversely, European audio manufacturers have, at times, been



Tandberg's TPT 3001A analog FM tuner comes from Norway and employs eight tuned circuits to prevent out-of-band distortions. Price: \$2,000.

Hamburg's Backes and Müller uses a Plexiglas water tank (not shown) to cool the front end of this 80-watt Class A mono power amplifier. Price: If you have to ask...





Europeans have not lost interest in open-reel tape decks, and Revox, of Regensdorf, Switzerland, makes the B77 Mark II to satisfy their needs. Price: \$2,450.



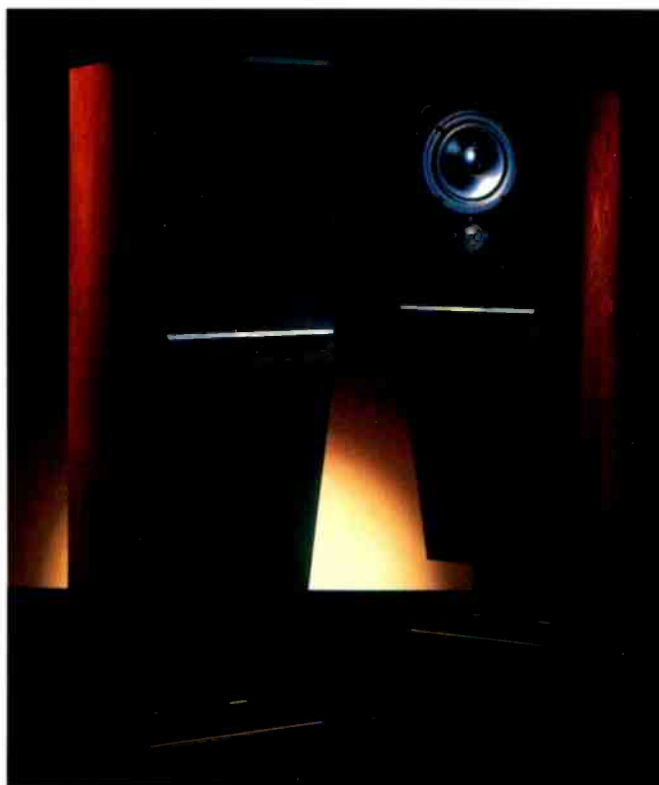
The B&W Matrix 801 Series II features construction technology said to eliminate enclosure radiation, sixth-order Butterworth bass alignment, and a Kevlar midrange. Price: \$5,000 a pair.



The a/d/s/ CCA tuner/preamp, designed in Germany, has the same control functions as the microprocessor-based a/d/s/ R4 receiver. Price: \$1,000.



Linn's modern, robot-controlled factory in Glasgow, Scotland, is responsible for the Nexus loudspeaker, which retails for \$1,195 a pair, including matching stands.



Mordaunt-Short, based in England, uses special energy-absorbing seals in its System 442 to isolate the drivers from the cabinet and to prevent transmission of unwanted vibrations in the form of "cabinet coloration."



slightly puzzled by the American love affair with large and powerful audio equipment. Peter Wellikoff, executive vice president of Celestion Industries and U.S. distributor of the British Cambridge Audio component line, said he's experienced that American "love of power" firsthand. "A good example is Cambridge Audio's 40-watt integrated amplifier—it's a real audiophile product that is regarded highly in Europe. In the U.S., though, people turn up their noses as soon as they hear it's only 40 watts."

Europeans tend to like their components and speakers sleek in appearance as well as in size and power consumption. Cosmetics, therefore, take on great importance with European audio manufacturers. Magnat, Thorens, and Canton have demonstrated that Germany possesses a certain artistry when it comes to styling audio components, but the leader in this area is clearly Denmark's Bang & Olufsen, whose equipment has been displayed at the Museum of Modern Art in New York. S. K. Pramanik, manager of product technology at B&O, said that his company's products reflect "a difference in priorities. In Europe, style is important in everything, including audio equipment. Good design in equipment doesn't really cost more; it just requires that you put some effort and thought into it."

User-Friendliness

B&O recognizes, however, that looks aren't everything: In recent years the company has put an increasing emphasis on product versatility and convenience features, as has Switzerland's Revox. B&O's Beolink audio system is designed to work in every room in the house via remote control. Revox's own bidirectional-control, multiroom system is slated for introduction this year.

Reynaud Delapraz, a sales director at Revox headquarters in Regensdorf, said the company's current emphasis on convenience and simplicity represents a change in di-

rection: "That's what our customers are looking for now. To a certain extent, the issue of sonic quality has become subjective. . . . What matters now is convenience." A similar view was voiced by Pramanik of B&O: "Sound quality is a given from our standpoint," he said. "We are now competing on user-friendliness."

Some would say that such marketing-oriented talk sounds downright American, and, indeed, these new approaches may signal a change in attitude in at least some parts of the Continent. Many European audio products in the past have been known more for their sonic detail than for their user-friendliness. Even today, there's a tendency to dismiss convenience features—ask a European audio manufacturer about CD changers and he's likely to change the subject to a discussion of something European companies consider really *important*, such as oversampling.

"While companies like Pioneer and Sony are putting more emphasis on features such as CD changers, companies like Cambridge continue to strive for perfection in sound," explained Wellikoff of Celestion. "They've gone from 16-bit technology with sixteen-times oversampling to new units with 32-bit technology and sixteen-times oversampling. That represents a basic difference in priorities when it comes to technology."

Digital Developments

While Cambridge Audio, Tandberg, Mission, Meridian, and other makers of CD players for the European cognoscenti continue to fine-tune existing CD technology, at least two European companies are aiming at technological breakthroughs. Philips, which produces much of the circuitry used by European makers of CD players, continues to take the lead in digital audio.

Almost from the outset, Philips CD technology has featured advanced digital filtering and oversampling. "Other manufacturers have shifted in our direction, but

we're continuing to refine our systems," said Paul Fredrickson, director of merchandising in the Philips Consumer Electronics division of North American Philips. Philips started with 14-bit, four-times oversampling in its early machines, and it is now introducing top-of-the-line players that, according to Fredrickson, achieve resolution of 15½ bits or better. Other ongoing projects in the Philips labs include research into analog-to-digital converters using oversampling and digital filtering and work on a recordable CD.

Meanwhile, Thomson, the French company that manufactures a number of popular European brands and now owns the American GE and RCA consumer electronics lines as well, is also looking to the future. At a recent audio fair in Paris, Thomson showed a nonworking mock-up of a CD machine with erasable/recordable two-sided discs that hold 45 minutes of audio per side. (The idea is similar to the THOR-CD system that America's Tandy recently announced it has developed, except that Tandy's machine will use single-sided discs.) Thomson said that the product should be introduced sometime in the next two years.

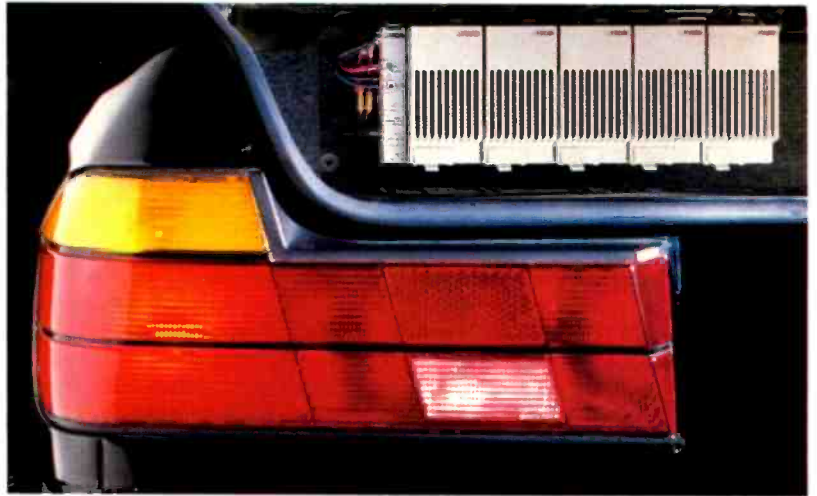
The Thomson recordable-CD prototype has sparked considerable interest in the European audio market, which up to this point has turned a cold shoulder to digital audio tape. Though Japanese-made DAT players have been available in limited quantity in Europe for some time (for prices equivalent to about \$2,000), customers are apparently harder to come by than the equipment. As Revox's Delapraz explained, "When the customer walks in and sees that a store has DAT, there's a lot of excitement. Then he sees the price of the machine, and learns that blank tape is very expensive, and finds out that there's no prerecorded material available—pretty soon, he's lost interest."

Traditional Equipment

Meanwhile, analog cassette decks continue to be a thriving category



From Denmark comes the Ortofon X5-MC, a moving-coil cartridge fitted with an FG II nude diamond stylus. Rated frequency response is 20 to 45,000 Hz ± 4 , -1.5 db. Price: \$300.



Canton takes a novel approach to car stereo with its U.S.-made Mainframe system. Shown is the MF5 chassis (\$325), which can house up to five 50-watt M50 mono amplifier modules (\$300 each).

Well known for its speakers, Magnat of West Germany has introduced its first electronic component, the Digatec 505 car CD tuner.



The Dual CS 7000 is a belt-driven turntable with a floating-subchassis design and a 24-carat-gold finish on all metal parts. Price: \$750.

Blaupunkt's top car products include the CDP 05 CD player (\$550), the SC-XN-A electronic crossover (\$290), and the stalk-mounted Dallas SQM 88 tuner (\$370).





for European manufacturers. B&O has been a leader in the field since the company introduced its HX Pro headroom-extension circuitry, which was subsequently adopted by Dolby labs. Revox and Norway's Tandberg have also been at the forefront of high-end cassette-deck technology.

Tandberg, renowned for tape performance innovations such as the Dyneq (dynamic equalization) circuit, has gone through some corporate reshuffling in the last year and is now operating out of a new factory and shipping new products. Revox has demonstrated its strength not only in cassette decks but also in open-reel tape decks, in which the company still does a healthy business in Europe—another example of how the old traditions tend to stick around.

Traditionalism may also explain the continuing stability of the turntable market in Europe. No one is claiming that turntables are coming back, but in some parts of the Continent—Great Britain and Germany in particular—turntable manufac-

turers such as Linn, Ariston, Dual, and Thorens are more than holding their own. Some feel that the resounding success of Linn's LP12 turntable has given the whole business a shot in the arm.

But Ortofon's Byrne, who distributes Dual turntables in the U.S., noted that the continuing success of turntables in Europe is more attributable to the hands-on attitude of European audiophiles, who "love to tinker with the equipment—you see a lot of playing with the weight on the tonearm to achieve just the right sound."

The European speaker market is also thriving, but the competition is stiff. Many of the European brands that U.S. consumers are familiar with come from Great Britain, among them KEF, B&W, Celestion, Quad, Wharfedale, and Monitor Audio. The proliferation of top speaker companies has made Britain the birthplace of many advances in transducer technology. Those developments were certainly aided by the use of computers in speaker design, a movement led by KEF in

the early 1970's. B&W and Celestion, meanwhile, blazed another trail by using laser interferometry to test driver performance.

German speaker innovation, led by a/d/s/, Magnat, MB Quart, and Canton, has paralleled that of the British companies, though the flavor of German speakers has always been considered distinct. "A typical German loudspeaker used to be very bright, very forward, didn't go particularly low, but had a very high-Q bass," said Larry Daywitt, vice president of marketing for a/d/s/ in America. "These days, our speakers tend to be very well mannered at the top end and extremely smooth, with a neutral low end. I think, generally speaking, that the German, British, and American speaker sounds are coming together."

Germany has been at the forefront of headphone technology in Europe, with Sennheiser and Beyer helping to pioneer lightweight, top-quality phones. Sennheiser was the first to introduce infrared cordless headphones as well. In Austria,

EUROPEAN AUDIO FAIRS



IT'S an audio enthusiast's dream come true—a place where the best and newest audio technology is all around, and where the visitor can play with knobs and compare systems without being subjected to a salesman's pitch. Where is it? At any one of the dozen or so major audio fairs around Europe. Berlin, Düsseldorf, Milan, Zurich, Amsterdam, and Paris are the sites of the larger shows, but there are smaller ones throughout the Continent.

While major U.S. audio exhibits such as the Summer and Winter Consumer Electronics Shows are business-only affairs that are closed to the public, European audio fairs are designed primarily with the public in mind. They come complete with family entertainment and a carnival atmosphere.

"At Berlin, for example, the setup is ideal," said Bob Angus, a U.S.-based audio writer who covers the European

fairs for American trade publications.

"An audiophile who's traveling with his family to the show will find that the family can go off and enjoy the oom-pah bands while he goes around and looks at the equipment. And there's plenty of equipment to see."

Indeed, the Berlin Audio/Video Fair is known for introducing industry "firsts," all the way back to the first demonstration of magnetic tape recording. Other shows around Europe also frequently break news: Paris's Festival de Son last spring featured the introduction of Thomson's prototype compact disc recorder.

The Paris show, the Nowea show in Düsseldorf, and the Ferato show in Amsterdam each tend to attract somewhere between 100,000 and 200,000 people. By far the biggest drawing card in Europe is the Berlin show, held every other summer, which takes in about a half-million. "People come from all over Europe to see it," said Blaupunkt's Joerg Traumann.

At Berlin, top European

manufacturers erect large pavilions with open areas and sound rooms. There is no selling to the public at the audio fairs, though manufacturers do conduct business with retailers during the course of the event. Still, as one manufacturer noted, perhaps the most important business of the show involves the exchange of ideas with consumers.

"An audio show is very beneficial to both consumer and manufacturer," said Reynaud Delapraz of Revox. "Consumers can go right to the source if they have questions about equipment, and they can look and touch and listen as much as they want. From our standpoint, it represents the best time to get direct feedback from consumers. It keeps us in touch with what people really want. Sometimes we show something new expecting a great reaction, and we find that people don't care much about it. Or, on the other hand, we might show something that we're not sure about and we see people get really excited. A show can be a real eye-opener."



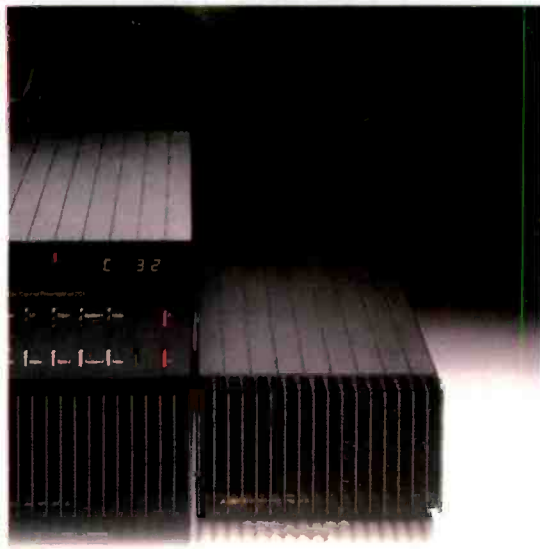
Meridian's sleek Model 201 preamp (\$1,150) and Model 205 dual-mono power amplifier (\$925) anchor the company's modular hi-fi system, which also includes a two-piece CD player and a tuner.

Eindhoven, Holland, is the home of Philips and its CD 960 compact disc player, which has dual 16-bit D/A converters, four independent power supplies, and a single-beam laser. Price: \$949.



The Precision Series from England's Wharfedale begins with the Model 504.2, a two-way speaker with a 4-inch woofer and an aluminum-dome tweeter. Price: \$660 a pair.





