EUROPEAN AUDIO: TRADITION AND INNOVATION
DIGITAL SOUND PROCESSORS
LAB TESTS: AKAI CD PLAYER, MARANTZ INTEGRATED AMP, AXIOM SPEAKER, AND MORE
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-Kappa Automotive sounding loudspeaker system ever made: the 7 1/2 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 component 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 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.
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.

## EQUIPMENT

### HIRSCH-HOUCK LABS EQUIPMENT TEST REPORTS
- Akai CD-93B Compact Disc Player, page 31
- Marantz PM-74D Integrated Amplifier, page 37
- Axiom AX-5 Speaker, page 42
- Harman Kardon Citation Twenty-Six Digital Audio Tape Recorder, page 44

### THE SOUND OF EUROPE
European audio equipment blends tradition with innovation  
*by Warren Berger*

### MAGIC SPACE
Digital sound processors from Lexicon and Yamaha can make your listening room into a jazz club, a concert hall, or a rock arena  
*by E. Brad Meyer*

## MUSIC

### 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*

### BEST RECORDINGS OF THE MONTH
- Tracy Chapman, Mendelssohn's Songs Without Words, Leonard Cohen, and Tchaikovsky and Rachmaninoff piano concertos

### RECORD MAKERS
- The latest from Sting, Vanessa Williams, and Randy Travis, Atlantic Records' 40th Anniversary Concert, and more

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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.

Stereo Review Buyer Poll, See Page 89
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.
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.
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-R550, 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 America's "First Lady of Soul," has signed a recording contract with MCA Classics, which will release her performances of music by Albeniz 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.

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 8-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.
36 hours ’til Monday.  54 dollars and change.
Lee jeans.

The brand that fits.
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 may be 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 strams 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

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.

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

<table>
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©1988 Pioneer Electronics (USA) Inc., Long Beach, CA. Model shown: GM-4000. *Both channels driven into 4 ohms, 20 to 20,000 Hz.

CIRCLE NO. 31 ON READER SERVICE CARD
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.

polkaudio
The Speaker Specialists®
5601 Metro Drive, Baltimore, Md 21215

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

Discwasher, Inc., 4310 Transworld Rd, Schiller Park, Illinois 60176 (312) 678-9600.
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.

**Monitor Audio**

The RA2MD 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 ± 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 3/4 inches deep, and 25 1/2 inches high. Price: $1,099 a pair. Monitor Audio, Dept. SR, Kevro Electronics, Inc., P.O. Box 1355, Buffalo, NY 14205.

**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 dB in mono, 34 dB in stereo. Capture ratio is 10 dB. Price: $649. Sumo, Dept. SR, 21300 Superior St., Chatsworth, CA 91311.

**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 120 on reader service card

Circle 121 on reader service card

Circle 122 on reader service card

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 ± 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 Sully-field 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 6⅞ 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

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**Stereo Review** August 1988
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.

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.
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 x 20 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 5½-inch hyperbolic-dome tweeter, a 4½-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 8 ohms. Dimensions are 59¾ inches high, 19½ inches wide, and 9½ inches deep. The M-1's can be mounted on walls or ceilings with optional Omni-mount brackets. Price: $359 a pair; brackets, $30 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 5½-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 6 ohms. Dimensions are 69½ 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
Now there's a better way to orchestrate your autosound.

SAVE 37% on Car Stereo Review...new from the Editors of Stereo Review!

Until now, it always took a lot of time and effort to ensure "living room" sound from your car stereo. That's why the Editors of Stereo Review are proud to introduce Car Stereo Review—the ultimate guide to ultimate autosound!

This is the world's first and only regular publication dedicated to the pursuit of high-quality autosound. Each issue will be packed with how-to articles for buying, installing, and maintaining audio equipment—so you can get more pure enjoyment from your car stereo than you thought possible.

Whether you're purchasing your first car stereo system or upgrading your present one, you'll want to check out our product reviews of all the latest autosound components. Our Equipment Test Reports make it easy for you to select the right components for your needs and your budget.

