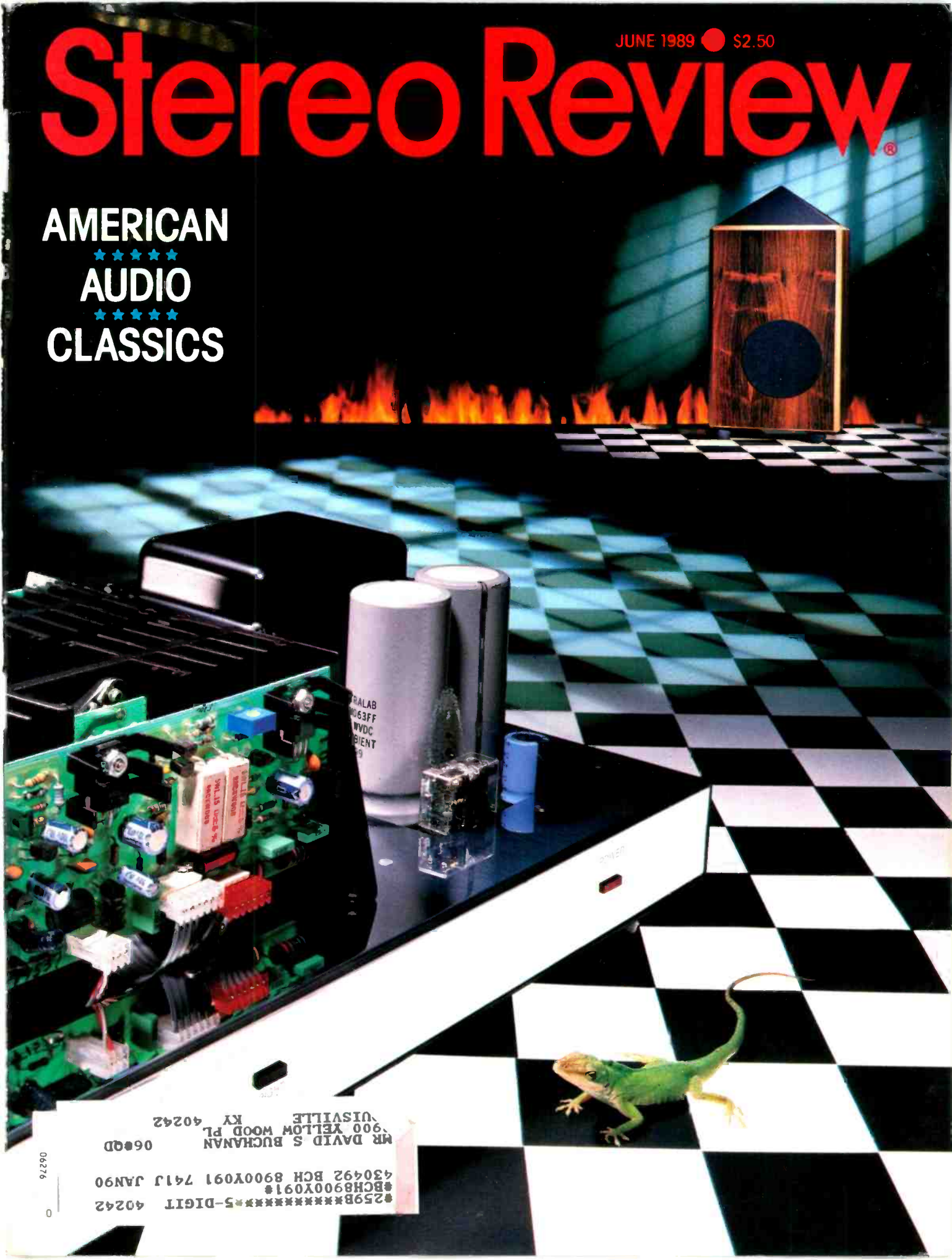


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JUNE 1989 ● \$2.50

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The RTA Series



RTA 11i

"They provide smooth, fast and incredibly well detailed sound."

“Polk’s RTA Tower Loudspeakers Combine Legendary Polk Performance with Contemporary Style.”

Big speaker performance with an efficient use of space.

RTA 11t

The RTA 11t is the finest conventional (non-SDA) speaker that Polk Audio manufactures. Its extremely high power handling (250 watts) and high efficiency (90dB) provide remarkable dynamic range from both large and small amplifiers. The RTA 11t utilizes the same technologically advanced fluid-coupled subwoofer design found in Polk’s flagship model. Dual 8” sub-bass radiators are coupled to two 6½” mid-bass drivers, resulting in a fast, powerful, deep, and ultra-accurate bass response, without the boomy, undetailed sound of large woofer systems.

RTA 8t

In a slightly smaller package, the RTA 8t offers the same driver complement as the larger, more expensive RTA 11t, and thus shares its benefits of superior imaging, musicality, and detail.

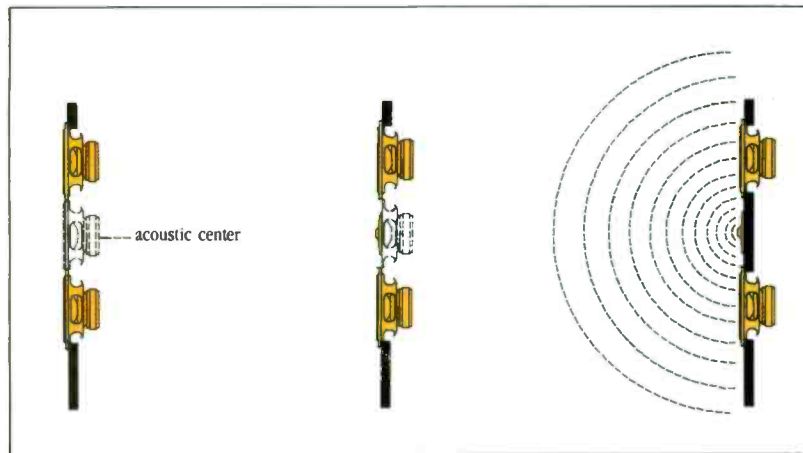
Both Polk RTA series loudspeakers achieve the extremely rare combination of good looks and state-of-the-art performance. The tall, elegantly slender, and deep “tower” design cabinets allow for substantial internal volume for high efficiency and powerful bass, while requiring less than one square foot of floor space. The small baffle surface area around each driver minimizes diffraction (sonic reflections), thereby insuring outstanding imaging and low coloration.