Rotel's RCD-820BX2 CD player is made in Milton Keynes, England, and features dual 16-bit D/A converters and four-times oversampling with digital filtering.

England's Cambridge Audio makes the CD2, a 16-bit CD player with sixteen-times oversampling, digital outputs, and remote control.

PHOTOS BY JOOK LEUNG (EXCEPT MERIDIAN)



AKG has also been a leader in headphone research.

Autosound

Another German strong suit is autosound. Germans buy close to \$1 billion worth of car stereo equipment a year, making Germany by far the largest European market, and much of that money is corralled by Blaupunkt. The manufacturer's influence extends beyond its own borders, however: Together with Philips, Blaupunkt controls a large share of the overall European autosound market. Still, sometimes Blaupunkt's technology seems designed specifically for German drivers, who often exceed 100 miles per hour on the country's autobahns.

The company has, for example, devoted considerable attention to the ergonomic design of car stereo equipment, including wireless remote-control systems and stalk-mounted tuners that allow the driver to keep his eyes on the road. A current Blaupunkt laboratory project involves voice-activated car stereo: According to Joerg Traumann, manager of market development at Blaupunkt, the experimental units respond to such verbal commands as "seek up" and "seek down." The company is still trying to iron out some problems, including the product's inability to recognize the user's voice when it has been altered slightly—by a cold, for instance.

Blaupunkt has also been heavily involved in developing equipment for use with the new European Radio Data System (RDS), a broadcast system that will enable tuners to pick up digital call letters broadcast by each station—RDS tuners can identify a station and show up to eight characters on their displays. To get Radio London, for example, the user pushes the tuner's search button and waits until R. LONDON appears. As the system is developed further, RDS is expected to enable the user to identify and gain immediate access to specific *types* of stations—for instance, only jazz or pop or talk stations. And the system

could also provide immediate access to information such as traffic reports.

So far, Great Britain and Germany are moving ahead most quickly with RDS (England began using the system earlier this year). Implementation requires radio stations to install decoders and encoders, and car radios must also be equipped with RDS decoders and associated circuitry. Blaupunkt has already developed several autosound tuners with RDS capability, and Joerg Traumann said he expects other manufacturers, including makers of home tuners, to follow suit. If there's an obstacle to setting up RDS, he said, it comes in the form of privately owned radio stations that are unwilling or unable to buy RDS equipment. Since the U.S. has more privately owned stations than European countries do, Traumann thinks it would be difficult to implement RDS in the U.S.

The Appeal of Quality

While RDS may not make it to these shores in the immediate future, European audio technology in general should continue to proliferate in the U.S. The demand for European-made products has remained strong here even though some European manufacturers have had to increase prices to offset currency-exchange losses. The price hikes haven't been too significant, however: You can usually buy European audio products here at prices reasonably close to what Europeans are paying. In many cases, the manufacturers are cutting their profit margins on U.S. sales to hold their market shares.


Some European manufacturers, such as Canton, are now addressing the exchange-rate problem by attempting to do more of their manufacturing in the U.S. That, certainly, is a welcome development, and it probably won't diminish the "exotic" appeal of European-designed equipment. Whether the units are assembled here or abroad, those enduring European traditions should keep the products distinctive. □

Graham Parker

"I'm just trying to make a living. I'm trying to express myself naturally and go with the muse."

BY RON GIVENS





It didn't seem appropriate that Graham Parker should be sitting quite so comfortably there in the anonymously furnished conference room at RCA Records. Since he first conquered America's rock critics in 1976 with two phenomenally acclaimed records of bristling pop, Parker has had a bumpy corporate ride. Over the course of ten records, he's frequently had acrimonious relations with his record labels. But sitting with me in that bland office, he looked about as comfortable as he probably ever gets.

Maybe it's because RCA, his new record company—and his fifth in America—has given him some creative freedom. "The record was done on very strict terms," Parker said firmly of "The Mona Lisa's Sister," his first set for RCA. "And they were my terms. And I've stuck with them."

Parker was wearing what seems to be his standard outfit—at least, it's the type of clothes he's worn for nearly all his album-cover photos: a blazer (black seersucker, with thin gold figures), a sweatshirt (cartoony illustrations of sushi) over a cotton shirt, blue jeans, white running shoes, and, of course, sunglasses. Through the course of the interview, he occasionally pulled out cigarette papers and loose tobacco, rolled a skinny cigarette, and smoked it. He appeared to be relaxed.

But you have to wonder, especially after what record companies have done to Parker and what he's done to record companies. His first American label, Mercury, failed to promote his records at all, according to Parker. So when he left Mercury for Arista, he wrote a song called *Mercury Poisoning* in which he blamed his old label for keeping him "the best-kept secret in the West."

For Arista he recorded the much-praised "Squeezing Out Sparks" and three other LP's, but, he said, "We didn't part on very good terms." Parker does have some nice things to say about his third American label, Elektra, for which he recorded "Steady Nerves" in 1985, but that record didn't sell, and the label dropped him soon after it came out.

But at least Elektra put something out. Parker was signed to Atlantic for more than a year, and wrote two batches of songs, before they de-

cidied in 1987 *not* to send him into a studio. "They weren't interested in selling 100,000 copies or 200,000," he told me. "Ahmet [Ertegun, head of Atlantic] was quite straight with me. 'We need to sell a million.'" Although Parker had submitted willingly to the demands of a variety of producers in the past, this time he didn't want to compromise in any way. "An Atlantic A&R [artists and repertoire] guy said, 'Well, you've got to have that big Phil Collins snare-drum sound.' I didn't want a great big snare-drum sound. I wanted a little tiny snare-drum sound and a great big Graham Parker song sound."

Which is what he got, and which is what RCA liked enough to release, as is, in "The Mona Lisa's Sister." In a sense, the new record is a throwback to Parker's work with his old back-up band, the Rumour. "The Rumour records were always a bit scruffy," he said, and he wanted "The Mona Lisa's Sister" to be "rawer" than the more heavily produced work he's done recently. He and Brinsley Schwarz, formerly the lead guitarist for the Rumour, who co-produced "Mona Lisa," got the sound they wanted by working closely with Parker's demos.


"We'd rehearse the drummer and me on guitar and then record it like that," said Parker. "Then I'd go straight back into the booth to sing the vocals." In nearly all of the songs, other instruments were overdubbed at a later point. Parker also carefully avoided the currently popular sound saturation of synthesizers, choosing instead to go with a Hammond organ and other "basically organic keyboards." As a result, the record has a warm, soulful sound, and Parker sounds more like the singer-songwriter he's always been at the core of his r-&-b stylings.

Most of the songs have a quiet, unforced quality. Parker has written a lovely reggae number in *The Girl Isn't Ready*, and he does a straightforward cover of Sam Cooke's *Cupid*. The album still rocks out when it should, but without bombast.

While the arrangements are beautiful and the performances are energetic, Parker doesn't let anything get in the way of his original artistic vision. The songs haven't been produced; they've been revealed. And what songs! *Don't Let It Break You Down* creates a wickedly sarcastic effect through its combination of a bouncy tune, descriptions of disas-

ters ("And the aeroplanes get high-jacked/And all the Americans get killed"), and a chorus of the title advice. *I'm Just Your Man* is in the tradition of r-&-b ballads—a humble, heartfelt declaration of love tinged with sadness. And *Success* is quietly laced with bile as Parker sings about the profit motif that has characterized his affiliations with record companies.

Attitudes like that got Parker a reputation as an angry young man. At the age of twenty-three, living with his parents in the suburbs of London, with no prospects, he channeled his frustration into songwriting—and had immediate success. "It was great," he recalled. "It was everything coming together." Now thirty-seven, and himself the father of a three-year-old girl, Parker can still get steamed, but he can also be utterly mellow. In *The Girl Isn't Ready* he looks forward, with some trepidation, to the time when his daughter will discover romance. And he shows some self-deprecating humor when he sings, "We think that her boyfriend's/Like something from a zoo."



In his younger days, Parker had more of a competitive streak, and he tried hard to make commercial records. Now, he says, "I'm over that. I'm just trying to make a living. I'm trying to express myself naturally and go with the muse. It sounds corny, but that's basically it." His experience with Atlantic had undermined his confidence in his ability to do just that.

"Sometimes I think I'm a really simple guy from the suburbs of England, and I've been getting away with it. In fact, that made the last two years hard, because suddenly I wasn't getting away with it any more. I could have disappeared down a dark hole. But now I've written these songs, and I'm rolling again." □

"The Mona Lisa's Sister"

Graham Parker (vocals, acoustic guitar); Brinsley Schwarz (backing vocals, electric guitar, percussion); Andrew Bodnar (bass guitar); James Hallawell (keyboards); Terry Williams (drums); other musicians. *Don't Let It Break You Down*; *Under the Mask of Happiness*; *Back in Time*; *I'm Just Your Man*; *OK Hieronymus*; *Get Started*; *Start a Fire*; *The Girl Isn't Ready*; *Blue Highways*; *Success*; *I Don't Know*; *Cupid*. RCA 8316-1-R, © 8316-4-R, © 8316-2-R (38 min).

MAGIC SPACE

Digital sound processors from Lexicon and Yamaha can give your listening room you-are-there acoustics.

■ BY E. BRAD MEYER ■



It has been several years since we were promised that audio would be utterly transformed by digital technology. The original plan was to keep the audio in digital form from the recording studio all the way to the power amplifier so that the functions of our analog preamplifiers, equalizers, signal processors, and tape recorders would all be performed in the digital domain. While this goal will soon be technically attainable, it is politically complex, as the recent battle over digital audio tape (DAT) decks has shown.

In the meantime, home digital audio processing has taken a big step forward with the introduction of the Lexicon CP-1 Digital Audio Environment Processor and the Yamaha DSP-3000 Digital Sound Field Processor, along with its companion product, Yamaha's DSR-100 Pro surround-sound decoder.

The compact disc has clearly demonstrated the benefits of digital encoding for the recording and playback of music. The main difficulty in digital audio lies in converting the signal from analog to digital (A/D) and from digital back to analog (D/A). Once the original analog signal has been converted into a string of ones and zeroes, the CD can—and, in practice, actually *does*—deliver a perfect replica of those numbers to the player's decoding circuits.

That's the essence of digital audio: Once you generate the bits, you can play them back at any time with *no* loss of quality. A CD player—or a PCM processor with a VCR, or a DAT machine—is really a digital delay device in which the time between A/D and D/A conversion may be a matter of weeks or months. The delay can also be much shorter, as in the simple 20-millisecond digital delay lines found in home movie surround processors.

■
E. Brad Meyer, a regular contributor to STEREO REVIEW, wrote the operating manual for the Lexicon CP-1.







LEXICON CP-1 PROGRAMS

PGM	NAME	TYPE	MODE
	PANORAMA		
1	NORMAL	Expander	stereo
2	WIDE	Expander	stereo
3	BINAURAL	Expander	stereo
	AMBIENCE		
4	SMALL	Ambience	stereo
5	MEDIUM	Ambience	stereo
6	LARGE	Ambience	stereo
	REVERBERATION		
7	SMALL	Reverb	stereo
8	MEDIUM	Reverb	stereo
9	LARGE	Reverb	stereo
	SURROUND		
10	MONO LOGIC	Ambience	vocal/nonvocal
11	STEREO LOGIC	Surround	L + R, L - R
12	PRO LOGIC	Surround	L + R, L - R

data constitutes technological overkill. It's like typing a letter into a powerful word processor and then printing it out just as you typed it, without allowing yourself to correct errors or edit the text. The digital words that represent the music are really just binary data, and you can use a computer to do very fast arithmetical calculations on them. To raise the sound level, you simply multiply every number by a constant; to lower it, you divide. Instead of settling for one simple replica of the original signal, you can generate a whole family of them, each with its own time delay and frequency response.

This last idea is interesting because it describes, in a general way, what actually happens in a concert hall or other performing space. At a live concert the first sound to reach the listener's ears comes directly from the source, followed within a few milliseconds by reflections from the floor and walls of the stage enclosure, then from the side walls and ceiling of the auditorium, then from its rear walls, and then from multiple reflections as the sound reverberates and dies out.

To duplicate the full effect of the many reflections, from all directions, in a concert hall would require many channels of digital processing and as many amplifiers and speakers. Limitations of cost and space make eight- or twelve-channel systems impractical. How many channels are required? And where should the speakers go? These are complicated questions, and the designers of the Yamaha and Lexicon processors arrived at significantly different answers.

The Hardware

Both the Yamaha DSP-3000 and the Lexicon CP-1 are meant to go between the preamplifier and the power amplifier(s) of a component audio/video system. They can also be connected in the tape-monitor loop of a receiver, but only at a sacrifice of convenience, sound quality, or both. Those who don't own separates are unlikely to spring for these "accessories" anyway: The suggested retail price for the Yamaha DSP-3000 is \$1,899, the companion DSR-100 costs \$599, and the Lexicon CP-1 lists for \$1,200.

For added versatility—and in

case the processor displaces an existing tape recorder—both units have their own tape input and output jacks. The Lexicon is switchable to allow recording of some of the processor's effects on tape, while the Yamaha treats the tape as just another signal source.

The Yamaha DSP-3000 has a video circuit through which it can superimpose information about its programs on your TV screen. It also has a digital input compatible with the AES/EBU standard for connection to a properly equipped CD player, PCM processor, or DAT deck.

The DSP-3000 and the CP-1 are both line-level devices. They accept the stereo outputs of a preamplifier and send line-level signals to your system's main (front) channels as well as from two to eight additional power amplifiers. Both can generate calibration signals to help you balance all the channels in your system. The Lexicon has individual output-level controls, while the Yamaha requires external controls on the power amplifiers.

Each unit comes with a remote control—the Lexicon's has twenty-six buttons, the Yamaha's forty-one—without which you cannot operate it. These remotes adjust volume and balance for the main channels and all the effect channels in the entire system. Both units can switch off separately either the main outputs or the effect outputs, so you can easily hear what the processor is doing. The Yamaha's remote can select an input or switch the AC power, including its auxiliary outlet, while the Lexicon offers these functions only on the main unit (which has no auxiliary AC socket).

Speaker Placement

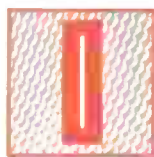
Both these devices are designed to work with additional amplifiers and loudspeakers. Why do these companies' marketing departments think anyone will want to install extra channels? Doesn't anyone remember the quadraphonic debacle of the mid-Seventies? Why should people be more willing to buy extra channels now than they were then?

One answer is that there is a big potential market for multichannel sound that didn't exist a decade ago: home video. People like hearing Dolby Stereo movies in theaters, and video manufacturers are increasingly focused on duplicating the theater experience at home, including stereophonic surround

sound. When a film is transferred to videotape or videodisc, the soundtracks contain the same Dolby Stereo channels encoded into the two-channel theater print.

A Dolby Stereo movie soundtrack begins as a four-channel recording. The main music and sound-effects tracks are transferred directly to the left and right channels on the film. The third channel, the center, contains all the dialogue. A few movies in the Fifties were mixed with "panned dialogue," in which the actors' voices move back and forth with their images, but, with occasional exceptions, nowadays the voices are all dead center. The center channel is mixed equally, in phase, into the two stereo channels on the print.

The fourth channel is called the surround, and it contains reverberation, ambient sounds (crickets chirping, wind noises, and so on), and special effects (space ships flying overhead). This channel is also mixed equally into the two stereo tracks, but *out* of phase, so that for a positive voltage in one channel there is an equal negative one in the other.