And our exclusive Road Tests feature users' evaluations of various installations under real driving conditions.

You'll also find money-saving shopping tips, expert advice for choosing an installer (or doing it yourself), car stereo security tips, CD and tape reviews—and fresh, updated listings of car stereo products, so you can compare features, specs and prices.

Here, then, is everything you need to know about car stereo, written by the Stereo Review experts who are in the know. Subscribe today and receive special Charter Subscriber rates: just $14.98 for six big issues. That's a 37% savings off the annual newsstand cost of $23.70!

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Offer valid in U.S. and possessions only. Please allow 60 to 90 days for delivery of first issue.
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 drive 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.
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 wire 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-1350 power amplifier yields peak SPLs exceeding 106dB, up to 110dB with our M-1 St! More than ample to deliver a symphonic orchestra some power fifth one center.

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.

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 redefine for you the very essence of music.

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 #4A drumstick on a Zildjian hi-hat cymbal. Or darken it with the smoky midnight growl of a battered baritone sax.

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

It 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.

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
MUSICAL

CIRCLE NO. 139 ON READER SERVICE CARD
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 bottle 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

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? 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 CDs, 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.

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 close 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 build 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-event programming and channel-switching capability.
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The fundamental octaves that so much of music is built on...

The almost subaudible 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.

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" × 21" × 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.

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.

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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.

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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" × 5" × 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...
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 misguided 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. Sony?" 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 placement and other related audio equipment.

To get literature, to chat—or to order—the toll-free number is 1-800-252-4434. (In Canada, 1-800-525-4434.) Fax # (617) 332-9229.

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What Product Reviews Can't Tell You

A 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 an 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 surveys, 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' ergonomic 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...
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.
Yes, now you can own **TOTAL HARMONIC DISTORTION** by Charles Rodrigues!

This handsome, 128-page paperback—with 118 classic cartoons, a foreword by William Livingstone, and an illustrated autobiographical sketch by Rodrigues himself—is only $7.95. Enjoy your favorites again, catch the gems you missed, and share the laughs with friends!

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

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

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

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

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

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

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

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

*Both channels driven into 8 ohms, 20Hz-20kHz, 0.04% THD

One Less Barrier Between You and Your Music—
Concord changed car stereo forever. In those days, 8-track tape reigned supreme and the idea of high quality sound in a car was considered impossible. By challenging that belief, Concord appealed to a select few who demanded the best. High performance car stereo was born.

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 Concord as the reference standard for car stereo equipment.

Today Concord's leadership continues with the seven CX series cassette/receivers. The flagship CX70 incorporates the two most recent Concord Firsts—a 3-Band Bass/3-Band Treble equalizer and an active preamp level Subwoofer Crossover. The equalization system provides an extraordinary degree of control over the unpredictable acoustics of a car.

Consider Concord:

- 1977 First car deck with preamp outputs
- 1977 First car deck with preamp level fader
- 1977 First car deck with Sen-Alloy tape head
- 1977 First 50 watt car amplifier
- 1978 First in-dash deck with Dolby B™ noise reduction
- 1979 First car deck with switchable bass EQ system
- 1979 First car deck with D.C. Servo Motor
vehicle’s interior. The crossover allows easy system biamplification. In addition the CX70 has a removable chassis that lets you protect your investment in good sound.

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.

Putting all the performance and control features of the CX70 in a car stereo unit could result in a jumble of indecipherable, hard to use controls.

But the large dual function, color coded controls of the CX units make it easy to get the most from their exceptional performance.

The CX70 is just one of seven CX cassette/receivers that incorporate a variety of the Concord Firsts. When used in conjunction with Concord’s CS speakers and, for the greatest fidelity at higher volume levels, the Concord CA amplifiers, the CX cassette/receivers provide a level of musical enjoyment that will have you dreaming up reasons to spend more time in your car.