Positioning the 1” silver-coil dome tweeter between the two 6½” trilaminate polymer bass/midrange drivers achieves what is called “coincident radiation.” This means that both the mid- and high-frequencies appear to radiate from the same place on the baffle resulting in perfect blending at the critical crossover point. (See illustration, below).

Polk RTA speakers have an uncanny ability to perfectly reproduce the human voice, pianos, guitars, and every other instrument whose faithful reproduction demands superlative midrange and high-frequency performance. Bass and percussion instruments are accurately reproduced with full visceral power and realism, without the heaviness, boominess, or lack of detail that plague lesser designs.

The discriminating listener who seeks state-of-the-art performance and design will find the quintessential combination of both in Polk’s RTA series loudspeakers.

THE PRINCIPLES OF COINCIDENT RADIATION



The perceived source of sound of two identical drivers is centered in the area between them.

The benefit of coincident waveform propagation resulting in precise imaging, uniform vertical dispersion and startling midrange accuracy.

In the Polk RTA loudspeaker, the tweeter is positioned at the acoustic center of the drivers.



Polk Audio's RTA 8t and RTA 11t High Performance Tower Speakers

polk audio
The Speaker Specialists®

5601 Metro Drive, Baltimore, Md. 21215

The Monitor Series



Monitor 10B

"The best high performance speaker value on the market today!" Off The Record

“Polk’s Remarkable Monitors Redefine Incredible Sound/Affordable Price”

“At their price, they’re simply a steal” Audiogram Magazine

Monitor 10B

Considered one of the worlds’ best sounding loudspeakers and, in the words of Audiogram magazine, “At the price they are simply a steal.” The Polk 10B utilizes dual trilaminate polymer drivers coupled to a built-in subwoofer for accurate bass response and superior dynamic range. A 1” dome tweeter perfectly complements the other drivers to insure outstanding reproduction of every type of music.

Monitor 7C

Basically a smaller, less expensive version of the Monitor 10B. By offering superlative performance whether mounted on a shelf or a speaker stand, the 7C is a highly versatile addition to any audio system. How good does it sound? Audio Alternative magazine said, “It is amazing.”

Monitor 5B

Similar in design and performance to the Monitor 7C, however it utilizes an 8” subwoofer (rather than 10”) and is more compact. The 5B represents one of the best values of the entire Monitor Series.

Monitor 5Jr. +

Called the best sounding speaker of its price in the world regardless of size. It achieves life-like three-dimensional imaging which 10 years ago was not available in any bookshelf speaker at any price.

Monitor 4.5

Shares most of the high technology components and rewarding musical performance of the larger Polk speakers at a surprisingly low price. A critically tuned bass duct insures high efficiency and great bass performance despite its convenient compact design.

Monitor 4A

Identical to the 4.5 in a smaller cabinet. Audio critic Lawrence Johnson called it, “an all around star of great magnitude.” The 4A’s affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

Matthew Polk’s Vision: Superior Sound for Everyone

Polk Audio is an American company that was founded in 1972 by three Johns Hopkins University graduates who were fanatical audiophiles with a common vision. They believed that it was possible to make speakers that performed as well as the most exotic and expensive systems at a fraction of the price. Starting with only \$200, they began by designing and manufacturing the Monitor Series loudspeakers. The Monitor Series combined the advantages of American high technology and durability with European styling and refinement. Over the years an unending stream of rave reviews, industry awards, and thousands of enthusiastic Polk customers have established the Monitor Series as the choice for those looking for both incredible sound and an affordable price. There is no better value in audio equipment today than a Polk Monitor series loudspeaker.

Uncompromising Standards at Every Price

A limited budget does not mean a limited ability to appreciate fantastic sounding music. That’s why we put our best engineering efforts and only the finest materials into every Polk product regardless of price.

Every Polk Monitor Series speaker uses the same trilaminate polymer cone technology as the flagship SDA-SRS 1.2. Every Polk Monitor utilizes a 1” polymer dome tweeter, and most use exactly the same tweeter found in the SRS 1.2. All Polk Monitors employ costly multi-component crossover networks and ¾” thick high density, non-resonant cabinets. Pick up a Polk Monitor 4A, then pick up a comparably priced but larger speaker from a different manufacturer. You’ll notice that the Polk is heavier, more solidly built, and sports a superior fit and finish. Now compare the sound. We are sure you’ll agree with Musician magazine, which said Polk Monitors are: “Vastly superior to the competition.”

The Thrilling Sound of Polk Monitors

Polk Monitors achieve open, boxless, three-dimensional imaging surpassed only by the SDA’s. Their silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound, while their fast transient response results in music that is reproduced with life-like clarity and detail. In addition, dynamic bass performance, ultra-wide dispersion, high efficiency and high power handling are all hallmarks of Monitor Series performance.

There is a Polk Monitor Perfect for You

Each time you advance through the six Monitor Series models, you’ll immediately hear a remarkable improvement in efficiency, bass response, and output volume. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk played in a large room. A larger Polk in a small room will, of course, play that much louder with even better bass. No matter what price range fits your budget, there is a spectacular Polk Monitor Series speaker waiting to fulfill your sonic dreams.



Matthew Polk with his incredible sounding/affordably priced Monitor Series loudspeakers. Front row (L to R) Monitor 5Jr. +, Monitor 4A, Monitor 4.5 Back row (L to R) Monitor 10B, Monitor 7C, Monitor 5B

**Where to buy Polk Speakers?
For your nearest dealer, see page 127.**



JUST ANOTHER CD CHANGER LIKE LAMBORGHINI IS JUST ANOTHER CAR.