In the theater, the right, left, and center front speakers are all behind the screen while the surround speakers are placed on the side and rear walls. At home such a setup would look like Figure 1 on the next page, with a small center speaker as close to the screen as possible, two main stereo speakers flanking it near the front wall, and two or more surround speakers at the sides or rear. If you remember quad, you will see that Figure 1 doesn't look much like an old quadraphonic setup. And that indicates the biggest problem faced by anyone designing a multipurpose surround processor like the Yamaha and Lexicon units: the basic conflict between movie sound and music.

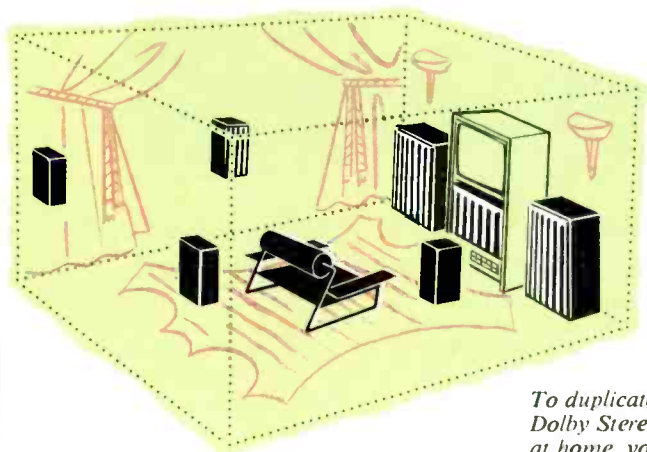
For films, the center channel is crucial, and all the speakers not located on the front wall of the room are fed from a single output. For music, the requirements are different. The music lover starts with two front speakers that are presumably as large and high in quality as he or she can afford. Trying to create the illusion of being in a different acoustic space than your listening room with a single reverberation channel fed to several speakers



YAMAHA DSP-3000 PROGRAMS

PGM	NAME	TYPE	MODE
1	CONCERT HALL 1		
	HALL A IN EUROPE	Ambience	L + R
	HALL B IN EUROPE	Ambience	L + R
2	CONCERT HALL 2		
	HALL C IN EUROPE	Ambience	L + R
	HALL D IN EUROPE	Ambience	L + R
3	CONCERT HALL 3		
	HALL E IN EUROPE	Ambience	L + R
	HALL F IN EUROPE	Ambience	L + R
4	CONCERT HALL 4		
	HALL G IN U.S.A.	Ambience	L + R
	HALL H IN U.S.A.	Ambience	L + R
5	CONCERT HALL 5		
	LIVE CONCERT A	Ambience	L + R
	LIVE CONCERT B	Ambience	stereo
6	OPERA HOUSE		
	BALCONY	Ambience	L + R
	MEZZANINE	Ambience	L + R
7	CATHEDRAL	Reverb	L + R
8	CHURCH	Reverb	L + R
9	JAZZ CLUB 1		
	VILLAGE VANGUARD	Ambience	L + R
	VILLAGE GATE	Ambience	L + R
10	JAZZ CLUB 2		
	CELLAR CLUB	Ambience	L + R
	CABARET	Ambience	L + R
11	CHAMBER	Reverb	L + R
12	ROCK CONCERT		
	THE ROXY THEATRE	Ambience	L + R
	ARENA	Ambience	L + R
13	DISCO		
	NEW YORK	Ambience	L + R
	TOKYO	Ambience	L + R
14	PAVILION	Reverb	L + R
15	STADIUM		
	ANAHEIM STADIUM	Ambience	L + R
	BOWL	Ambience	L + R
16	PRESENCE		
	PATTERN A	Ambience	stereo
	PATTERN B	Ambience	stereo
17	SURROUND		
	TYPE A	Surround	L - R
	TYPE B	Surround	L - R
18	MOVIE THEATER 1		
	ADVENTURE	Ambience	stereo
	STANDARD	Ambience	stereo
19	MOVIE THEATER 2		
	MUSICAL	Ambience	stereo
	CLASSIC	Ambience	stereo
20	DOLBY SURROUND	Surround	L - R

SPEAKER PLACEMENT



To duplicate the full effect of a Dolby Stereo movie soundtrack at home, you would need seven speakers—main, center, side, and rear—as in Figure 1.

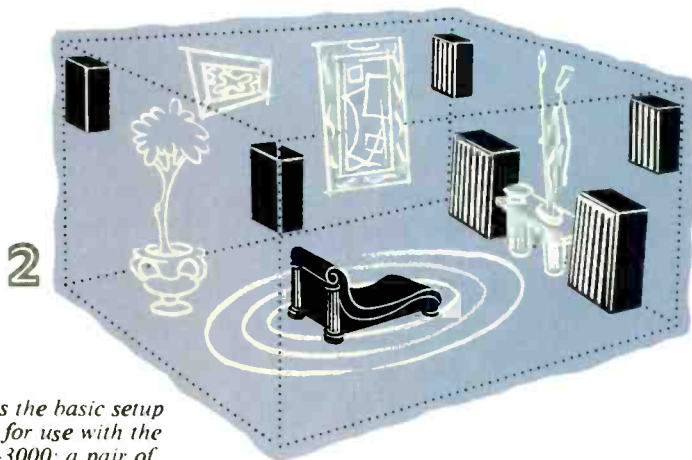
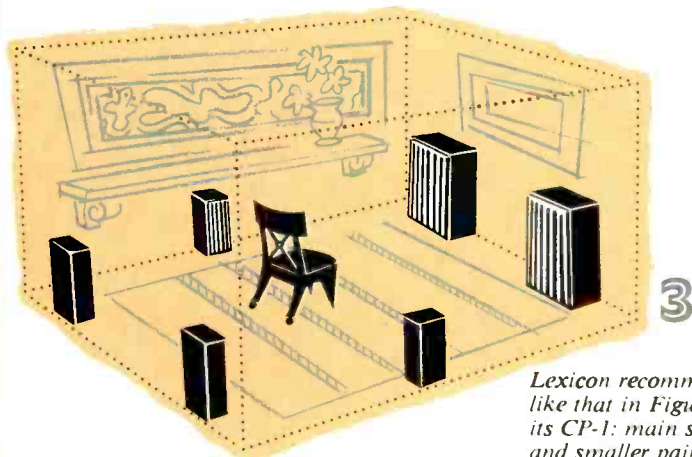


Figure 2 shows the basic setup recommended for use with the Yamaha DSP-3000: a pair of main speakers in front and four smaller ones high in the corners.



Lexicon recommends a setup like that in Figure 3 for use with its CP-1: main speakers in front and smaller pairs on the floor at the sides and rear of the room.

around the room doesn't work. Both Yamaha and Lexicon have answers to this problem, but they are different.

Yamaha's basic setup for music is shown in Figure 2. There are not two but four speakers in addition to the main pair: two in the upper front corners of the room and two at the upper rear corners. Each receives its own independent full-range signal.

The DSP-3000 also has four additional outputs, all labeled "mono," marked FRONT, RIGHT, LEFT, and REAR. The FRONT output receives a signal that is the sum of the two main channels; LEFT gets the sum of the left-front and left-rear effect channels, and similarly for RIGHT, while REAR gets the sum of the two rear effect channels. Each of these four "mono" outputs has a permanent low-pass filter switchable to 80, 150, or 5,000 Hz. At the 5,000-Hz setting they can be used for dialogue or as fill-in effects speakers. The two lower settings are for driving subwoofer amplifiers.

The Lexicon CP-1 was designed in response to research showing the importance of lateral (sideways-moving) reflections in concert halls. Subjective comparisons of concert halls show that the ones people like best are those with strong random reflections from the sides, such as are provided by a high-ceilinged, rectangular hall with ornate walls. Least pleasant are low, fan-shaped halls, which have few side reflections but strong returns from overhead and behind; these reflections are inherently mono for a front-facing listener.

Lexicon recommends a setup like the one in Figure 3, with the extra speakers at the sides and rear, and puts a strong emphasis on the primary importance of the side channels. The CP-1 also has two other outputs: a full-range center output for movie dialogue and a low-pass-filtered center output for a subwoofer amplifier.

With both processors, the ideal setup requires at least four extra channels. Most people can't or won't go to such lengths in the name of good sound, and the designers know it. Therefore, the Yamaha DSP-3000 has a switch on the back labeled 4 CH/6 CH; in the four-channel position, it mixes the front effect channels into the main speakers. On the back of the Lexicon CP-1 is a button labeled CENTER/PHANTOM

that switches between normal center-channel operation and a PHANTOM mode in which the center film channel is sent equally to the two main speakers.

The Lexicon's real versatility, however, is internal. It has a configuration routine that lets you specify how many speakers you have and where they're placed, and then it modifies the processor's operation to make optimal use of them. If you can afford to add more amplifiers and speakers later, you can reconfigure it. And one of its programs provides significantly more spacious sound with only two loudspeakers than in a standard stereo setup.

The Software

Both the Yamaha DSP-3000 and the Lexicon CP-1 are called processors. If that reminds you of the word "microprocessor," you're on the right track, because these boxes are actually audio computers, containing hardware that can store, retrieve, and manipulate 16- and 18-bit digital words and software that determines what those manipulations are. As with any computer, what these boxes do depends completely on what program they are running. Different programs have entirely different personalities, and when improved software is written, an old unit can become functionally identical to the newest.

Both remote controls feature PROGRAM buttons that load instructions into the processor's internal computer. In both cases, the program button can address two separate banks of memories, one for the standard factory-installed programs and the other for custom variations that have been stored by the user.

In every program except for Dolby Pro Logic, the operation of which is standardized, there are from five to ten parameters—such as the "liveness" or apparent size of the synthesized acoustic space, high- or low-pass filters, overall effect level, and reverberation time—that can be varied to tailor the sound to your source material, your listening room, your tastes, or your mood. Once you have created a new variation that you like, you can store it in one of the user memories for instant access.

Professional hall-simulation processors have enough computing power to mimic both the early, discrete reflections from the surfaces of the hall, called ambience, and the

rich decay of the later sound, known as reverberation. Because of the more limited computing power of these home units, however, all their programs are either ambience programs, with rich, specific early reflections and little or no decay, or reverberation programs, with rich decay but fewer discrete early reflections.

The DSP-3000's Programs

The Yamaha is a second-generation product derived from the company's original DSP-1, which was introduced in 1986. The programs for the DSP-1 were based on measurements of the reflections coming from four directions, corresponding to the corners of the room in which the extra speakers are located, in actual acoustic spaces ranging from intimate jazz clubs through discos, concert halls, and churches to giant stadiums.

The box on page 63 shows the DSP-3000's list of programs. Most of them have two subprograms of the same general type but with different settings and distinct sounds. The names—CABARET, DISCO, ANAHEIM STADIUM, VILLAGE GATE, and so on—are well chosen to evoke specific visual images that make the listening experience more vivid.

From the list you can see that the DSP-3000 has a rich variety of different ambience programs. The fact that these come in pairs, while the reverb programs have only a single version each, is a clue that reverb requires more processing.

Though the four effect outputs of the older Yamaha DSP-1 are independent of each other, the *input* to the effects processing circuit is mono—that is, the two stereo channels coming from the preamplifier are added together before being sent to the processor. The sum signal ($L + R$) is used for most programs, the difference signal ($L - R$) on a few.

BOTH the new Yamaha DSP-3000 and the Lexicon CP-1 have two independent processing channels and stereo inputs. But only seven of the DSP-3000's twenty-eight ambience programs, and none of its four reverb programs, have independent stereo inputs. It seems likely that many of these programs are similar to, if not derived directly from, the ones in the older DSP-1.

Yamaha's PRESENCE program is

unique in allowing the user to specify individual reflections by time, level, and direction. It offers the opportunity to learn how ambience programs work by building your own and listening to the results.

The CP-1's Programs

The Lexicon CP-1 has four basic programs, with three variations of each (see box on page 62). All of the programs are full stereo, with independent inputs and separate processing.



THE first program is PANORAMA, a cross-talk-cancellation circuit that keeps the left ear from hearing the sound coming

from the right speaker, and vice versa. Canceling such interaural cross-talk widens the stereo image to span almost the entire front hemisphere using only two front speakers. The first two versions of PANORAMA are called NORMAL and WIDE. The former is designed for music with bass content that is largely independent in the two channels, such as classical recordings made with spaced microphones; the latter is for music with mono bass, which includes almost all popular and rock recordings. (The amount of low-frequency width, as well as the width of the entire sound stage, is variable in both versions.) The third version, BINAURAL, is designed to take recordings made with a dummy head for headphone listening and expand them for loudspeakers. The PANORAMA program also supplies an $L - R$ feed with variable delay to the rear speakers, if you have them.

Lexicon's PANORAMA is somewhat similar in operation to such previous analog devices as the Sound Concepts Image Restorer, the Carver Sonic Hologram, and the Polk SDA loudspeakers, but it is implemented in full stereo, totally in the digital domain, in a way that greatly reduces the tonal coloration that can affect these earlier designs.

The PANORAMA processing does not add any new sound of its own, but it expands the existing stereo image in the recording. Like all such devices, it works well only in a narrow area equidistant from the main speakers. The program contains a setup routine that lets you compensate for your particular speaker geometry and, to some degree, for an off-center listening position.

The next two basic programs, AMBIENCE and REVERB, are designed to work with side and rear speakers (if you have only two additional speakers, they should be positioned at the sides of the room). The simulated room size, a variable parameter in the Yamaha programs, is the principal difference between the three versions of Lexicon's AMBIENCE and REVERB programs, which are accordingly labeled SMALL, MEDIUM, and LARGE.

The AMBIENCE programs perform stereo room simulation, with emphasis on early reflections. They also have a switchable parameter called VOICE DETECTION that removes mono vocal material from the room-simulation process. This has the advantage of keeping FM announcers from sounding like they are sitting in Mammoth Cave. (With the Yamaha DSP-3000 you would attack this problem by using one of its mono programs with L - R right input.)

The three versions of the REVERB program generate dense echoes and, like their counterparts in the DSP-3000, are best for imitating the sound of a large church or other stone structure. If you have only two loudspeakers, or if you have four and want to put the additional ones in the rear, both the AMBIENCE and the REVERB programs contain a version of PANORAMA that will take the synthesized acoustic space and spread it out beyond and behind the front speakers. As always, this effect works well only for centered listening positions. The last three programs of the CP-1, labeled SURROUND, are used for playback of Dolby Stereo soundtracks.



THE A/D and D/A converters in the Yamaha DSP-3000 run at 48 kHz, so its digital outputs have a full 20-kHz bandwidth.

The Lexicon CP-1 uses a lower sampling rate that limits the digitized sound to a little over 15 kHz. In either PANORAMA or the SURROUND modes the front channels pass through the A/D and D/A process and are therefore limited to a 15-kHz top end.

Dolby Surround Decoding

The DSP-3000's Dolby program is what is known as a basic Dolby Surround decoder. It sends the difference signal (L - R) to the rear channels and the sum (L + R) to

the mono front output through a 5,000-Hz low-pass filter. This simple method of decoding the four Dolby Stereo film channels provides good separation between the front and surround channels or between the front right and left channels. The separation between the front center (dialogue) channel and the right or left channels, however, is only 3 dB; the same is true for the separation between front left or right and the surround channels. Dialogue appears in the front left and right speakers, as do effects intended for the rear, and stereo music meant for the right and left front channels gets into the surround speakers.