Consider the Concord Firsts and you’ll consider Concord first.

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1983
First car deck with 2/4 way amplifiers

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 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 6½” 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.)

247 Lynnfield Street, Peabody, MA 01960 (617) 532-2111
A 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 ⅛ 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-
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 on the display. 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.


**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-slamming 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
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 just how our Direct-Coupled Liquid-Cooled Lens System, Single Front-Surface Mirror, Dynamic Picture Optimizer, 160mm Power Lenses and Super High Voltage CRT's work together to yield a once-unreachable 350 foot-lamberts of brightness.

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The SD-P401 is of course fully cable-capable. Stereo-capable too, with its MTS decoder. It has all the inputs and outputs needed for the most complex A/V system. And it's only 23 inches deep.

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©1987 Pioneer Electronics (USA) Inc., Long Beach, CA  Actual closed-circuit picture shown.
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AMERICA’S BEST.
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 "Quarter A" 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 Quarter A system effectively eliminates the crossover 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 (primary) 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 pushbuttons, 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/PHTONO 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, 14 1/4 inches deep (including the speaker binding posts), and 6 5/8 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...
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 0.283 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**
EXCELLENCE IN ANY LANGUAGE.

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Stereoplay Magazine, Germany
—Hans Ulrich-Fessler

"...Een Serieus Produkt..."
HiFi/Video/Test Magazine, The Netherlands
—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
"Absolute Spitzenklasse"—a performance rating of "top class"—is how one of Germany's leading audio magazines rates the newest Philips CD player.

The Swiss called one of Philips' newest components "a new dimension in sound."

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WORLD-CLASS TECHNOLOGY. EUROPEAN EXCELLENCE.
**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.
Distortion 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 \( \pm 0.1 \) 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 any possible 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*
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 employed 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.
The McIntosh XRT 22 Loudspeaker System delivers

The McIntosh XRT 22 is the purest expression of the loudspeakers scientist’s endeavors. It is the one right combination of component parts that has eluded the diligent searcher for the loudspeaker bridge to the dominion of reproduced musical reality. The high-frequency radiator column is an illustration of the right combination. The 23 tweeter elements can reproduce 300 watts sine wave input power at 20 kHz, with the lowest measured intermodulation distortion. Because each tweeter mechanism handles a small quantity of the total power, extremely low quantities of distortion are developed. The total column radiates the energy in a half cylindrical time co-ordinated sound field. The low distortion, transparency of sound, coherence of sound images, definition of musical instruments, and musical balance is simply a revelation that you must experience.

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

Extra Realism
Extra Depth
Extra Spaciousness
Extra Smoothness

CIRCLE NO. 29 ON READER SERVICE CARD
For information on the McIntosh XRT 22 SPEAKERS and other McIntosh products write:
McINTOSH LABORATORY INC.
P.O. Box 96 EAST SIDE STATION, DEPT. SR 127
BINGHAMTON, NY 13904-0096
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 highlighted 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 17¾ x 4¾ x 12¾ 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
INTRODUCING SOUND
AS IT WAS MEANT TO BE HEARD
IN PLACES IT WASN'T.

For years, Baby Advent® bookshelf speakers proved that you don't need a lot of space to enjoy accurate sound. With our new Mini-Advents and Mini-Advent/Subwoofer System, you can get that sound in places you never dreamed of.

Mini-Advents are designed for people with little room for loudspeakers. Less than a foot tall, they fit on bookshelves, tables, even walls and ceilings, when using optional mounting brackets. Perfect for completing a surround sound system.

THEY'RE SMALL, BUT DEFINITELY NOT SHORT ON SOUND. Our 5¼" high excursion woofers and ½" polycarbonate dome tweeters supply Mini-Advents with 120 watts peak power—quite powerful for speakers this size. Tuned bass ports, too. So that Mini-Advents get every ounce of bass from such a small speaker cabinet.