If the Alpine CD Shuttle™ bears any resemblance to other CD changers, you can be sure it's only superficial.

It is really the first of a brand new category of car audio components: serious, high-performance CD changers.

Under the hood, the CD Shuttle features 4-times oversampling, dual D/A converters and Luxman S.T.A.R. circuitry, for sonic performance that

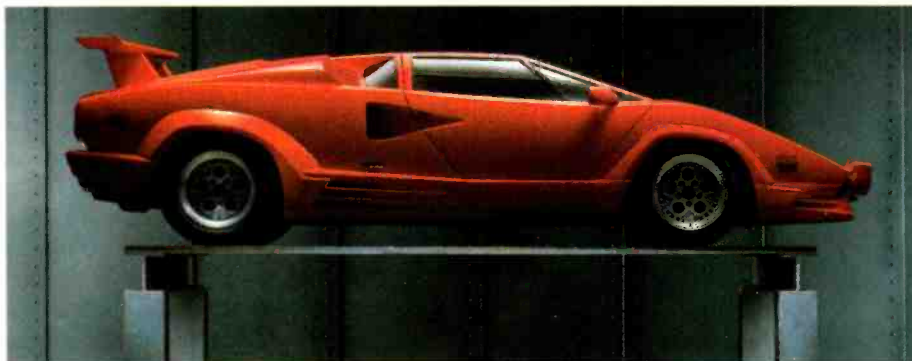
dusts the competition.

Yet its compact 11x3x7 chassis can squeeze into the tightest spaces. In the trunk, under the seat, in the glove box.

Horizontally or vertically.

Add to these the flexibility to fit into virtually any system, and you understand why the Alpine CD Shuttle is the Lamborghini of changers.

If you'll pardon the understatement.



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CAR AUDIO SYSTEMS

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Stereo Review

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Cover: The McIntosh MC 754 power amplifier and the Shahinian Obelisk speaker are expressions of American hi-fi know-how; see articles on pages 68 and 84. Design by Sue Llewellyn, photo by Hing/Norton.

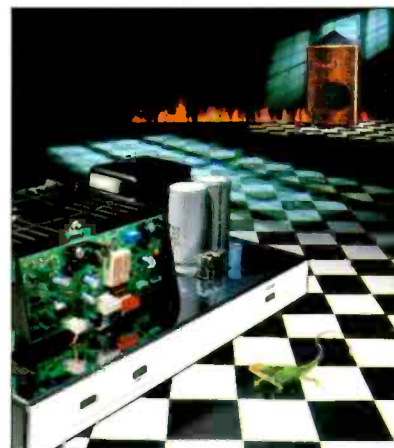
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There. In the grillcloth.

That 1½" diameter hole is actually the woofer in our full-range, bookshelf-sized AST-1 speakers.

Really. A clean 20,000Hz all the way down to a window-rattling 28Hz, without an oversized bass driver or big, clunky subwoofer to stash under a couch or behind a curtain.



Our AST system comes with two AST speakers, an AST amplifier, an AST cartridge and an additional cartridge that allows the use of conventional speakers.



Made possible by yet another Yamaha exclusive.

Active Servo Technology.

Our patented AST combines the superior imaging and point source characteristics of small-enclosure speakers with the superb bass response of large-enclosure speakers.

Giving you the largest possible sound in the smallest possible space.

Explained quite simply, we created a speaker, amplifier and processing cartridge system that provides negative impedance drive to help overcome inherent voice coil resistance, thereby mechanically damping the cone, so that even a slight vibration will excite the air in the enclosure, in essence creating an air-woofer, and...

On second thought, this is perhaps not the time or place for a full explanation.

The proper time and place *is*, however, as soon as you can get to your authorized Yamaha audio component dealer.

He'll give you a full explanation of the technology behind our remarkable new AST-1 full-range bookshelf speakers.

And if you're not sure you'll understand, you can always rely on two other remarkable pieces of technology. **YAMAHA**
Your ears.

11¾" high. 7½" wide. 28Hz deep.



by Christie Barter
and Rebecca Day

SONY'S DSP COMPONENTS

Sony is expected to introduce two products incorporating its new digital signal processing (DSP) technology at the Summer Consumer Electronics Show in June: a portable Discman with 18-bit resolution, eight-times oversampling, and a digital output, and a surround-sound receiver with 130 watts for each front channel and 15 watts for each rear channel.

DOLBY WINS OSCAR

Ray Dolby and Ioan Allen of Dolby Laboratories were awarded a special Oscar this year for "their continuous contributions to motion-picture sound through the research and development programs" conducted by their San Francisco-based firm. The Academy of Motion Picture Arts and Sciences gave Dolby and Allen its 1988 Award of Merit.

SAVE THE TREES

Dozens of international pop stars collaborated on the new Virgin Records single *Spirit of the Forest*, released in May as part of the effort to rescue the world's fast-disappearing rain forests. Conceived, written, and produced by the English environmentalist band Gentlemen Without Weapons, the recording features such artists as David Gilmour, Belinda Carlisle, Ringo Starr, Thomas Dolby, Mick Fleetwood, Olivia Newton-John, Brian Wilson, Was (Not Was), and Joni Mitchell. A number of top Brazilian, Japanese, and Soviet performers joined in as well. A *Spirit of the Forest* video was also released to tie in with World Environment Day on June 5. All proceeds of the single and video go to organizations dedicated to rain-forest preservation.

TECH NOTES

Magnavox has introduced two remote-controlled combi-players, priced at \$749 and \$799, that can handle all sizes of cd's and videodiscs . . . Pioneer, in

conjunction with the Japanese chemical company Showa Denko, has developed a speaker diaphragm that uses diamond crystals . . . Bang & Olufsen is expected to ship its first television components for the U.S. market in June, a 26-inch monitor/receiver and a Super VHS videocassette recorder. Built by Hitachi to B&O specifications, the components list for \$2,000 each.