Yamaha clearly expects serious film lovers to use the DSR-100 Pro surround decoder along with the DSP-3000. The DSR-100 uses a circuit known as Dolby Pro Logic, which detects the L + R and L - R signals—the center and surround channels, respectively—and removes them from the adjacent channels, markedly increasing the separation and the overall effectiveness of the mix (an operation known as "steering"). The Pro Logic circuit duplicates the professional Dolby decoder in the movie sound-stage monitor system that was used to mix the film.

The DSR-100 Pro works as a standalone Dolby Pro Logic decoder, taking in a stereo feed from a videotape or videodisc player and driving right, left, center, and surround amplifiers, plus a subwoofer. It can also accept all four effect outputs from the DSP-3000, which are passed straight through to the four effect channels until the Pro Logic circuit is switched in. The DSR-100 has its own full-bandwidth center output for the dialogue channel. The unit has its own small remote control, including an overall volume control. (Both of the Yamaha components have rotating volume controls with motor drives, but like the Lexicon they use electronic devices called voltage-controlled amplifiers.)

The Lexicon CP-1 contains the only Dolby Pro Logic circuit that is implemented entirely in the digital domain. This has the advantage of allowing the unit to keep the two main inputs in balance automatically, which is important if the Pro Logic system is to work correctly. The CP-1 also continuously and automatically corrects for the inter-

channel timing errors that appear in many video transfers because of misaligned equipment.

In addition to Dolby Pro Logic, the CP-1 has Stereo Logic, a version of Pro Logic meant for playing music through a surround-speaker setup like that in Figure 1. Stereo Logic is basically Pro Logic with more adjustable parameters.



THE final program in the CP-1 is called Mono Logic, which takes a mono film soundtrack and, using proprietary voice-detection routines, separates the dialogue from the music. The dialogue stays in the center channel while the music and sound effects—sometimes even those occurring beneath the dialogue—are put through a stereo synthesizer and into an ambience program feeding the side and rear speakers.

One Box or Two?

The Yamaha and Lexicon processors, for all their conceptual similarities, take quite different design approaches. The Yamaha DSP-3000 and its companion, the DSR-100 Pro, are elegant pieces of hardware. For a combined list price of just under \$2,500 you get complete remote controls, video display, full-bandwidth digital encoding, and a digital input. Most of the built-in programs, however, appear to be descendants of the ones in the earlier Yamaha DSP-1 and don't make full use of the stereo processing capabilities of the DSP-3000.

The Lexicon CP-1 offers ambience, reverberation, and Dolby Pro Logic decoding in a single compact box for less than half the cost of the two Yamaha components. Its PANORAMA program also makes the CP-1 useful in systems with only two speakers, and it automatically adjusts its programs for many different speaker configurations. Its digital Pro Logic system is the most accurate version anywhere, especially for less-than-perfect sources. The packaging, however, looks and feels less elegant and well-crafted than the Yamaha units, there is no digital input, and the A/D and D/A converters are limited to about 15-kHz bandwidths.

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BEST RECORDINGS OF THE MONTH

Stereo Review's critics choose the outstanding current releases

TRACY CHAPMAN: A STRONG NEW VOICE

THE best musical performances surprise us. They take us to places we've never been, whether a dead-end town, a simmering ghetto, or a tremulous heart. They teach us something we've never known, show us emotions we've never felt. Tracy Chapman's first album does just that. It's a guided tour of her private and our public lives, an enriching, mesmerizing surprise.

A twenty-four-year-old Bostonian out of Cleveland, Chapman writes strong, impassioned songs. Some are political comments on our society, such as *Talkin' Bout a Revolution*, which describes the smoldering frustrations of America's have-nots. *Across the Lines* is about tacit

racial segregation—the invisible geographical boundaries that separate blacks and whites, and the consequences of stepping over them. *Mountains o' Things* is about greed, pure and simple.

As powerful as these songs are, Chapman also packs a punch with indirect social commentary, as in *Fast Car*, which describes a couple trapped, with no prospects, in a dying town. Their only escape is the illusion of flight in his car: "The speed so fast I felt like I was drunk/... And I had a feeling I could be someone."

When Chapman sings of love, she sings of pure, unreasoning emotion, as in *For My Lover*: "I follow my heart/And leave my head to ponder." She is precise, vivid, and affecting in her articulate description of being inarticulate. Yet the woman of Chapman's songs remains unknowing about love, and for her the gap between feeling and knowing is filled with heartache.

Holding together this contradictory soul, which knows its rage but not its tenderness, is a wonderfully expressive voice. Chapman's contralto is thick on the bottom and silvery on the top. In one instant she

knocks you back on your heels with her strong attack, and in the next she lifts you with the vulnerability of her vibrato. The music in this album is, basically, folk music, voice and acoustic guitar. And producer David Kershenbaum has supplemented Chapman's simple sound with spare arrangements, so that she and her music stand center stage. "Tracy Chapman," debut or not, is an astonishing album.

Ron Givens

TRACY CHAPMAN. Tracy Chapman (vocals, guitar); instrumental accompaniment. *Talkin' Bout a Revolution; Fast Car; Across the Lines; Behind the Wall; Baby Can I Hold You; Mountains o' Things; She's Got Her Ticket; Why?; For My Lover; If Not Now . . . ; For You.* ELEKTRA 60774-1, © 60774-4, © 60774-2 (36 min).

ANDRÁS SCHIFF'S REMARKABLE MENDELSSOHN

ANDRÁS SCHIFF'S new recording of Mendelssohn's *Songs Without Words* is one of those things that suggest a performer and repertoire simply made for each other. Of course, several of "those things" are other recordings by Schiff, and I found myself wondering if anyone without his feeling for Bach could respond to these Mendelssohn pieces so remarkably. The eloquent simplicity with which he sets forth Op. 53, No. 2, in particular brought this to mind—but I'll concede it is not the sort of thought that might strike every listener, and perhaps it hasn't much real pertinence. What *is* pertinent is the combination of seriousness, respect, and affection one feels in these performances.

Unlike Daniel Barenboim, who gave us *all* of the *Songs Without Words* in his treasurable set, Schiff offers twenty-two of them, including most of the best-known ones, in a sequence designed to exploit their contrasting character and moods. He obviously does not regard any of them as trivial or casual pieces: they may be small, but none is without

Chapman: a guided tour of her life and ours



BEST RECORDINGS OF THE MONTH

substance. The fourth and fifth songs in Op. 30, which occur midway through the recorded sequence, here seem to be two extremely concise but strikingly powerful little tone poems, all but overflowing with the sort of unforced emotion for which "without words" is the only possible expression. Schiff plays Op. 102, No. 5, the A Major piece called *Kinderstück*, without a hint of coyness or condescension, suggesting another sort of "poem" (what else is a "song without words," after all?), and he manages to bring a rather miraculous freshness to the notorious *Spring Song* (Op. 62, No. 6).

The recording, quite aptly emphasizing warmth rather than brilliance, tends to be a little over-reverberant and even a little bass-heavy here and there, but never enough to obscure the elegant clarity of Schiff's playing or to distract from the substance he reveals in these well-loved but perhaps not truly well-known pieces.

Richard Freed

MENDELSSOHN: *Songs Without Words (selections)*. Op. 19, Nos. 1-2, 4-6; Op. 30, Nos. 3-6; Op. 38, Nos. 1, 2, and 6; Op. 53, Nos. 1-3; Op. 62, Nos. 1 and 6; Op. 67, Nos. 4 and 6; Op. 85, No. 6; Op. 102, Nos. 3 and 5. András Schiff (piano). LONDON © 421 119-4, © 421 119-2 (57 min).

Schiff: eloquent simplicity



Cohen: a scalpel inside the velvet glove

LEONARD COHEN: A SURPRISE AT EVERY TURN

IN his first major-label effort in nearly a decade, Leonard Cohen, the eternal pessimist, returns to exemplary form in a brilliant, quirky album of intrigue and despair called "I'm Your Man."

Cohen, who now sings in a menacing non-voice that is so low it threatens to drop off the scale, delivers a surprise at every turn. Mixing folk and ethnic music, Sixties female pop-group warbling, and barbed jazz riffs to underpin his brooding lyrics, the Canadian poet nonetheless kicks off the album with *First We Take Manhattan*, a cloak-and-dagger terrorist saga set to ferocious, synthesized disco. And to further insure that this is no sentimental return to the era of *Suzanne* and *Bird on the Wire*—that this is a contemporary treatment of a rejuvenated artist—Cohen then hauls out the saxophone for his warmly cynical *Ain't No Cure for Love*, which testifies that only a woman's love can redeem this man from his overwhelming morbidity.

Both *First We Take Manhattan*

and *Ain't No Cure for Love* were also recorded by Jennifer Warnes for her 1986 all-Cohen album, "Famous Blue Raincoat." But they emerge here with personalities far more sinister than Warnes (who contributes breathtaking duet and background vocals for Cohen's record) ever dared hint. By the time he ambles around to the third cut, *Everybody Knows*, it is clear that as a suitor Cohen sometimes hides a scalpel inside his velvet glove. The slashes are quick and deep: "Everybody knows you've been discreet/ But there were so many people you just had to meet/ Without your clothes."

Most of the songs in "I'm Your Man" are thrilling in their unpredictable melodies and arrangements (everything from reggae to waltz-time) and in the compelling frankness of their lyrics. But perhaps the most haunting composition is *Take This Waltz*, based on a poem, *Little Viennese Waltz*, by Federico Garcia Lorca. Here, in images of "a tree where doves go to die" and "a bed where the moon has been sweating," Cohen relaxes his anger to reveal a man yearning not for dominance in love, but for submission. Soon, however, the mask goes up again, and he finishes out the album with *Tower of Song*, an exercise in self-deprecating humor. Cohen, a

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softie in the chain-mail protection of his sardonic verse, is mindful of the compassionless Eighties.

Alanna Nash

LEONARD COHEN: *I'm Your Man*. Leonard Cohen (vocals); Jennifer Warnes, Anjani (background vocals); vocal and instrumental accompaniment. *First We Take Manhattan; Ain't No Cure for Love; Everybody Knows; I'm Your Man; Take This Waltz; Jazz Police; I Can't Forget; Tower of Song*. COLUMBIA FC 44191, © FCT 44191, © CK 44191 (41 min).

BOLET AND DUTOIT PLAY THE RUSSIANS

LONDON has coupled new recordings of the two most popular Russian Romantic piano concertos, the Tchaikovsky First and the Rachmaninoff Second, on an exceptionally long-playing compact disc. The highly individual soloist in both works is Jorge Bolet, and he is accompanied by the Montreal Symphony under its leader, Charles Dutoit.

Bolet obviously has very definite ideas about how he wants the music to go, and it is not in the direction of virtuosic fireworks for their own sake. His intent seems to be to let every single note in the solo part be heard, within a framework of pro-

nounced but not exaggerated rubato phrasing. The tempos tend toward the deliberate, particularly in the finale of the Rachmaninoff. And that work's Romanticism is underlined by Dutoit's lush treatment of the orchestral part in the slow movement.

The reading of the Tchaikovsky is several steps removed from the fiery one that Dutoit and Martha Argerich recorded in the early Seventies. As in the Rachmaninoff, Bolet favors rubato phrasing and leisurely tempos. In the finale, the interpretive emphasis is on the lyrical rather than frenetic aspects of the music.

You could practically write out the solo parts of both concertos simply from hearing these performances, given the utter clarity of Bolet's playing and the robust, full-bodied imaging of the piano in the recording, which places the soloist very much front and center. Dutoit's conducting is just fine, too, and the orchestral sound is all that we've come to expect from recordings made in Montreal's St. Eustache church, where Dutoit and his orchestra have recorded so successfully in the past.

David Hall

TCHAIKOVSKY: *Piano Concerto No. 1, in B-flat Minor, Op. 23*. **RACHMANINOFF:** *Piano Concerto No. 2, in C Minor, Op. 18*. Jorge Bolet (piano); Orchestre Symphonique de Montréal, Charles Dutoit cond. LONDON © 421 181-4, © 421 181-2 (75 min).

Bolet: a clear-eyed view of Romantic favorites



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- **ROSSINI: La donna del lago**. Ricciarelli, Valentini Terrani, Ramey; Pollini. CBS M3K 39311 (three CD's). "A musical joy" (December 1985).
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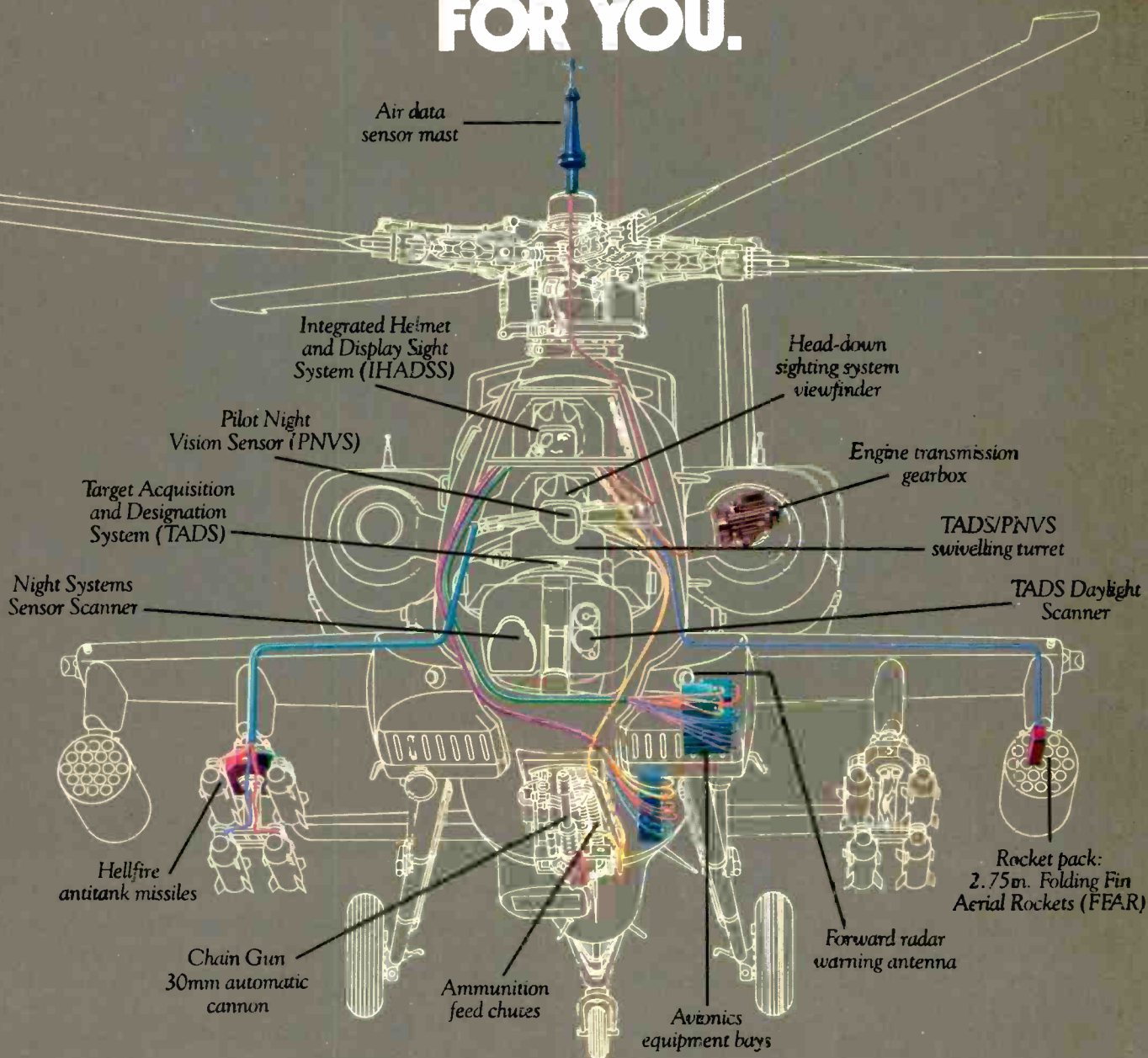
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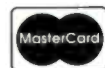
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THE ADVENTURES: *The Sea of Love.* The Adventures (vocals and instrumentals); instrumental accompaniment. *Drowning in the Sea of Love; Broken Land; Heaven Knows Which Way; Hold Me Now; The Sound of Summer;* and four others. EIKTRA 60772-1, © 60772-4, © 60772-2 (40 min).