FOR EVEN GREATER SOUND FROM SMALL SPEAKERS, THERE'S OUR SUBWOOFER SYSTEM. When connected to the Mini-Advents, our subwoofer creates a 165-watt three-way speaker system by directing the high and midrange frequencies to the Mini-Advents while handling the bass frequencies itself. The amazing thing is that our subwoofer can give your system extra bass and added power while remaining out of sight. Only seven inches tall and twelve inches wide, it fits neatly in any corner and sounds great behind couches or plants.

Like all our speakers, Mini-Advents are designed to look as good as they sound. Made with real pecan wood, they'll look terrific wherever you put them.

Now that you know all about these great-sounding loudspeakers that take up little space, take a little time and listen to a pair at your nearest Advent dealer.
The Sound of Europe

European audio blends tradition with innovation.

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 fur-helmeted 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...
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 ± 3 dB) or in combination with Jamo's SW-50 subwoofer as shown.
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 3¾ inches deep.

Andenberg'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 Muller 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 ...

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 lifestyle 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
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.

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.

The 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 B&W a/d/s/ CC4 tuner/preamp, designed in Germany, has the same control functions as the microprocessor-based a/d/s/ R4 receiver. Price: $1,000.

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."

Price: $2,450.
Price: $5,000 a pair.
Price: $1,000.
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 audio-ophile 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 direction: "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, Tandy, 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 eraseable/recordable two-sided discs that held 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.

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

Blu-ray's top car products include the CDP 05 CD player ($650), the SC-XN-A electronic crossover ($290), and the stalk-mounted Dallas SQM 88 tuner ($370).

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.
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 manufacturers such as Linn, Ariston, Dual, and Thorens are more than holding their own. Some feel that the re-sounding 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,
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.

M eridian'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.

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

BY RON GIVENS
I 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 (cartoon 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 decided 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, unfocused 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 disasters ("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 Town; I'm Just Your Man; OK Heronymus; 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).
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.
The 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.

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**Lexicon CP-1 Programs**

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<tr>
<th>PGM</th>
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<th>TYPE</th>
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<tr>
<td>1</td>
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<td>Expander</td>
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<tr>
<td>2</td>
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<td>Ambience</td>
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<td>Surround</td>
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<td>Stereo Logic</td>
<td>Surround</td>
<td>L + R, L - R</td>
</tr>
<tr>
<td>12</td>
<td>Pro Logic</td>
<td>Surround</td>
<td>L + R, L - R</td>
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sound. When a film is transferred to videotape or videodisc, the soundtrack contains 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
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.

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 reverber programs have only a single version each, is a clue that reverber 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 reverber 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 crosstalk-cancellation circuit that keeps the left ear from hearing the sound coming from the right speaker, and vice versa. Canceling such interaural crosstalk widens the stereo image to span almost the entire front stage, 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 move 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 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 set-up like that in Figure 1. Stereo Logic is basically Pro Logic with more adjustable parameters.

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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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

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

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).

Chapman: a guided tour of her life and ours
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


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 virtuoso 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 pronounced 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 interpretative 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.

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**DISCS AND TAPES REVIEWED**

**THE ADVENTURES: The Sea of Love.** The Adventures (vocals and instrumental parts): instrumental accompaniment. Drowning in the Sea of Love; Broken Land: Heaven Knows Which Way; Hold Me Now; The Sound of Summer; and four others. Elektra 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 synthesizers. 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 suppleness, 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.

The three core 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 glories in the summer of his youth, and...
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. MCA MCA-6228, © MCA-6228, MCA/56228, MCA-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 recognizable 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 Wendell’s The Roach, which most folks assumed was a gag song written for the movie rather than an authentic nusio 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 HORNBSY 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. MCA MCA-6228, © MCA-6228, MCA-6228, MCA-6228 (31 min).

Performance: Wonderful

Recording: Sixties sound

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.

Reared 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 evangelism, 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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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. 

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).


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, 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.

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'; Tap Manhattan; Make Believe Ballroom; Sposin'; Guess Who's in Town; and five others. ATLANTIC 81778-1, © 81778-4, © 81778-2 (38 min).