. . . A \$100 converter will be made available to Japanese consumers that will enable them to receive the Muse high-definition television broadcasts on existing NTSC-system sets, according to Shigeo Shishido, deputy director general of the Japanese Ministry of Posts and Telecommunications. Muse transmissions are incompatible with the current NTSC standard used in Japan and the U.S. . . . The Vehicle Security Association is offering a brochure entitled "How to Protect Yourself Against Automobile Theft," available for 10 cents each from VSA, 5100 Forbes Blvd., Lanham, MD 20706. . . . New England Audio Resource has installed a toll-free number for customers who need service on Bozak or N.E.A.R. loudspeakers or components. Call (800) 552-5517 between 8:30 a.m. and 5:00 p.m. Monday through Friday. . . . Magnat Technologies, which has ceased its U.S. operations, will continue to provide warranty service for Magnat products in the U.S. Customers with questions regarding service should call the company's Massachusetts office, (617) 639-1400.

MUSIC NOTES

Rumor has it that the Who will perform its rock opera *Tommy* in New York and Los Angeles during a summer tour of twenty-five North American cities. . . . PolyGram is set to issue a multirecord retrospective album by the Allman Brothers, including almost an hour of unreleased material. The company is also preparing a long-form video of the international theatrical hit *Les Misérables*. . . . Upcoming in London this fall is a musical titled

The Buddy Holly Story, coinciding with the thirtieth anniversary of the rock singer's death. . . . Sting is co-starring in a film version of Tom Stoppard's play *Rosencrantz and Guildenstern Are Dead*, which goes into production in July. . . . The Doobie Brothers kick off a sixty-five-city North American tour in Denver on June 9. Their new Capitol album, "Cycles," is the first by the group's original lineup since 1975. . . . The First International Rock 'n' Roll Awards are being televised by ABC on May 31.

OPERA SELLS

The CBS Masterworks collection of "Verdi and Puccini Arias" sung by Kiri Te Kanawa recently shot to No. 1 on Billboard's chart of classical record sales when curious TV viewers learned that the recording of Puccini's "*O mio babbino caro*" used to promote Totts, a California champagne, was drawn from that album—and then went out and bought it. Originally released in 1984, the album went from a respectable 50,000 in sales to over 100,000 in the few months the Totts commercial was on the air.

Angel is making a bid for the same audience with a new album, "Madison Avenue Goes to the Opera," containing familiar arias, choruses, and operatic instrumental music used to sell the Sony Walkman, Kentucky Fried Chicken, Aqua-Fresh toothpaste, and other products.



RENE KLIN

At Altec Lansing, we think it's time you had a hand in what you hear. That's the idea behind the new Altec 511 Tower, the first loudspeaker that gives you total control of amplification, tonal balance and imaging for each midrange, tweeter, upper bass and woofer. The result is a sound system that lets you mold the music precisely to your taste, so everything from Mozart to Motown will sound exactly the way you want it.

Five years in the making, this towering achievement lets the discriminating audiophile choose between single, bi, tri or quad amplification and an impressive range of tonal balance levels, all through a simple control panel. So now, you can tell the philharmonic how to conduct itself.

The remarkable 511 Tower is one of twelve new Altec Lansing speakers, all designed to reproduce sound with unheard-of accuracy.

If the new 511 sounds good, call 1-800-Altec 88 for the dealer nearest you. Then take a pair home and tell them what you want to hear.

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TOTAL SONIC INTEGRITY

All Luxman receivers incorporate massive power supplies to deliver high dynamic power. The R-117 measures over 700 watts of dynamic power per channel (2 ohms) to ensure distortion-free transients.

The pre-amplifier section combines several Luxman exclusive circuit designs to optimize sonic accuracy, and the AM/FM stereo tuner is historically competitive with the finest separate tuners in the world.

In all, the R-117 receiver provides the purity and musical warmth of the original source, plus the high dynamic power output necessary to ensure total sonic integrity at all volume levels.

AUDIO/VIDEO REMOTE CAPABILITY

The R-117 includes a hand-held remote to control the major functions of each Luxman audio component. In addition, the R-117 handpiece can select up to three video sources, and professional-grade video amplifiers are incorporated to maintain a high-quality picture.

This single component will function as a complete audio and video control center with total remote capability.

MULTI-ROOM EXPANDABILITY

The R-117 also interconnects with an external remote eye to allow complete system operation from any room in your house. With a simple installation of cables and accessories, virtually all functions of the master system can be controlled at each remote location. This multi-room concept can be expanded at anytime in the future to include additional rooms.

LONG-TERM DURABILITY

A previous advantage of separate components over receivers has been in the area of durability. The R-117 is designed with a no-compromise approach to long-term reliability and is backed by a 5 Year Parts and Labor Warranty — the best in the industry.

The Luxman R-117 Receiver is simply the finest sounding, most versatile, most reliable receiver in the world... the ultimate component to upgrade your audio/video system.



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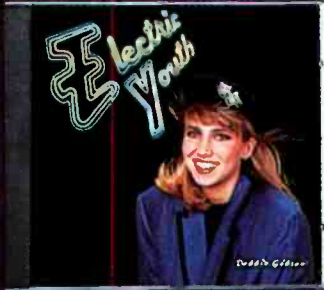


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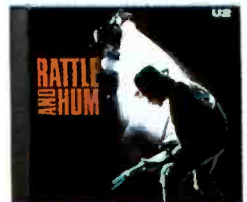
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LETTERS

Emmylou Harris

Being a fan of both Emmylou Harris and Alanna Nash for a large number of years, I beg to differ slightly with Ms. Nash in regard to her review of Harris's "Bluebird" in April. The song *I Still Miss Someone* combines the twang of a Johnny Cash original with the sorrow of a person who really does miss someone. And if you sing along with a fair impersonation of Gram Parsons in the "Safe at Home" version by the International Submarine Band, the harmony is beautiful and sweet.

Also, *A River for Him* has never failed to bring tears to my eyes. That is the power of Emmylou Harris.