Performance: *Riveting*
Recording: *Good*

The Adventures have taken a giant leap forward by taking one small step backward for British pop. In "The Sea of Love," they have taken the basic British synth-pop approach, but without all the synths. By using real drums and a real bass rather than programming the rhythm section electronically, the Adventures have produced a sound that is soulful and rich without being slick. Singer Terry Sharpe and guitarist-songwriter Pat Gribben, the nucleus of the band, hail from Belfast, Northern Ireland. Whether by coincidence or by proximity, the Adventures sound somewhat like U2, although without U2's supple, relentless approach to rhythm. The Adventures *do* have a wonderful approach to vocals, though, with two background singers in addition to Sharpe. The rich vocal effects make for a nice contrast to Sharpe's compelling, rough-edged timbre.

Then there are the songs. Gribben has an inspired melodic sense, and his choruses linger in the mind. He composes dramatically; a number of his songs begin with crescendos, and several build inexorably to large climaxes. When his subject is romance, Gribben can be melodramatic, but the music matches his desperation. Despair is also the theme in *Broken Land*, about Ireland's civil strife. And he can be wistful, too, as in the consecutive songs *The Sound of Summer* and *When Your Heart Was Young*. In the first, Gribben glories in the summer of his youth, and in the second he realizes, with sadness, that we cannot remain rooted in the past. The Adventures' first album was released without much attention in



JEFF KATZ/WARNER BROS.

ROYAL BADNESS

No one can deny that Prince has enormous talent. And no one can deny that he can get carried away. The former explains why all of his albums are fascinating; the latter why his work since "Purple Rain" has been so uneven. His latest album, "Lovesexy," shows just how fine the line is between royal badness and inchoate schlock. Prince's musical ingenuity is breathtaking, and the record snaps, crackles, and pops with imagination. Nearly too much imagination. It's a Minneapolis soul stew jammed with tasty ingredients—riveting guitars, ricocheting rhythms, Family Stoned horns, vocals that are speeded up, slowed down, spoken, growled, squealed, and even sung. You can't help wondering if one more crazy-quilt song construction, or one more audio gimmick, might have caused "Lovesexy" to tilt. The important thing is that it doesn't. Prince almost goes too far, but he doesn't quite go over the top. And isn't that what the strongest music in the rock era has always done?

On the title cut alone, Prince's musical tricks include subsonic bass, real horns along with synthesized horns, "scratching," synthesized organ, multi-tracking his own voice into a unison choir, and heavily layered voice-overs. In one particularly dazzling stretch of *Lovesexy*—one of the later bridges—there is a spoken call-and-response between a man and a woman. The dialogue segues from a normal male voice to a normal female voice, then to a speeded-up female voice and a male's accelerated voice, then to a chipmunk-fast female, then to a fast male voice that slows down, back to a very fast female, and then to a fast male voice

that decelerates into Prince's voice. Or maybe all of these are Prince's voices. Or maybe none.

You get the point. Why does Prince throw all of this stuff into his music? Because he can. And in "Lovesexy" it works. Jackhammer funk, soaring melodies, lilting harmonies, peculiar tape effects—all of it comes together, if only barely. You get the feeling that Prince creates music in such massive quantities that "Lovesexy" is merely an indication of the direction the wind was blowing for him, creatively, when he taped it and that he's probably put a couple of albums' worth on tape since then.

Sexuality and religiosity commingle in equal parts in "Lovesexy," and often it's hard to tell the two apart. A note on the lyric sheet defines "lovesexy" as "the feeling U get when U fall in love not with a girl or boy but with the heavens above." But religious love for Prince definitely has a carnal element, as in *Anna Stesia*, when he addresses Jesus: "You are my God, I am Your child. From now on, 4 You—I shall be wild." And there's no doubt about the physicality of the man's emotions: In the midst of the lovely, tender ballad *When 2 R in Love* he sings, "Let me touch your body 'til your river's an ocean." In more ways than one, "Lovesexy" is definitely a hot album.

Ron Givens

PRINCE: *Lovesexy.* Prince (vocals and instrumentals); other musicians. *1 No; Alphabet St.; Glam Slam; Anna Stesia; Dance On; Lovesexy; When 2 R in Love; I Wish U Heaven; Positivity.* PAISLEY PARK/WARNER BROS. 25720-1, © 25720-4, © 25720-2 (45 min).

EXPLANATION OF SYMBOLS:

- Ⓛ = DIGITAL MASTER LP
- Ⓢ = TAPE CASSETTE
- Ⓢ = COMPACT DISC (TIMINGS ARE TO NEAREST MINUTE)



Bruce Hornsby and the Range: bankable

1985. Their second, "The Sea of Love," deserves a better fate. R.G.

TRACY CHAPMAN (see Best of the Month, page 71)

CHEAP TRICK: *Lap of Luxury*. Cheap Trick (vocals and instrumentals). *Let Go; No Mercy; The Flame; Don't Be Cruel; All We Need Is a Dream; All Wound Up*; and four others. EPIC OE 40922, © OET 40922, © CK 40922 (42 min).

Performance: *Semi-inspired*
Recording: *Very good*

Cheap Trick made some inspired music in its early albums—quirky little subjects set to dizzying, hook-saturated power pop—as if the early Beatles had been refracted through a fun-house mirror. The band had a gimmick for its image, too—the singer and the bass player looked like air-brushed teen dreams, the drummer looked like a down-and-out chain smoker, and the guitarist looked like Bowery Boy Huntz Hall reincarnated as a geek.

But it's been years since "Surrender," and time hasn't been kind to Cheap Trick. Critics and listeners have grown less enchanted with the band's formula, and for good reason. Carnival rides get tiresome after a while. If you keep playing the same trick over and over, it just gets cheaper and cheaper. "Lap of Luxury" is seen as a comeback of sorts. Original bassist Tom Petersson has returned to the fold after some time away from the band, and the material has been drawn from a variety of writers, both inside the band and out.

Well, the record isn't the millenium, but it's not too bad. Guitarist Rick Nielsen has penned a pop gem in *Let Go*, with snappy lyrics and an encyclopedia of guitar references, from the Move to the Byrds. Singer Robin Zander and Petersson wrote *All Wound Up*,

which lives up to its name. There's even a fair cover of the Elvis hit *Don't Be Cruel*. Certainly there are some dead spots in the album—*Space* goes in one ear and out the other—but there are signs of new life as well. It's good to know that Cheap Trick still has something up its sleeve. R.G.

LEONARD COHEN: *I'm Your Man* (see Best of the Month, page 72)

HAIRSPRAY. Original motion-picture soundtrack. Rachel Sweet: *Hairspray*. The Ray Bryant Combo: *The Madison Time*. The Ikettes: *I'm Blue (The Gong-Gong Song)*. Jan Bradley: *Mama Didn't Lie*. Gene Pitney: *Town Without Pity*. Gene and Wendell: *The Roach (Dance)*. And six others. MCA MCA-6228, © MCAD-6228. © MCAD-6228 (31 min).

Performance: *Wonderful*
Recording: *Sixties sound*

John Waters's *Hairspray* is a genuine movie surprise—a sweet satire on teen musicals and message pictures made by a man who heretofore has defined the outer limits of cinematic bad taste. And yet, it's recognizably the work of its gross-out king creator: After all, who else would cast Pia Zadora as a beatnik chick or, for that matter, the late Divine as a nice suburban mom?

Such touches aside, however, *Hairspray* is also a wonderfully knowing nostalgia piece, the real *Dirty Dancing* if you will, and this soundtrack album reflects that. Rather than trot out the usual big hits of the period, Waters has raided his own record collection for the obscurities and local (Baltimore) favorites that provided the backdrop to his own obviously bizarre teenage years. Some of them are moderately well known, like the Five Du-Tones' *Shake a Tail Feather*, which was redone in the Blues Brothers movie; some are just plain weird, such as Gene and Wen-

dell's *The Roach*, which most folks assumed was a gag song written for the movie rather than an authentic nutso oldie; and some, like Toussaint McCall's *Nothing Takes the Place of You*, a gorgeous soul ballad that occasions the movie's most astonishing scene, are transcendent. But all of them, including Rachel Sweet's mock-Spector title tune, are wonderfully entertaining, and together they add up to what is clearly the best Sixties rock sampler released this decade. As Waters himself puts it in his liner notes, which deserve a Grammy nomination themselves, the music here is "the only known remedy to today's Hit Parade of Hell." S.S.

BRUCE HORNSBY AND THE RANGE: *Scenes from the Southside*. Bruce Hornsby and the Range (vocals and instrumentals); other musicians. *Look Out Any Window; The Valley Road; The Road Not Taken; Defenders of the Flag; Jacob's Ladder*; and four others. RCA 6686-1-R, © 6686-4-R, © 6686-2-R (48 min).

Performance: *Aiming higher*
Recording: *Very good*

For their second album, Bruce Hornsby and the Range could have easily played it safe, duplicating the sound of *Mandolin Rain* and the other songs of love lost and scattered that brought them overwhelming success two years ago with "The Way It Is." Instead, Hornsby and the band have bypassed the familiar hooks to craft a record that is in some ways risky, in other ways solidly bankable.

Rearing in the Williamsburg, Virginia, area, Hornsby says he conceived the album as the musical equivalent of a collection of Southern short stories. Unlike Nanci Griffith, who has the same lofty aim, Hornsby—who writes his repertoire with his brother, John—is less than direct in his lyrics and his vocal presentation. In such songs as *The Show Goes On*, the listener has to work a little at understanding Hornsby's themes. He is much more successful on *The Valley Road*, which details the consequences of lust between a rich plantation girl and a hired hand, and *The Road Not Taken*, about a young man's enduring love for a woman who will not leave her native Appalachia to join him. These are, of course, timeworn Southern themes, but in the latter song the narrator—in some of Hornsby's most affecting lines—returns years later to find his sweetheart "older, thinner on the front porch."

At times, especially in *The Old Playground*, a remembrance of his youth on the basketball court, and in *Jacob's Ladder*, a timely account of hypocritical broadcast evangelists, Hornsby's story is too slight to sustain the song, and his lyrics often fail to pay off in a final, conclusive way. But Hornsby's songs are not really about stories or ideas anyway, they are about music, specifically about

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- 365262. Placido Domingo—A Love Until The End Of Time. (CBS)
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- 366443. Good Morning Vietnam—original motion picture soundtrack. (A&M)
- 348649. Pachelbel Canon & Other Digital Delights—Davis, Toronto Chamber Orch. (Digital)—Fantare)
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The Smithereens: Sixties purists

incorporating jazz piano into the mainstream—or, as Hornsby puts it, “McCoy Tyner meets rock.” Here is where the album becomes bankable, with its emphasis on how a jazz-styled piano can ride a rock beat and still come out vaguely country—and winsome and Southern all at the same time.

Still, “Scenes from the Southside” comes up short on variety and emotional charge. It is difficult to connect with most of this album, to feel the sort of involvement that “The Way It Is” commanded. Life may be languid in the South, but passionless it is not. Hornsby, who now lives north of Hollywood, might do well to make the journey home. *A.N.*

REBA MCENTIRE: *Reba*. Reba McEntire (vocals): vocal and instrumental accompaniment. *So, So, So Long; Sunday Kind of Love; You're the One I Dream About; Respect; Wish I Were Only Lonely; Everytime You Touch Her*; and four others. MCA • MCA-42134. © MCAC-42134. © MCAD-42134 (35 min).

Performance: *Disappointing*
Recording: *Nice*

After years of insisting that she'd stick to hard-core country “because I have tried the contemporary-type songs, and it's not Reba McEntire—it's just not honest,” McEntire, the Country Music Association's 1986 Entertainer of the Year, has gone whole-hog pop. Okay, so maybe that's not so terrible. But her rendition of the soul classic *Respect* is. Let's face it, Aretha Franklin *owns* the song, even if Otis Redding did write and record it, and no one else can get near it without looking ridiculous.

Nonetheless, McEntire, who is as feisty as a wronged wife with a frying pan, could handle a lot of the soul music of

the Sixties, if not this particular song, and “Reba” cries out for something gutsy to balance its slow-tempo, pristinely produced, and largely forgettable ballads. Aside from *Sunday Kind of Love*, the Etta Jones jazz-pop standard that McEntire delivers with effective country-blues coloration, the new effort is a disappointing bore, a waste of an exhilarating voice, and a somewhat disturbing harbinger of the fate of country music's traditionalist movement. *A.N.*

BOBBY SHORT: *Guess Who's in Town (The Songs of Andy Razaf)*. Bobby Short (vocals); Harry Sweets Edison (trumpet); Marshall Royal (alto saxophone); Buster Cooper (trombone); other musicians. *Honeysuckle Rose; Ain't Misbehavin'; Tan Manhattan; Make Believe Ballroom; Sposin'; Guess Who's in Town*; and five others. ATLANTIC 81778-1. © 81778-4. © 81778-2 (38 min).

Performance: *A revelation*
Recording: *Okay*

Over the past few decades, Bobby Short has probably done more than any other saloon singer to keep in circulation hundreds of pop songs that never quite made it as standards but definitely deserve continued hearings.

The late Andy Razaf was never a household name. The American-born son of a Madagascan father, from the Twenties to the Forties Razaf worked mostly with Fats Waller, Eubie Blake, and James C. Johnson, writing songs for Broadway revues, Harlem nightclub shows, and radio. Some of his songs provide sharp, plaintive insights into the racial feelings of his day, as in *Black and Blue* and *Lonesome Swallow*. Others make color lines nonexistent, such as the romantic *Sposin'*, an early Bing

Crosby hit, or the original theme for Martin Block's legendary radio show *Make Believe Ballroom*, both of which Razaf wrote with an Englishman, Paul Denniker.

Short sings the eleven songs here with his usual (and always appropriate) blend of buoyancy, caustic awareness, and life-affirming style. His voice may be raspier now, but he knows how to use it to add bite and character to lyrics. Phil Moore's small-combo arrangements—the last before his death last year—are fresh, attractive, and in the right style. On CD, the analog recording has a slightly boxed-in feeling, but it's not too distracting. With Short in such fine form, it's the quality of the songs and his performances that make this album a winner. *Roy Hemming*

THE SMITHEREENS: *Green Thoughts*. The Smithereens (vocals and instrumentals); vocal and instrumental accompaniment. *Only a Memory; House We Used to Live In; Something New; The World We Knew; Especially for You; Drown in My Own Tears; If the Sun Doesn't Shine*; and four others. CAPITOL/ENIGMA CI-48375. © C4-48375. © C2-48375 (35 min).