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 Deniker.

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.

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


The world's last great Sixties-purist pop band returns, and this follow-up to the Smitherreens' 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.
More For My Money

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

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LITTLE DISCS, BIG HITS, PURE GOLD

How many times has this happened to you? You're standing at the oldest bin of your favorite record store. You're glassy-eyed with nostalgia. You're holding an album by a group that blazed across the charts like a shooting star, producing only a few golden memories. You're dusting off the hits on the I.P. You're loathing the schlock that fills up the rest of the disc. You're wondering why somebody can't think of a way to package hits the way Alpo cans dog food—without a speck of "cereal."

Well, somebody has. Rhino Records, the oldies-crazed label based in Santa Monica, California, has combined its relentless marketing savvy with the technology of the compact disc for its "Lil' Bit of Gold" series of twenty CD's. For a little under $6 apiece, you get four hits by the original artists in clean, crisp, digitally remastered sound. What a deal!

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'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; Runaround. 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 IMPE RiALS: Goin' Out of My Head; I'm on the Outside (Looking In); Hurt So Bad; Take Me Back. R3 73013 (10:39).

LITTLE RICHARD: Tutti-Frutti; Good Golly, Miss Molly; Slippin' and Slidin' (Peepin' and Hidin'); The Girl Can't Help It. R3 73014 (9:54).

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).

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<tr>
<th>Model</th>
<th>Price</th>
<th>Features</th>
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<tbody>
<tr>
<td>TOSHIBA XRP9</td>
<td>$159</td>
<td>Wireless remote, programmable. WAY BELOW COST!</td>
</tr>
<tr>
<td>SONY D-4</td>
<td>$179</td>
<td>SPECIAL PURCHASE</td>
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<tr>
<td>SONY D-15</td>
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<td>Smallest portable diskman with internal battery.</td>
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<tr>
<td>SONY CFD444</td>
<td>$217</td>
<td>Portable with disc player, cassette, and 5-band EQ.</td>
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### Disc Player's

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<tr>
<td>TOSHIBA XRV22</td>
<td>$129</td>
<td>Dual disc player. WAY BELOW COST!</td>
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<tr>
<td>TEAC AD4</td>
<td>$279</td>
<td>Combination CD/Cassette with Dolby B/C, auto-reverse, &amp; random programming</td>
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<td>SONY CDP31</td>
<td>$157</td>
<td>Wireless remote, RMS, AMS, repeat, and shuffle play.</td>
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<tr>
<td>TEAC PD600</td>
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<td>GUARANTEED LOWEST PRICE</td>
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### Car Stereo's

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<tr>
<td>SHERWOOD CRD210</td>
<td>$159</td>
<td>Auto-reverse with CD inputs, Dolby B + C, and high power.</td>
</tr>
<tr>
<td>SHERWOOD CRD350</td>
<td>$182</td>
<td>Digital DIN with CD inputs, Dolby B + C, and high power.</td>
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<tr>
<td>CLARION 8825RT</td>
<td></td>
<td>GUARANTEED LOWEST PRICE</td>
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<td>CLARION 8401RT</td>
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### Misc. Special's

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<td>GE RRC500</td>
<td>$65</td>
<td>PROGRAMMABLE REMOTE</td>
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<td>BEL 100</td>
<td>$39</td>
<td>RADAR DETECTORS</td>
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<td>CLARION 8625</td>
<td>$179</td>
<td>DIGITAL PHONE FF1100</td>
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<td>FREEDOM CORDLESS PHONE</td>
<td>$92</td>
<td>1000 FT range with intercom.</td>
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### Video Recorder's

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<td>JVC HRD630</td>
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<td>JVC HRS7000</td>
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<td>JVC HRS8000</td>
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<td>GUARANTEED LOWEST PRICE</td>
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<tr>
<td>SUPER VHS HIFI</td>
<td>$749</td>
<td>4-Head, MTS, on screen program, and variable slow motion.</td>
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### Camcorders