TIM FULCHER
Austin, TX

Super VHS

In William Livingstone's "The Best Seat in the House" in the April issue, we are told that the advantage of Super VHS is a "brighter picture." Only a few pages later, Glenn Kenny in "Get the Picture!" mentions nothing about picture brightness, but he does talk about enhanced picture resolution with S-VHS. Which is it?

JOHN FARE
Sepulveda, CA

In effect, both. While it's true that the main advantage of Super VHS is improved resolution (sharpness of detail), this may also be perceived as increased brightness.

CD Rot

In Rebecca Day's April article on "CD rot" ("Where's the Rot?"), she quotes Philips as saying that fifteen-year-old discs "are still not showing signs of quality loss" and Sony's claim that "accelerated aging tests . . . show no change of the product even after more than ten years' time." Ms. Day concluded: "The word today from PDO [Philips-Du Pont Optical] is that as long as discs are handled and stored properly, they should last at least as long as the people who own them. And that should be long enough."

I disagree. A lifetime is not enough. Most of the LP's I own are over ten years old, and they're fine. I have over a thousand 78's, some dating to before 1910. They were owned by my grandparents and then by my parents and now by me. The music can extract from them on a modern system is fantastic, though they sound scratchy. They're not aged—they're beaten by the old hand-crank phonographs with big needles heavy enough to puncture one's skin.

Is it just another example of planned

obsolescence to say that a CD should be expected to last only ten years or even only "a lifetime"? Can modern technology do no better than that?

EVAN L. LEHMAN
Indianapolis, IN

Alternate Takes

How ironic that in the very same April issue containing reader Stewart Vandermark's letter about the recording industry's frequent deliberate misleading of consumers with regard to CD reissues, in which he specifically indicts the Columbia label, you tell your readers [in "Now on CD"] about Columbia's CD issue of Ramsey Lewis's "Golden Hits," citing its contents as "The good stuff, including his first hit, *The 'In' Crowd*, from 1965."

Unless you are psychic or have divined the truth from the fact that the photos on the back of the cardboard box are not those of Red Holt and Eldee Young, you will not find out until you read the insert inside the jewel box that these are not the original hits you expected but rather rerecordings released in 1973. The version of *The 'In' Crowd* on the CD did not win a Grammy. One listen will tell you why—if you're foolish enough to plunk down the money for it like I did.

A. BONITA
New York, NY

*Music Editor Christie Barter replies: Reader Bonita is correct that the version of Ramsey Lewis's *The 'In' Crowd* on the CBS "Golden Hits" CD is not the original, which won Lewis a Grammy in 1966, but a remake. On the other hand, the album does include the original *Hang On Sloopy*, which won Lewis a 1973 Grammy and is still pretty "good stuff."*

Television Standards

In the April "Letters" column, reader Stephen D. Leonard repeats two common misconceptions when he claims that "For twenty-five years, Americans have put up with color TV images of significantly lower quality than those available in Japan and Western Europe because the FCC insisted on making our color TV compatible with 1940's-technology black-and-white receivers."

Many travelers believe that the highest-quality routine TV transmissions are found in Japan and the lowest-quality ones in the U.S. But both Japan and the U.S. are using the very same NTSC system for color television. Most of Western Europe uses the PAL system (France uses the SECAM system). The simplest, earliest form of PAL differed from NTSC only in trading off color

saturation to insure unwavering flesh tones. Differences in frame rate, tied to local power-line frequencies, are essentially irrelevant to the color-TV argument. Both NTSC and PAL are monochrome-compatible. Engineers are in general agreement that NTSC is the most spectrum-efficient system in use, the most mathematically elegant compromise between the technical problems of color television and the capabilities of the human eye.

The reason for the real disparity in picture quality between U.S. television and that in other countries is that Americans don't seem to care enough to do anything about it. Do you have an outside antenna? When did you last replace it? Or its downlead? Or check the connections? When did you last tell your cable company that it was transmitting ghosts and noisy signals? Have you called your local station to gripe about excessive peaking (for phony "sharpness") or the constant color shifts between cameras or between commercials and programs? For that matter, do you adjust for natural colors manually, or are you content with oversaturated reds and drifting automatic tuning? How old is your set? When were the convergence and purity last adjusted?

In an "ideal" world, none of this would be necessary. This is the *real* world, however, and it is. Parts age; connections oxidize; insulation cracks; antennas weather; people become sloppy or lazy unless there's a reason to be otherwise. In Japan, and I assume in Europe, viewers keep their receiving equipment in top shape and demand that the transmission be handled with care.

That's what's wrong with American TV pictures. It has nothing to do with NTSC or the FCC. As Pogo used to say, "The enemy is us."

MARK P. FISHMAN
Arlington, MA

Clarification

Based on published reports, the May "Bulletin" stated that engineer Keith Johnson, who designs speaker systems for Precise Acoustic Laboratories, had designed a new line of speakers for Wald Sound to be sold under the reintroduced KLH brand name. According to Mr. Johnson, the KLH speakers only use some "low-cost components [he] had designed to operate in diverse speaker systems where individual model matching is impractical" and do not represent "the refinement and detail [he] would apply to dedicated high-end reproducers" such as the Precise systems. To avoid confusion, he has since terminated his relationship with Wald Sound. □

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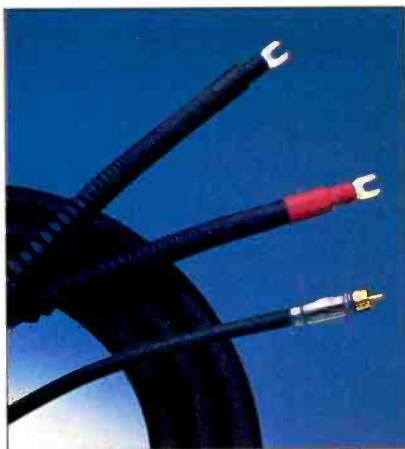
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Nakamichi