Performance: *Aces*
Recording: *Powerful*

The world's last great Sixties-purist pop band returns, and this follow-up to the Smithereens' deservedly (and surprisingly) successful debut, “Especially for You,” differs from its predecessor only a tad more than “The Beatles' Second Album” differs from “Meet the Beatles”—which is to say, not much. With ace producer Don Dixon once again at the helm, the 'Reens have concocted a slightly punchier-sounding version of last year's album, all ringing guitars and echoes of the Fab Four, the early Who and Kinks, vintage Brian Wilson, and sundry Brill Building popmeisters.

“Green Thoughts” is a wonderful record, to be sure. Leader Pat DiNizio's vocals are more expressive than ever. All those influences, though pretty obvious, are once again so thoroughly digested that the band has its own unmistakable sound. And the songs, which seem deliberately a little more morose than last time, are never less than melodically memorable, particularly *House We Used to Live In* and the relentlessly perky *Elaine*. (If anybody out there can tell me where the great opening riff of *Only a Memory* was, er, paraphrased from, I'd be eternally grateful.) My only gripe is that the album seems reminiscent of the debut record by choice, rather than by coincidence. For example, putting the acoustic, jazz-inflected *Especially for You* in the same slot as the last album's similar change-of-pace *In a Lonely Place* seems a bit calculated. Still, I guess sometimes you don't want to mess with perfection, and taken on its own terms “Green Thoughts” is a stunner. *S.S.*

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The Everly Brothers

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Little Richard



Nearly every disc in the initial release fulfills the promise of the series gloriously, with four legitimate hits on each one. Of course, some of these artists had more than four chartbusters, so Rhino might have left off one of your favorites. For instance, no one could argue that the four Turtles songs—*Happy Together*, *You Baby, She'd Rather Be with Me*, and *It Ain't Me Babe*—weren't hits for the group. But some fans might have preferred to hear, say, *Elenore*.

For me, the best of these “bits” provide everything I'd care to hear by the artists in question. With *Surf City*, *Ride the Wild Surf*, *The Little Old Lady (from Pasadena)*, and *Dead Man's Curve*, the Jan and Dean disc gives me all the songs by the duo that I really want to hear. And it makes the Sixties in California live again through their twin obsessions: surfing and hot rods.

I do have a quibble. Rhino's three-inch Jerry Lee Lewis disc has *Whole Lot of Shakin' Going On* but not *Great Balls of Fire*. Why would Rhino not include both of these essentials? Probably because the company wants you to buy its full-length Jerry Lee Lewis CD. And I will pick another nit: The Ventures CD-3 is very nice, but I wish it didn't include *Wipe Out*, a song immortalized by the Surfariis, not the Ventures. Also, unless you're one of the few people whose CD players are capable of playing three-inch discs without adaptors, you'll have to use one each time you play a “Lil’ Bit.”

If my description of Rhino's “Lil’ Bit of Gold” CD-3's doesn't make you want to run right out and buy the whole series, the company has offered an extra incentive: When you buy five of the three-inch CD's, you can get one of eleven full-length Rhino CD's free by mail. But hurry. This offer is, as they say, good for a limited time only.

Ron Givens

THE BEACH BOYS: *California Girls; Help Me, Rhonda; Wouldn't It Be Nice; Good Vibrations.* R3 73001 (11:36).

JOHNNY CASH: *I Walk the Line; Folsom Prison Blues; Guess Things Happen That Way; Ballad of a Teenage Queen.* R3 73002 (9:40).

THE CHORDETTES: *Lollipop; Mr. Sandman; Born to Be with You; Eddie My Love.* R3 73003 (9:39).

CLASSICS IV: *Spooky; Traces; Everyday with You Girl; Stormy.* R3 73004 (11:08).

EDDIE COCHRAN: *Somethin' Else; Summertime Blues; C'mon Everybody; Nervous Breakdown.* R3 73005 (8:32).

THE DIXIE CUPS: *Chapel of Love; Iko Iko; People Say; Little Bell.* R3 73006 (10:30).

FATS DOMINO: *Blueberry Hill; I'm Walkin'; Ain't That a Shame; Walking to New Orleans.* R3 73007 (9:26).

THE EVERLY BROTHERS: *Wake Up Little Susie; Bird Dog; Let It Be Me; All I Have to Do Is Dream.* R3 73008 (9:25).

THE FLEETWOODS: *Mr. Blue; Come Softly to Me; Tragedy; Run-around.* R3 73009 (10:18).

THE FOUR SEASONS: *Sherry; Working My Way Back to You; Rag Doll; Let's Hang On!* R3 73010 (12:05).

JAN AND DEAN: *Surf City; Ride the Wild Surf; That Little Old Lady (from Pasadena); Dead Man's Curve.* R3 73011 (9:48).

JERRY LEE LEWIS: *Whole Lot of Shakin' Going On; High School Confidential; End of the Road; What'd I Say.* R3 73012 (9:42).

LITTLE ANTHONY & THE IMPERIALS: *Goin' Out of My Head; I'm on the Outside (Looking In); Hurt So Bad; Take Me Back.* R3 73013 (10:39).

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CARL PERKINS: *Blue Suede Shoes; Honey Don't; Everybody's Trying to Be My Baby; Matchbox.* R3 73015 (9:34).

RASPBERRIES: *Go All the Way; I Wanna Be with You; Let's Pretend; Tonight.* R3 73016 (13:01).

THE TURTLES: *Happy Together; You Baby; She'd Rather Be with Me; It Ain't Me Babe.* R3 73017 (9:47).

RITCHIE VALENS: *La Bamba; Come On, Let's Go; Donna; That's My Little Suzie.* R3 73018 (8:26).

BOBBY VEE: *Take Good Care of My Baby; Run to Him; The Night Has a Thousand Eyes; Come Back When You Grow Up.* R3 73019 (10:33).

THE VENTURES: *Walk—Don't Run; Hawaii Five-O; Perfidia; Wipe Out.* R3 73020 (9:14).

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JAZZ

GRP SUPER LIVE IN CONCERT. Diane Schuur (vocals); Dave Grusin (keyboards); Lee Ritenour (guitar); Tom Scott (saxophone); Chick Corea Elektric Band; other musicians. *Deedles' Blues; Love Dance; Early A.M. Attitude; Water from the Moon/Earth Run; Time Track; Rumble; Light Years;* and five others (nine others on CD and DAT). GRP ① GR-2-1650 two LP's, ② GRC-2-1650 two cassettes, ③ GRD-2-1650 two CD's, GRT-1650 one DAT (109 min).

Performance: *Okay*
Recording: *Very good*

This album, taped at a concert given in Tokyo last October, features a lineup of the GRP label's top stars. The first half showcases vocal artist Diane Schuur in three tracks, then Dave Grusin's keyboards in a couple, Lee Ritenour's guitar in one, one featuring Tom Scott's saxophone, and finally a couple where they all play together. A set by Chick Corea's new Elektric Band makes up the second half. The performances overall are pretty good, generally what we've come to expect from these artists, but if there are a few major lapses, there are also only a few moments of true excitement. R.G.

JEAN-LOUP LONGNON AND HIS NEW YORK ORCHESTRA. *Moment's Notice; Torride; Body and Soul; Royal Garden Blues;* and three others. ATLANTIC 81829-1, ② 81829-4, ③ 81829-2 (52 min).

Performance: *Authoritative*
Recording: *Excellent*

I confess: The name was unknown to me when this album arrived. But I shall henceforth look for new releases by Jean-Loup Longnon. A French trumpeter, composer, arranger, and scat vocalist, Longnon displays immense talent and good taste in this big-band album. The orchestra, co-led by saxophonist Ted Nash, who is its only "name" member, is a well-honed, well-oiled ensemble that handles Longnon's finely textured arrangements with the expertise they deserve. Here, at last, is a contemporary big-band arranger who can hold a candle to Toshiko Akiyoshi. Longnon is obviously well versed in the big-band language of the past, but he is not inhibited by it. You don't have to be locked into a big-band groove to grow attached to this record. C.A.

CARMEN MCRAE: *Fine and Mellow.* Carmen McRae (vocals); Red Holloway (alto and tenor saxophones); Jack McDuff (organ); other musicians. *Black and Blue; One More Chance; My Handy Man Ain't Handy No More; Until the Real Thing Comes Along;* and three

others (four others on CD). CONCORD CJ-342, ② CJ-342-C, ③ CCD-4342 (51 min).

Performance: *Winning*
Recording: *Fine remote*

The CD of Carmen McRae's "Fine and Mellow," subtitled "Live at Birdland West," starts with a rousing instrumental version of *What Is This Thing Called Love*. Unfortunately, that track is missing from the LP, but there is still plenty to enjoy. The band is a quintet led by saxophonist Red Holloway, who has so expertly accompanied singer Joe Williams in the past, and he and his men back McRae with equal alacrity. McRae has been in better voice, but it is only occasionally that you notice a sign of wear; she is simply wonderful in such tracks as *Fine and Mellow*, which is enhanced by a mellow Phil Upchurch guitar solo. *Black and Blue*, a bit of social commentary that Ethel Waters and Louis Armstrong delivered so well, and the ballad *Until the Real Thing Comes Along*. I am less impressed with her reading of *My Handy Man Ain't Handy No More*, but that may be because Alberta Hunter staked her claim so firmly to that bit of Twenties double entendre. Carmen McRae is indeed fine and mellow. C.A.

MEL TORMÉ AND GEORGE SHEARING: *A Vintage Year.* Mel Tormé (vocals); George Shearing (piano); other musicians. *Whisper Not/Love Me or Leave Me; Out of This World; The Way You Look Tonight; The Midnight Sun; When Sunny Gets Blue;* and five others (seven others on CD). CONCORD CJ-341, ② CJ-341-C, ③ CCD-4341 (55 min).

Performance: *Flawless*
Recording: *Excellent*

Mel Tormé and George Shearing have never performed better than they do in "A Vintage Year," which was recorded live last summer at the Paul Masson Mountain Winery in Saratoga, California. They are as smooth together as a fine wine whose time has come. The program is typical of the material Tormé has been treating his night-club audiences to in recent years—a tasty blend of well-seasoned songs with a dash of the unusual and a cleverly devised medley as centerpiece. The medley is a wonderful tribute to New York City, though not all the songs relate directly to the Big Apple.

Tormé was once referred to as "the Velvet Fog," and while the fog has lifted, the velvety quality of his voice is still very much in evidence. Shearing's playing is also as seamless as ever. All told, "A Vintage Year" is a vintage collaboration. C.A.

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Stereo Review

CLASSICAL MUSIC

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

BELLINI: *Norma*. Joan Sutherland (soprano), Norma; Luciano Pavarotti (tenor), Pollione; Montserrat Caballé (soprano), Adalgisa; Samuel Ramey (bass), Oroveso; others. Chorus and Orchestra of the Welsh National Opera, Richard Bonyngue cond. LONDON ① 414 476-1 three LP's, ④ 414 476-4 three cassettes, ② 414 476-2 two CD's (149 min).

Performance: *Polite*
Recording: *Clear, resonant*

Under the roulades, trills, and coloratura leaps of *Norma* lies the elemental passion of love in a variety of manifestations—physical, maternal, jealous, filial, religious, patriotic. The miracle of the opera is that all these passions and the nineteenth-century conventions of operatic composition are welded into a unified, quite inseparable whole. When the opera is performed by artists so proficient as to be undaunted by the difficulties of the score, and so dramatically involved that the artificialities of the plot are set aside to lay bare the underlying human struggle, *Norma* emerges as one of the great music dramas—as no less a musical-dramatist than Richard Wagner called it.

By those criteria, this new recording cannot be called wholly successful. It is very musical. The glory of Bellini's vocal writing and the texture of his orchestration are always evident. The singing of the principal artists is accurate and phrased with professional polish. But the dramatic involvement, the passion enkindling the final fires, both emotional and actual, is missing.

Joan Sutherland, always a singer who astounds the ear more than she galvanizes the heart, first recorded the opera in the mid-Sixties. At that time "*La Stupenda*," as she is affectionately known to many of her admirers, was indeed stupendous, accomplishing the most extraordinary vocal feats with prodigious ease and fleetness. In the present recording, a more accurate sobriquet might be "*La Superba*." She sings, as always, with accuracy, fluidity, and technical expertise—a living lesson in how to use the voice. Unfortunately, we are made constantly aware of the lesson.

Sutherland's performance is very careful: High notes that should ring with emotion are floated *pianissimo*; coloratura trceries, their tonal amplitude reduced, are delivered with considered precision rather than with seeming abandon. And, regrettably, the voice itself no longer soars like an arrow, clean and on target, but has audible frailties and wobbles. After the many, many years of immense pleasure she has given us, this is certainly understandable. My real regret is that Dame Joan undertook to rerecord the opera at all, when a digital remastering for CD of her earlier version would have done nicely.

As Pollione, Luciano Pavarotti sings with unusual beauty of tone but without great identification with the part, and casting Montserrat Caballé as Adalgisa doesn't help matters. Hers is not a small voice, but when it is compared with Sutherland's wonted fullness of tone, it sounds slim at times, and there is not enough contrast in timbres to bring off the big scene between the two women that culminates in "*Mira, o Norma*."

Samuel Ramey, as Oroveso, pours out his full, dark, admirably schooled bass in what is perhaps the most satisfying performance in the recording. And yet, once again, I must quibble: There is in much of Ramey's work a benign quality that somehow stands between his artistry and the effects he sets out to achieve. He is too patriarchal to be credible as the avenging leader his role calls for. Finally, Diana Montague and Kim Begley acquit themselves well in their smaller but pivotal roles as Clo-

Joan Sutherland: a living lesson



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tilde and Flavio, respectively. The chorus and orchestra of the Welsh National Opera perform handsomely in the expertly engineered recording, and Richard Bonyngue conducts with his usual mastery. R.A.

BRAHMS: *Concerto in A Minor for Violin, Cello, and Orchestra, Op. 102*. Isaac Stern (violin); Yo-Yo Ma (cello); Chicago Symphony Orchestra, Claudio Abbado cond. ***Piano Quartet No. 3, in C Minor, Op. 60*.** Emanuel Ax (piano); Isaac Stern (violin); Jaime Laredo (viola); Yo-Yo Ma (cello). CBS ① IM 42387, ② IMT 42387, ③ MK 42387 (68 min).

Performance: *Four-star*
Recording: *Very good*

It is hard to imagine better or more satisfying performances of these two difficult works. The Double Concerto—big, thick, brooding—is probably the least played of Brahms's mature orchestral works, and the C Minor Quartet is the least known of the chamber works with piano. The fine musicians here carry off these huge pieces not by lingering too long over the rich and gorgeous detail but instead by working the long lines and big gestures to their fullest. The lushness is in the sound.

The concerto was, of course, recorded in Chicago, and it's clear that this music is meat and potatoes for the principals—Isaac Stern, Yo-Yo Ma, and Claudio Abbado. The quartet, however, comes from Suntory Hall in Tokyo. Japan can afford the all-stars in more than one area of music, and Stern, Ma, Emanuel Ax, and Jaime Laredo are certainly a dream chamber-music cast. The C Minor Piano Quartet is, in many ways, a curious work—begun in the mid-1850's and only finalized (so to speak) by Brahms twenty years later; even these players have a little trouble threading their way through the stretched-out, Fourth-Symphony-like finale. Nevertheless, it is a strong and revealing performance. The string sound is superb, the piano tone a little squishy for my taste, though it blends in perfectly. E.S.

DEBUSSY: *La Damoiselle élue; Prélude à l'après-midi d'un faune; Images pour orchestre No. 2 ("Ibéria")*. Maria Ewing (soprano); Brigitte Balleys (mezzo-soprano); London Symphony Chorus and Orchestra, Claudio Abbado cond. DEUTSCHE GRAMMOPHON ④ 423 130-4, ② 423 130-2 (49 min).