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<th>Model</th>
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<tr>
<td>JVC GRS55</td>
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<td>GUARANTEED LOWEST PRICE</td>
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<tr>
<td>RCA CPR300</td>
<td>$1079</td>
<td>AUTO FOCUS.</td>
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<tr>
<td>MOS IMAGE</td>
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</table>
GRP SUPER LIVE IN CONCERT.
Diane Schuur (vocals); Dave Grusin (keyboards); Lee Ritenour (guitar); Tom Scott (saxophone); Chick Corea Elecric Band; other musicians. Dedic's 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 @ GR-2-1650 two LP's. @ GRD-2-1650 two cassettes. @ 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 vocalist 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 Electric 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 few major lapses, there are also only a few moments of true excitement.

R.G.

JEAN-LOUP LONGNON AND HIS NEW YORK ORCHESTRA. Moments of New Year; Rock and Soul; Royal Garden Blues; and three others. ATLANTIC 81829-1, © 81829-4, © 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 seat vocalist, Longnon displays immense talent and good taste in this big-band album. The orchestra, co-led by saxophonist Ted Nash, is its only "nancie" member, 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. © CJ-342-C. © 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 quartet 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.
STEREO REVIEW wants to know more about our readers. How much equipment you buy (and how often), how much you spend on it, what sort of product features you like. That will help us create a better, more informative magazine, specially geared to your tastes and preferences.

To gather this important information, we’ve created the Stereo Review Buyer Poll. And we need your help to make it work.

If you’ve bought any equipment within the past 30 days, we’d like you to participate (see instructions below). We’ll use the information you give us to keep manufacturers up to date on the buying habits of stereo enthusiasts—the most knowledgeable group of audio buyers in the country. And in the long run, that will mean better service for you.

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You can participate in the Stereo Review Buyer Poll by sending in the Reader Service Card appearing next to this page. We’ve provided space for you to list any equipment purchased in the past 30 days. Any kind of audio/video equipment qualifies.

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- Turntable
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- CD player

Portable Stereo
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- Headphones

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- Tuner
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Fill in the type of equipment, manufacturer, model number, and price you paid. Include all the equipment you bought this month. Then print your name and address and drop it in the mail (we pay the postage). It’s that simple!
**CLASSICAL MUSIC**

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

**BELLIINI: 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 Bonynge cond. LONDON © 414 476-1 three l.p.'s, © 414 476-4 three cassettes. © 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 ramifications—physical, maternal, jealous, filial—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 artificiatives 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 vocal writing and the texture of his orchestration are always evident. 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, 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-1830s 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-Symphonyleike finale. Nevertheless, it is a strong and revealing performance. The string sound is superb, the piano tone a little squishy for my taste, but it blends in perfectly.

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

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**EXPLANATION OF SYMBOLS:**

1. **= Digital-Master LP**
2. **© = Tape Cassette**
3. **= Compact Disc** (timings are to nearest minute)
er than the early cantata La Damoselle 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 Méliès-and-highly sensual, totally innocent, a creature from some unknown sphere with that mixture of sex and spirituality so adored by late-nineteenth-century aesthetes. Handy 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 Damoselle, Debussy was not yet capable of quite the level of originality he achieved in the Prélude à l'après-midi d'un faune. But Damoselle 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 Iberia, 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)
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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 London’s Chandos) 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 the contents.

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 regretfully 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 most 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 result 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 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 violinist as he is a violist may come as a surprise, but the level of identification he achieves with his instrument 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 première, by the way, was given by Paul Hindemith, for years an active violinist.) But the playing here is stunning, and the recorded sound is absolutely first-rate in every respect.

R.F.
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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 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.

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 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-
F 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 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 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 mega-bands 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.)
by Ralph Hodges

THE HIGH END

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 crossover 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 instrumentation, 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 vibrations. 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 electrostats, 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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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.

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