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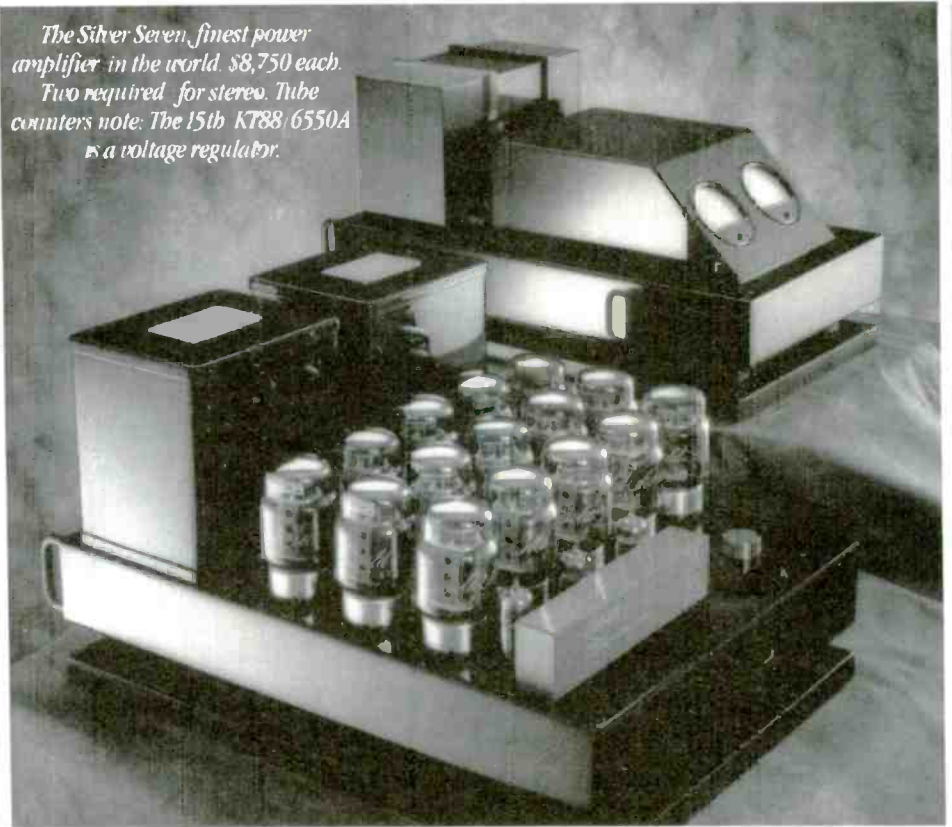
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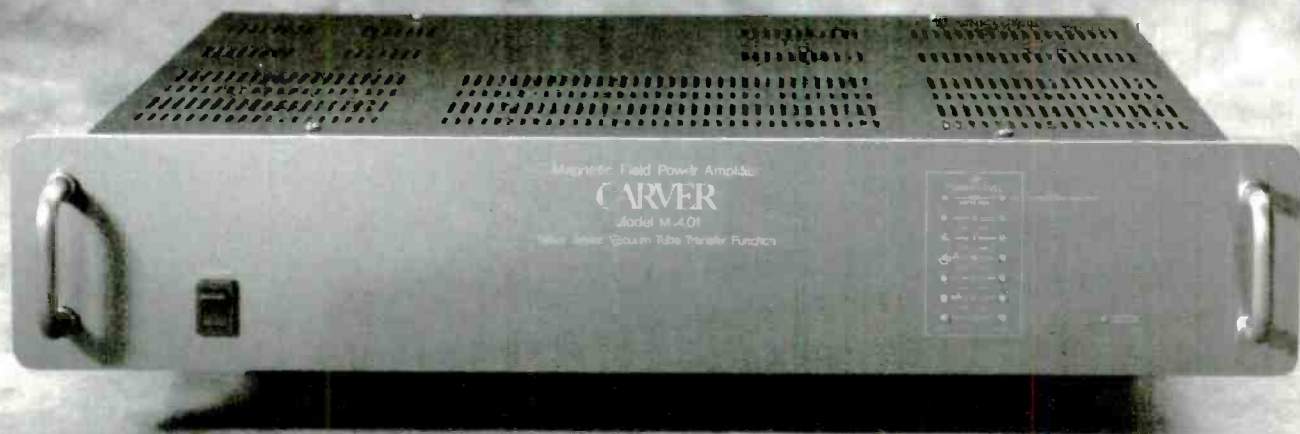
Sonically, a pair (for stereo) of the flawless Silver Sevens almost defies description.

Powerful

Distributed in Canada by: **evolution technology**

“Because I wanted to share its magnificent sound with you we built the new Carver M-4.0t.”

The M-4.0t, identical transfer function and 375 watts rms/ch. at 8 ohms 20-20kHz with no more than 0.5% tbd. Total maximum output current is 60 amperes.



Superlatives are insufficient.

What does this have to do with the new M-4.0t?

Everything. Because the M-4.0t precisely duplicates the transfer function of the Silver Seven.

Ever wondered why two amplifiers of identical wattage can sound different? Or why two designs with different output ratings can sound much the same? In many cases, it's because each power amplifier exhibits a unique relationship between its input and output signals. Like human fingerprints, this *transfer function* is subtly distinct, defining much of the sonic character of the design. Bob has not only perfected the art of measuring an amplifier's transfer function, but is able to duplicate it in a completely dissimilar amplifier design! That's how he invested his solid state M-1.0t with the

transfer function of a set of \$5000 esoteric tube amps several years ago.

This time he's gone one better. Or two. He's used this powerful scientific method to duplicate the transfer function of the Silver Seven in the new M-4.0t (now you know what the "t" signifies). Mind you, we are not saying the M-4.0t is *identical* to a pair of Silver Sevens. An M-4.0t weighs 23 pounds versus the Silver Seven at 300 pounds a pair. The Silver Seven stores 390 joules of energy while the M-4.0t stores none. As a Magnetic Field Power Amplifier the M-4.0t instantly draws the power it needs directly from the AC line.

Though in choosing the M-4.0t you may miss the warm glow of the Silver Seven's silver tipped vacuum tubes reflecting in polished black lacquer, be assured both amplifiers are the most musical, effortless, and open sounding you have

ever heard. Bass is full and tight, midrange is detailed, treble is pure and transparent.