Performance: *Atmospheric*
Recording: *Superb*

Although Debussy is commonly referred to as an Impressionist, it is really with the Pre-Raphaelite and *art nouveau* movements that his work should be identified. Nothing makes this clear-

er than the early cantata *La Damoiselle élue*, submitted by the composer in fulfillment of the Prix de Rome. Winners of this prize were supposed to create in Rome and send back to Paris academic works based on classical or historical subjects. By 1887, Debussy had already snuck back to Paris from Rome and took for his subject a new French translation of an all-but-incomprehensible poem by the British Pre-Raphaelite painter and poet Dante Gabriel Rossetti. *The Blessed Damozel* is a sort of early version of *Mélisande*—highly sensual, totally innocent, a creature from some unknown sphere with that mixture of sex and spirituality so adored by late-nineteenth-century aesthetes. Heady stuff for the Rome Prize academicians.

In 1894, Debussy completed a work based on even more mysterious poetic images by Mallarmé, whose evocation of the consciousness of a faun inspired one of the most original and unprecedented pieces of music ever written. At the time he composed *Damoiselle*, Debussy was not yet capable of quite the level of originality he achieved in the *Prélude à l'après-midi d'un faune*. But *Damoiselle* is a very attractive and evocative work in its own way, and it is so seldom heard that it makes a fresh impression even today—especially in this atmospheric performance by Claudio Abbado and the London Symphony. The *Prélude* gets an equally stunning performance. Only the outer movements of *Ibéria*, a work in quite a different style, seem to misfire; they require a kind of energy that is not quite achieved here. The orchestral sound, however, is superb throughout. *E.S.*

GIULIANI: *Guitar Concerto in A Major, Op. 30*. **VIVALDI:** *Guitar Concerto in D Major; Guitar Concerto in A Major; Concerto in D Minor for Guitar and Viola d'Amore*. Eduardo Fernández (guitar); Norbert Blume (viola d'amore); English Chamber Orchestra, George Malcolm cond. LONDON © 417 617-4, © 417 617-2 (58 min).

Performance: *Delightful*
Recording: *Very good*

Combining Italian lyricism with German sentimentality, Giuliani's A Major Guitar Concerto is a particularly felicitous work, especially when the soloist is someone like Eduardo Fernández. This fine guitarist brings such splendid musicianship to his performance here that you never have to worry about those vulgar little slides that mar so much of today's guitar playing. The Vivaldi works are equally well done, with George Malcolm and the English Chamber Orchestra providing strong but discreet support. *S.L.*

(Continued on page 94)

GREAT MASSES



Conductor Robert Shaw

ROBERT SHAW, who recently ended his twenty-one-year tenure as music director and conductor of the Atlanta Symphony Orchestra and Chorus, has recorded most of the landmarks of the choral-orchestral literature over the past decade or so. Now Telarc has released a two-CD set in which Shaw takes on Beethoven's titanic *Missa solemnis* as well as Mozart's imposing, though incomplete, "Great" Mass in C Minor. While the Beethoven performance is somewhat disappointing, the Mozart is a total success, superbly performed and splendidly recorded.

Although it was Shaw who prepared the chorus for Toscanini's historic 1953 recording of the *Missa solemnis*, I cannot say that he achieves comparably incandescent results on his own. Nor does the performance catch fire in the manner of the two recordings by Leonard Bernstein or even the latest of Herbert von Karajan's four versions. Shaw excels in the more reverential and mystical episodes, but a direct comparison of Shaw's and Karajan's readings of the opening of the *Gloria* shows that the latter conveys the music's Promethean grandeur far more effectively, and the same is true in other passages. At no point is the Shaw performance less than good; it simply does not match the competition.

A big plus, however, is Shaw's very well-matched team of soloists, who excel both individually and in ensemble. The chorus acquits itself nobly in the face of Beethoven's superhuman demands on the upper vocal register, but its sound is somewhat recessed compared with Karajan's recording. The

overall balances cannot be faulted, though, and the sonic texture is rich and clear at the same time.

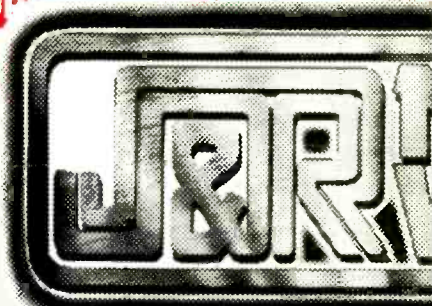
The Mozart Mass, recorded eight months later than the Beethoven, has distinctly better choral presence, and the performance is marvelous: majestic in the opening *Kyrie*, austere in the "Gratias agimus" section of the *Gloria*, thrilling in the epic fugal textures of the "Cum sancto spiritu" and the *Sanctus*, and tragically eloquent in the "Qui tollis." Like Raymond Leppard in his 1974 Angel recording, Shaw has used an edition of the score that includes only those parts Mozart actually completed, omitting the last part of the *Credo* and all of the *Agnus Dei*.

The soloists are excellent here, too. Canadian soprano Edith Wiens is especially outstanding in the immensely difficult, florid settings of the "Laudamus te" and "Et incarnatus." At more than fifty-seven minutes long, the Mozart Mass would not be unduly short measure if issued separately on CD, rather than as filler for a less than completely successful Beethoven *Missa solemnis*.

David Hall

BEETHOVEN: *Missa solemnis in D Major, Op. 123*. Sylvia McNair (soprano); Janice Taylor (mezzo-soprano); John Aler (tenor); Tom Krause (baritone); Atlanta Symphony Chorus and Orchestra, Robert Shaw cond. **MOZART:** *Mass in C Minor (K. 427, "The Great")*. Edith Wiens (soprano); Delores Ziegler (mezzo-soprano); John Aler (tenor); William Stone (baritone); Atlanta Symphony Chorus and Orchestra, Robert Shaw cond. TELARC © CD-80150 (two CD's) (139 min).

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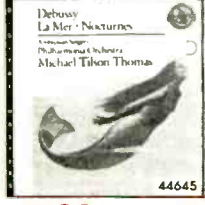
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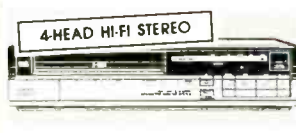


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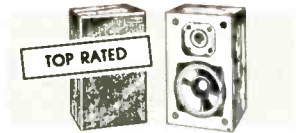


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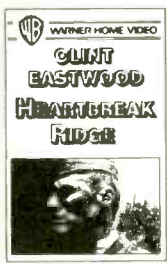


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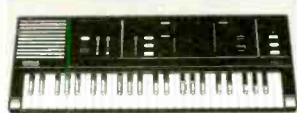


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MENDELSSOHN: *Songs Without Words—selections* (see Best of the Month, page 71)

MOZART: *Requiem in D Minor (K. 626); Ave Verum Corpus (K. 618)*. Patrizia Pace (soprano); Waltraud Meier (mezzo-soprano); Frank Lopardo (tenor); James Morris (bass); Swedish Radio Choir; Stockholm Chamber Choir; Berlin Philharmonic Orchestra, Riccardo Muti cond. ANGEL © CDC-49640 (58 min).

Performance: *Dramatic*
Recording: *Excellent*

There are already at least sixteen recordings of the Mozart Requiem on compact discs, and there seems to be a new one every few weeks. While some new recordings have brought us such stimulating corrective or reconstructive efforts as Richard Maunder's paring down to the sections unarguably composed by Mozart himself (conducted by Christopher Hogwood on L'Oiseau-Lyre), and the less radical Franz Beyer edition (recorded by several conductors recently), most continue to give us the long-established "standard" version completed just after Mozart's death by his sometime amanuensis, Franz Xaver Süssmayr. Not surprisingly, Riccardo Muti here opts for the Süssmayr, and he gives a fine account of it, with a convincingly dramatic thrust that suggests an approach based on a good sense of theater.

There are many strong points in this performance. The Berlin Philharmonic is in top form and benefits from a really superb recording—perhaps the best yet made in the Philharmonie itself. The two Swedish choruses are excellent, and so are most—but regrettably not all—of the soloists. The American tenor and bass are splendid; the majesty that James Morris brings to the "Tuba mirum" is quite remarkable. Waltraud Meier, too, brings a sense of assurance with her warm, rich, steady-on delivery. It's the soprano, Patrizia Pace, who's the weak wheel here, and the dryish, pinched quality of her singing is only thrown into higher relief by the warmth of Meier's.

With all the other elements so strong, this one unattractive feature may not be that hard to live with, but among the many other recordings of the Süssmayr version on CD there are at least two or three that strike me as more compelling (all of them are on Philips). First there's the one conducted by Peter Schreier, then the vivid "original instruments" performance under John Eliot Gardiner. The twenty-one-year-old Colin Davis recording is still attractive, too, though it does not compare with the others sonically and is surpassed in some details of performance as well. The *Ave Verum Corpus* that fills out Muti's disc, in which the soloists are not a factor, is done exquisitely but may not swing many decisions. R.F.

RACHMANINOFF: *Piano Concerto No. 2, in C Minor, Op. 18* (see Best of the Month, page 74)

R. STRAUSS: *Metamorphosen, for Twenty-three Solo Strings; Sonatina No. 1, in F Major, for Sixteen Wind Instruments ("From an Invalid's Workshop")*. Vienna Philharmonic Orchestra, André Previn cond. PHILIPS © 420 160-4, © 420 160-2 (61 min).

Performance: *Glowing*
Recording: *Refulgent*

These "Indian summer" works of Strauss, composed during the most difficult days of World War II, provide ideal vehicles for André Previn to show off the strings and the winds of the Vienna Philharmonic. With the help of the Philips production staff, he has given us a glowing showcase for some of the world's finest musicians.

The poignantly elegiac *Metamorphosen*, with its self-generated growth of thematic material, interwoven with the funeral-march motif from Beethoven's *Eroica*, emerges with great warmth and eloquence under Previn's direction, if not with the searing intensity of Karajan's realization with the Berlin Philharmonic on Deutsche Grammophon.

The delightful surprise in this release, however, is the F Major Sonatina, one of two pieces that Strauss wrote as "wrist exercises" to keep his composing faculties in trim. This three-movement work is somewhat shorter than the later Sonatina in E-flat Major, and I find it the more interesting of the two. While both purport to be experiments in pitting woodwinds against horns, the re-

Nigel Kennedy: brilliant Walton



sult in this case is music that bubbles and chatters along mellifluously in a way that would have delighted Mozart. Though the work was composed after a bout of illness, you would never think of the music as being "from an invalid's workshop." Echoes of *Der Rosenkavalier* turn up in the middle movement, and the finale abounds in delightful fugal textures and quotations from several of Strauss's youthful scores. The performance here is of the very best, with sound to match. D.H.

TCHAIKOVSKY: *Piano Concerto No. 1, in B-flat Minor, Op. 23* (see Best of the Month, page 74)

VIVALDI: *Guitar Concertos; Concerto for Guitar and Viola d'amore* (see GIULIANI)

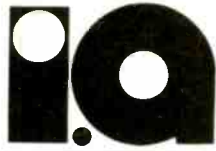
WALTON: *Viola Concerto; Violin Concerto*. Nigel Kennedy (viola, violin); Royal Philharmonic Orchestra, André Previn cond. ANGEL © CDC-49628 (57 min).

Performance: *Superb*
Recording: *First-rate*

Yehudi Menuhin recorded both of these concertos, with Walton himself conducting, on this same label nearly twenty years ago. It is certainly an apt coupling, and the new recording is more welcome than a CD transfer of the Menuhin would have been. Despite Menuhin's eloquence and commitment, and despite the participation of the composer, those performances did not take you "inside" the music as the new ones do. That the young Englishman Nigel Kennedy is as persuasive a violist as he is a violinist may come as a surprise, but the level of identification he achieves with both of these concertos should surprise no one familiar with his exceptional accounts of British music in particular and of twentieth-century music in general. As for André Previn, his outstanding effectiveness in Walton's music has been demonstrated many times in concerts and recordings. Together, Kennedy and Previn achieve an exceptional level of responsiveness, to each other as well as to the music. Their performances are very brilliant and very probing; they manage to illuminate dozens of exquisite little points in both works without affecting the momentum of their performances or losing sight of the big picture.

For all the Violin Concerto's association with Jascha Heifetz, who commissioned it and whose style largely determined its nature, the Viola Concerto, composed a decade earlier (1929), strikes me as a somewhat weightier work, more concerned with substance than with bravura. (Its premiere, by the way, was given by Paul Hindemith, for years an active violist.) But the playing here is stunning, and the recorded sound is absolutely first-rate in every respect. R.F.

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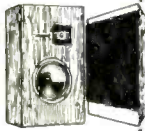
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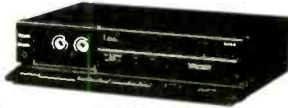


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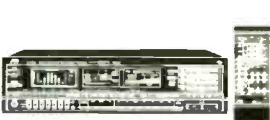
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by Christie Barter
& Ron Givens

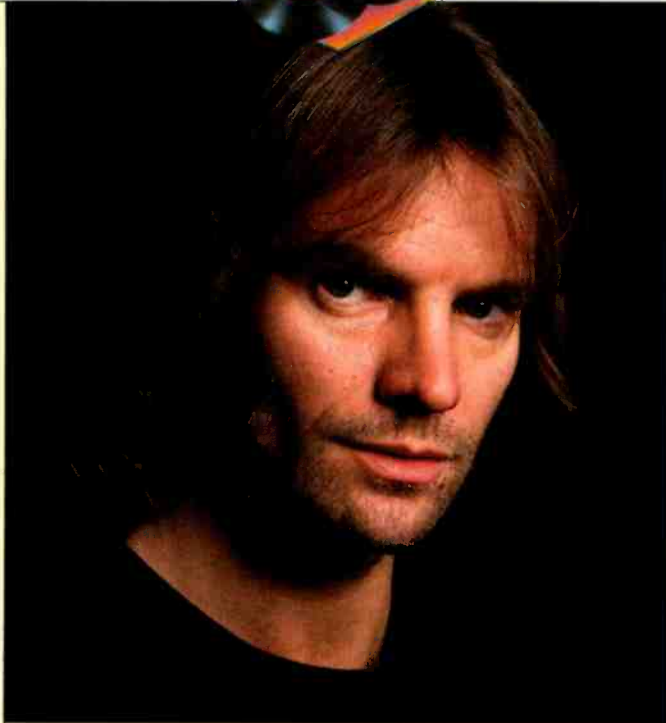
A NEW label called Pangaea—literally “all lands”—has been formed by pop superstar-actor **Sting** in association with Christine Reed (formerly of CBS Masterworks) and Miles Copeland (of I.R.S. Records, the new label’s distributor). Sting has defined Pangaea’s philosophy as “creative anarchy.” Copeland further explained that the three of them “have been working to support new trends in music. . . . We plan to be nondiscriminatory in our signings, picking up people from the pop, rock, jazz, classical, and avant-garde worlds.”