Each can float a full symphony orchestra across the hemisphere of your living room with striking realism.

Bob Carver developed this incredible design for one reason: to bring you the best the world has to offer and the best amplifier value ever, and he has succeeded handsomely.

Listen to the new, incredibly affordable M-4.0t at your nearest Carver dealer. Or write us for more information. We'll even send you data on the Silver Seven. After all, if you ever want to move up from the M-4.0t, there's only one possible alternative.

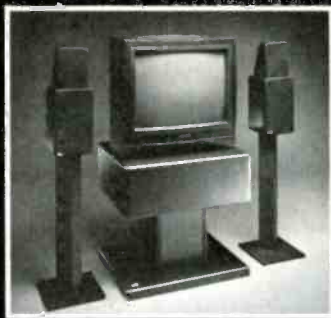
For more information or the dealer nearest you, call 1-800-443 CARV.

CARVER

BASS — that deep, rich, thunderous sound that moves your body as it excites your ear — M&K brings it alive in a unique sculptural form that will delight and astound you: The MX-1000. A powered pedestal subwoofer.

Integrating a magnetically shielded subwoofer into a pedestal for your large-screen television or monitor, the MX-1000 becomes an industry first in high-performance speakers. Plus, it scores a dramatic achievement in audio/video product design.

And with the technically ingenious Back-to-Back, Horizontal, Dual Driver System, the MX-1000 achieves a sonic



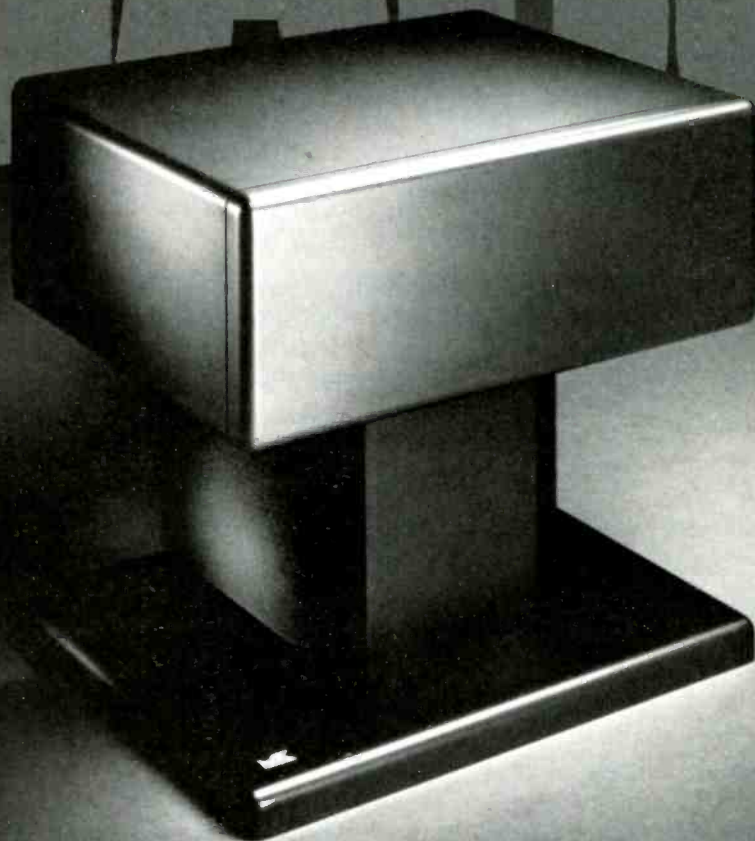
breakthrough, setting new standards for smooth and deep bass; superb transient response; wide dynamic range; and low distortion.

Furthermore, maximum flexibility is built in, making it easy to connect and balance it to your system. And it can be driven by virtually any source — even your television's built-in amplifier.

The MX-1000 redefines the subwoofer standard! Virtually no other upgrade to your system will enhance your audio and video experience

so dramatically — capturing the magic of a live performance with a level of realism that will astound you!

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MILLER & KREISEL SOUND CORPORATION

CIRCLE NO. 48 ON READER SERVICE CARD

NEW PRODUCTS

Ohm Acoustics

Ohm Acoustics has upgraded its line of Sound Cylinder speakers and added a new top model, the SCT+. The SCT+ and the SCS and SCT Series 2 speakers are said to have better power handling, efficiency, imaging, and frequency response than the original Sound Cylinders. All feature Ohm's Coherent Line Source inverted-cone bass-midrange driver, with a tuned port, and a coherently mounted supertweeter. Frequency response is rated as from 20,000 to 44 Hz for the SCS, 41 Hz for the SCT, and 38 Hz for the SCT+, all ± 4 dB. The cylinders are all 1 1/2 inches in diameter; heights are 3 1/2, 3 6/2, and 4 2 inches, respectively. Standard finishes are walnut, oak, and black. Finishing sleeves can also be prepared from customer-supplied fabric (2 yards) at a surcharge of \$175. Prices per pair: SCS, \$650; SCT, \$850; SCT+, \$1,100. Ohm Acoustics, Dept. SR, 241 Taaffe Place, Brooklyn, NY 11205.

Circle 124 on reader service card



Bush Industries

The full-sized home-entertainment center in Bush Industries' Presidential Collection of ready-to-assemble furniture is designed to house audio components behind tinted-glass doors and a television set, with up to a 25-inch screen, behind slide-away oak-veneer doors. It also has a VCR shelf, a storage drawer for recordings and accessories, and a pull-out shelf for a turntable. Dimensions of the cabinet, available finished in light or dark oak, are 49 x 51 1/2 x 18 inches. Price: \$699.95. Bush Industries, Dept. SR, One Mason Dr., P.O. Box 460, Jamestown, NY 14702.