Pangaea’s first release, in June, included an album by the young saxophonist and composer **Steve Coleman**, described by the label as being “in the vanguard of a new wave of innovative jazz musicians who claim the entire spectrum of music as their natural birthright,” and one by the twenty-five-year-old acoustic guitarist **Fareed Haque**, a member of Paquito D’Rivera’s Havana New York Ensemble. July’s Pangaea release included a re-recording of Stravinsky’s *The Soldier’s Tale* in which co-founder **Sting** takes the role of the Soldier, **Vanessa Redgrave** plays the Devil, and **Ian McKellen** is the Narrator. **Kent Nagano** conducts the London Sinfonietta. □

Williams: legit



SID SCHRIER



Sting: creative anarchy

IT seems natural that **Vanessa Williams**’s breakthrough in the entertainment world would come as a singer. After all, the first black Miss America, who lost her crown in 1984 because nude photos of her were published, had studied music extensively and sang *Happy Days Are Here Again* as evidence of her talent during the Atlantic City pageant. So it shouldn’t have been a surprise that her first album, “The Right Stuff,” entered the charts quickly, largely on the strength of her groove-heavy title track. A total of six different producers worked on “The Right Stuff,” which features tender ballads as well as out-and-out funk.

Since resigning her title, Williams has worked on a variety of projects, including modeling, theater, films, and television. But “The Right Stuff” means a lot to her: “It legitimizes me in the eyes of many people who might see me as a celebrity with no apparent niche,” Williams has said. “I can understand that view, but I’m serious about my work. This is a record that stands on its own, and I’m proud of it.” □

WHEN you go to see the movie *Young Guns*, coming soon to a theater near you, watch very closely for the big-screen debut of **Randy Travis**. The Brat Pack western, which stars **Charlie**



Travis: big-screen debut

Sheen, **Emilio Estevez**, and **Lou Diamond Philips**, features a cameo performance by Travis as a bad guy who orders someone to be killed. With long sideburns, a scar, a

moustache, and a hat all working to cover his face, Travis may be hard to spot.

But even if his acting in the movie doesn’t draw a lot of attention, two new Travis records will. His third Warner Bros. album, “Old 8 x 10,” has the kind of music his fans have come to expect. The first single from it, *Honky Tonk Moon*, is an upbeat number with a bluesy flavor. And coming up soon, in time for early holiday shopping, is Travis’s Christmas album, with five old favorites and five new tunes. □

DESCRIBED by the Los Angeles *Times* as “one of the great white hopes of the post-Pavarotti generation,” American tenor **Jerry Hadley** recently returned to the U.S. after a triumph singing his first Tamino in Mozart’s *The Magic Flute* at the Vienna State Opera. He came back especially to be on hand for an important domestic debut—the birth of his first child, a son.

Hadley was also anticipating the August launch of three major recordings in which he is featured: the all-American-cast *La Bohème* recorded in Rome by **Leonard Bernstein**

for Deutsche Grammophon, a new London set of Donizetti’s *Anna Bolena* in which he co-stars with **Joan Sutherland**, and the first full-length recording, on Angel, of Je-

MALCOLM CROWTHERS/PANGAEA RECORDS

WARNER BROS. RECORDS



rome Kern's *Show Boat*, in which he sings the role of Gaylord Ravenal. Other recordings Hadley has made that are due for release in the next few months include an album of vocal-orchestral music by Benjamin Britten for Nimbus and Mozart's *Il re pastore*, in which he sings Alessandro, for Philips. Conductor for the Mozart opera is Neville Marriner. □

IF you haven't seen Atlantic Records' 40th Anniversary Concert by now—either live at Madison Square Garden or on your TV screen—you just haven't been trying very hard. The twelve-hour extravaganza featured performances by a galaxy of stars from all periods of the label's history, including Ruth Brown from the blues and jazz days, the Bee Gees and a reunited Led Zeppelin from



version and a book-length collection of pictures taken at the Garden by ace photographer Annie Leibovitz. By the time all of this stuff gets into the marketplace, and sells whatever it will sell, somewhere between \$7 and \$10 million will have been raised for distribution to roughly a dozen charities.

"It was a lot of great music," said Barry Cooper, producer of the event and executive producer of the video spin-offs. "It turned out that a lot of good is being done, too." □

GRACENOTES: Two megabands from the Seventies, Little Feat and the Doobie Brothers, have got it together again, and albums are on the way. . . . New from the Whites is their first all-gospel album, "Doing It by the Book," on New Canaan/Word. The set of original tunes was produced by Ricky Skaggs and the Whites themselves. . . . It looks as if Steve Earle's new MCA album, "Copperhead Road" (release date August 31), will have a rockier feel to it. Among the guest artists are the Pogues and Maria McKee. □

Stars from Atlantic's galaxy: top, left to right, John Paul Jones, Robert Plant, and Jimmie Page of Led Zeppelin (photos: Gary Gershoff and Larry Busacca/Retna Ltd.); center, Laura Branigan (left) and Debbie Gibson (Larry Busacca/Retna Ltd.); bottom, the Bee Gees (Gary Gershoff/Retna Ltd.)



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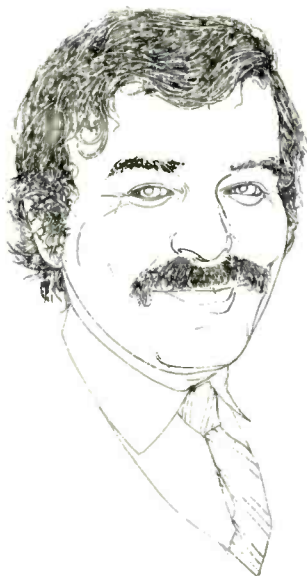
Hadley as Tamino

its early rock years, and such present-day hit makers as Laura Branigan and young Debbie Gibson. Of course, a big chunk of the show was broadcast live on HBO. And, yes, MTV gave us a show consisting of the behind-the-scenes activity. And, sure, ABC put together highlights for a prime-time special. But there's more to come. Much, much more.

HBO will present yet another version of the live program, edited down to a sizzling two hours, this fall. And if all goes well, a multirecord live album will be out by Christmas. Sometime next year there'll be a home video

THE HIGH END

by *Ralph Hodges*



Your Basic Blank Check

THERE are not very many estimable loudspeaker systems that are made all in the same place, and there are, therefore, innumerable frustrations. For instance, I spent some time with Jon Dahlquist during the design of the landmark DQ-10, and I heard much about researching drivers, acquiring drivers, testing drivers, and, most important, insuring consistency in drivers. The greatest blessing a designer could ask under such circumstances would be the opportunity to build his own drivers, with the resources to guarantee their correctness. Enter a new American company called Precise Acoustic Laboratories.

The Precise name is actually a bit of a masquerade. The company is a part of Onkyo, which made its first entry into the U.S. market more than a decade ago with a line of loudspeakers it considered a tour de force. The line suffered the fate of most Japanese loudspeakers here, and a switchover to electronics ensued. But Onkyo retained the facilities to make good loudspeakers, and they did not give up. They simply went looking for an American design engineer who could satisfy the

American market. They finally found Keith Johnson.

Johnson was featured in this space some months ago as an innovator in tape-recording technology, but he wears many hats and does a lot of constructive thinking about the entire audio chain. I recently interviewed Johnson about the five-model line of Precise speaker systems, which ranges in price from \$140 to \$750, a reasonable price structure having been one of the first objectives.

"The Japanese outlook on loudspeakers emphasizes purity of tone and very low distortion," he told me. "These are subjective terms and in some respects are probably synonymous. Rather than debate them, I went ahead and embodied them, according to my own lights, in a series of prototypes. Only then did we really address the question of whether Onkyo could manufacture them affordably and reliably and begin organizing a team effort."

Johnson's approach has been to analyze driver diaphragm behavior in a very local way, principally by moving a pinpoint-size velocity microphone across the diaphragm surface at a distance of about a thirty-second of an inch and identifying regions where severe spurious vibratory modes occur.

"We assume that these phenomena, which are very real, are significant contributors to driver coloration. Once we've found them, we can try to minimize them by cross-over manipulation, cone-thickness adjustments, strategic damping, or even by cutting tiny holes in the diaphragm, afterwards inserting a bit of membrane to restore the air seal. As a result, individual nodes become less defined, and the driver acquires more neutrality."

Very well. But an extensively stroked, doped, and tweaked driver is not an easily manufactured commodity. What comes next?

"When I complete a driver analysis, Onkyo gets a report on the physical location of the breakup difficulties, the frequencies at which they are manifested, and my estimation of their audible significance. It then becomes their job to cope with them in some practical way. Onkyo has by now duplicated my essential in-

strumentation, and, of course, once you've identified a problem, you can often make it show up in more conventional testing."

Johnson has prepared some tapes to demonstrate that drivers do indeed "sound" quite different near their dust caps than near their surrounds, and sometimes do not sound particularly pleasing anywhere. Most of his work to date has been conducted at levels between 70 and 80 dB, but he has seen ample evidence that different types of drivers behave differently at different levels, with soft-dome diaphragms being especially subject to variations. He hopes, in time, to get a better fix on these differences.

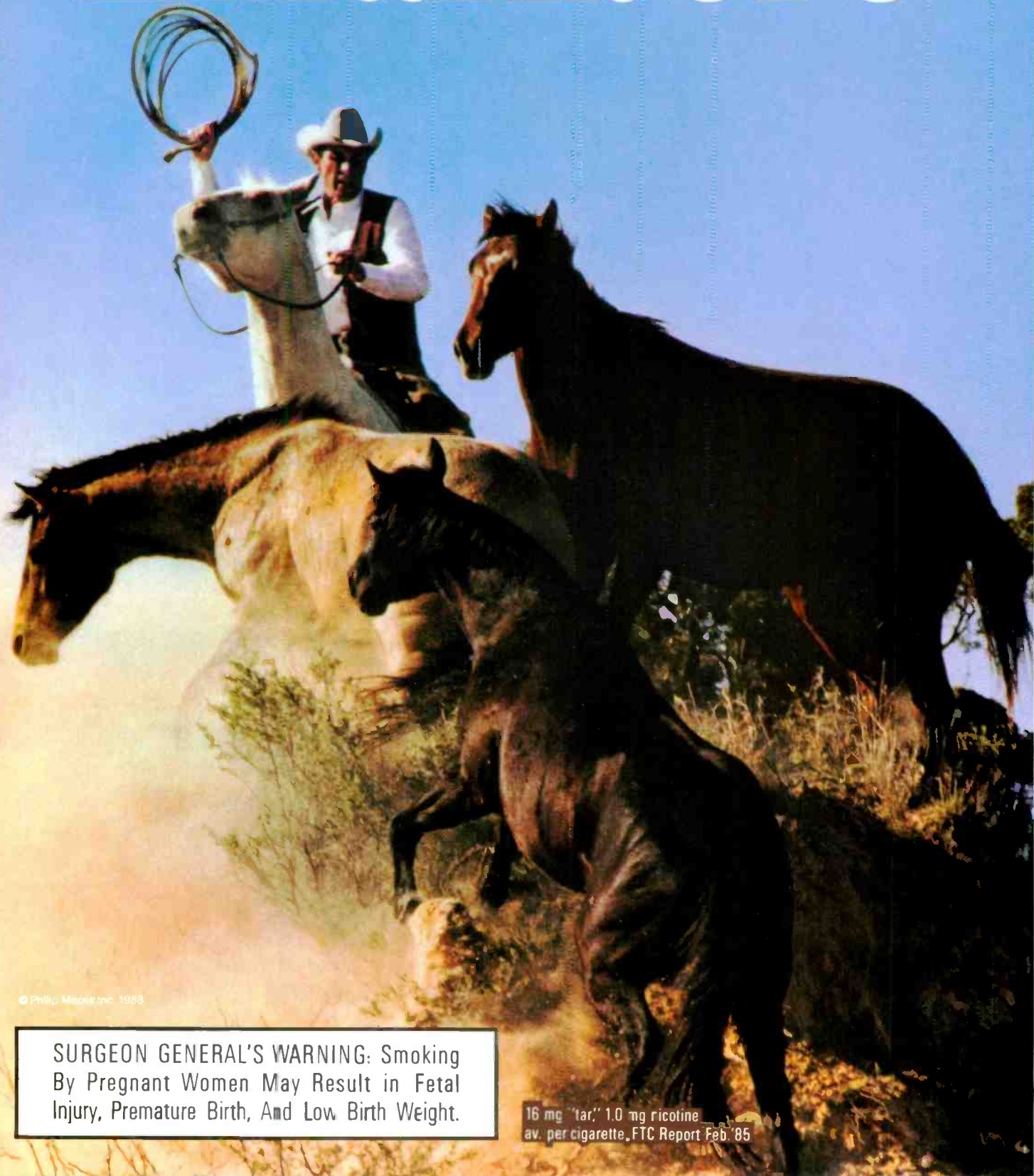
Drivers are only one aspect of speaker-system design, and Johnson's story doesn't stop with them. Although the Precise enclosures appear to be ordinary enough boxes, mostly of the ported variety, the Thiele alignments that have so dominated recent system design have not been applied.

"The Thiele parameters happen to be wrong for what we're trying to do," Johnson said. "Thiele's [formulas are] only concerned with single speakers in anechoic chambers. As a result, you can wind up with in-box resonances that are in exactly the wrong place when boundary reflections are considered. And since speaker interactions are not taken into account, you can expect serious trouble in that department as well." Johnson likes to shift box resonances down lower than you might expect them to be, getting them further away from major room effects and making sure they don't reinforce panel resonances.

Would planar-diaphragm design—electrostatic, for example—be of any help in avoiding the worst effects of resonances? Not really, Johnson thinks, because such diaphragms have plenty of strong resonances of their own. "I've built a number of electrostatics, and they usually start out sounding like they were made of credit cards. I've spent days and days trying to terminate the foil in a way that subdues the problems." Nevertheless, Johnson said he could see an electrostatic system fitting into the Precise line quite nicely—someday. □



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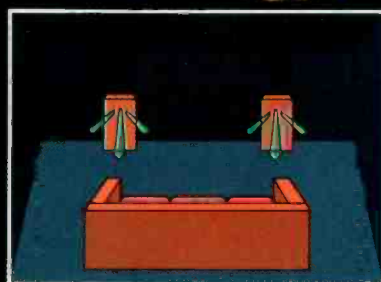
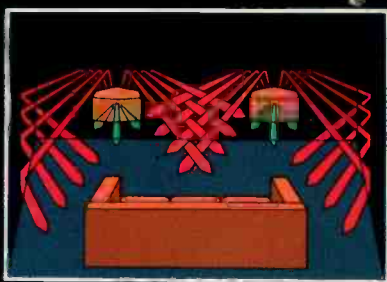
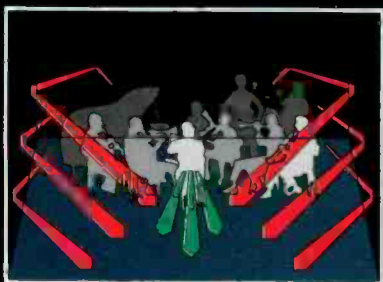


The Bose 901 system's Direct/Reflecting® speaker design turns your listening room into part of your stereo system. You'll hear *full stereo throughout the listening environment*—no matter where you sit or stand.



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In the concert hall (above left), listeners hear a complex mixture of direct and reflected sounds, arriving from different directions and at different times. Bose Direct/Reflecting® speakers (center) are designed to reproduce music in much the same manner, allowing listeners to hear greater realism and impact. Conventional speakers (above right), on the other hand, reproduce primarily direct sound, causing listeners to miss many of the critical acoustic cues that make live music sound live.

system. The 901 system works by reflecting most of its sound, instead of aiming all the sound toward you like a conventional speaker. So, anything you listen to over a 901 system—from digital audio to hi-fi video—picks up a sense of concert hall realism, because the system reproduces the natural concert hall balance of direct and reflected sound. Best of all, the 901 system's ultra-high efficiency and *unlimited power handling* in home applications make it compatible with virtually any stereo system.

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