Circle 125 on reader service card



Blaupunkt

The Blaupunkt New York SCD 08 car CD tuner features a built-in security-code theft-prevention system and an optional pull-out mounting for the dash unit. All tuner circuitry is in a separate shielded module. The tuner's signal-to-noise ratio with a 65-dBf input is rated as 75 dB; capture ratio is 1 dB, and adjacent-channel selectivity is 75 dB. A

Travel Store feature scans for the strongest stations available and loads them into memory. The cartridge-loading CD section has 10-second track preview and can store programmed sequences for up to eighteen discs. Price: \$899.95. Blaupunkt, Dept. SR, 2800 S. 25th Ave., Broadview, IL 60153.

Circle 126 on reader service card

Promontory

Promontory's line of triangular speakers was designed using FFT analysis, time-energy-frequency analysis, and Thiele-Small alignment techniques. All four models have tuned-port enclosures and 1-inch dome tweeters. The woofers range from 6 1/2 to 15 inches, and the two three-way speakers each have a 5-inch midrange. The frequency response of the smallest speaker (12 inches wide and high, 8 inches deep) is rated as 60 to 21,000 Hz, sensitivity as 92 dB at 1 meter with a 1-watt input. The largest model (30 inches wide and high, 15 inches deep) has a rated response of 40 to 20,000 Hz and a sensitivity of 92 dB. Prices: \$249, \$399, \$599, and \$799 a pair. Promontory, Dept. SR, 227 E. Meats, Orange, CA 92665.

Circle 127 on reader service card



THE NUMBERS MADNESS

by Ken C. Pohlmann

STOP digital madness! That was a rallying cry among analog audiophiles in the early days of consumer digital audio. The introduction of the compact disc struck them as the worst thing to happen to audio since boomboxes. They protested that the sound of digital audio was a travesty and the rush to that technology was madness. They did identify certain problems in CD sound, but they were wrong in assigning the blame to digitization in general. And over the years a steady evolution in the design of digital (and analog) stages in CD players has resulted in digital sound that has finally convinced virtually every golden ear.

But now another kind of digital madness has seized the audio industry. Among CD player manufacturers, frenzied number wars now rage: One beam versus three beams, 16 bits versus 18 bits versus 20 bits, two-times oversampling versus four-times versus eight-times versus sixteen-times versus The result is a case of technology hype that has many consumers unnecessarily confused. What *is* important in the design of a CD player? And, perhaps more important, what's not?

All CD players have a single laser source. In some designs the laser's beam remains a single beam, while in others it is split into three beams. Most players with three beams loudly proclaim that fact, suggesting that three beams must be better than one. But it just isn't necessarily so. The number of beams is a question of design judgment. A single beam and three beams can work equally well, though a single-beam pickup probably offers more consistent performance because it is inherently simpler and requires less critical calibration.

The question of how many bits are necessary in a digital-to-analog (D/A) converter is another source of confusion. Although all CD's are encoded with 16-bit audio data, the number of bits converted by the D/A

converter is again a question of design judgment. As a result, we have seen players converting 14, 16, 18, and 20 bits. In an ideal world—one with perfect 16-bit converters—we would require only 16 bits of conversion to recover the audio data on a CD perfectly.

Real-world converters are not ideal, however. Irregularities (nonlinearities) in the transfer of information from the digital domain to the analog domain introduce distortion in the output signal. Converting additional bits of information (made available by oversampling) can effectively reduce the magnitude of the conversion distortion, so the race for smoother converter per-

One beam versus three, 16 bits versus 18 or 20, two-times oversampling versus four-times, eight-times, or sixteen-times. What is important in the design of a CD player, and, perhaps more important, what's not?

formance (better linearity) has given us players with 18 and 20 bits of conversion and a multitude of different converter designs.

More bits should yield a more accurate audio signal, but the problem isn't that simple. For example, if you use an 18-bit converter that happens to have greater nonlinearity than a 16-bit converter, you've taken a step backward. In fact, some manufacturers have embraced longer conversion "words" with little regard to the basic problem of nonlinearity. What you should look for is a CD player that offers the most linear performance—no matter how it's achieved.

The oversampling-rate wars (two-times, four-times, etc.) are about as logical as a nuclear arms race. Every CD player needs an output filter to attenuate the ultrasonic frequencies—images of the audio spectrum at multiples of the sampling rate—that appear as a natural consequence of sampling and can create distortion. Oversampling is a digital

filtering technique by which a CD's 44.1-kHz signal is resampled at a multiple of that signal. The effect is to raise the undesirable signals created by the sampling process far above the audio range, where they can be removed with an analog filter that won't affect a player's sound. *That* is the benefit of a higher oversampling rate: the opportunity to use an analog filter that will not affect the quality of the audio signal.

The oversampling rate determines where the problem images appear. For example, a two-times rate places the first image at 88.2 kHz, a four-times rate at 176.4 kHz, an eight-times rate at 352.8 kHz, and so on. At first glance, the higher the rate, the further away the image spectra are from the audio band and the less the need for a sharp-cutoff (and possibly audible) analog filter—sometimes called a "brick-wall" filter—to get rid of them. To some extent, that is certainly true. But to conclude simply that the higher the sampling rate the better is wrong. Once again, there are other factors involved. Even low-sampling-rate digital filters are tricky to design. One slip and the quality of the computation, and hence the quality of the audio signal, can be jeopardized.

In addition, high oversampling rates can tax D/A converters, causing them to work a little too quickly and introduce accuracy problems. Finally, once the image spectra have been moved far enough away from the audio band (four-times oversampling would appear to do this), the required analog filter can be designed to be harmless; thus, a higher rate does not provide any improvement. In short, extremely high oversampling rates do not *necessarily* provide a higher-quality sound and may actually degrade the signal.

These kinds of numbers wars are pure madness. While technical evolution and diversity in digital products are important, it is also important not to introduce any more confusion here. If people get confused enough, or begin to defer purchases while waiting for still higher numbers and rates, no one is going to be happy. □

Nothing comes remotely close.



Introducing "The System" by Proton.



You're looking at the perfect synthesis of advanced electronics, sophisticated design and uncompromising sound. It's "The System," Proton's incomparable new, integrated audio components with remote control.

There's a fully programmable compact disc player that lets you play up to 20 of your favorite selections—in any order—totally free of distortion or noise.

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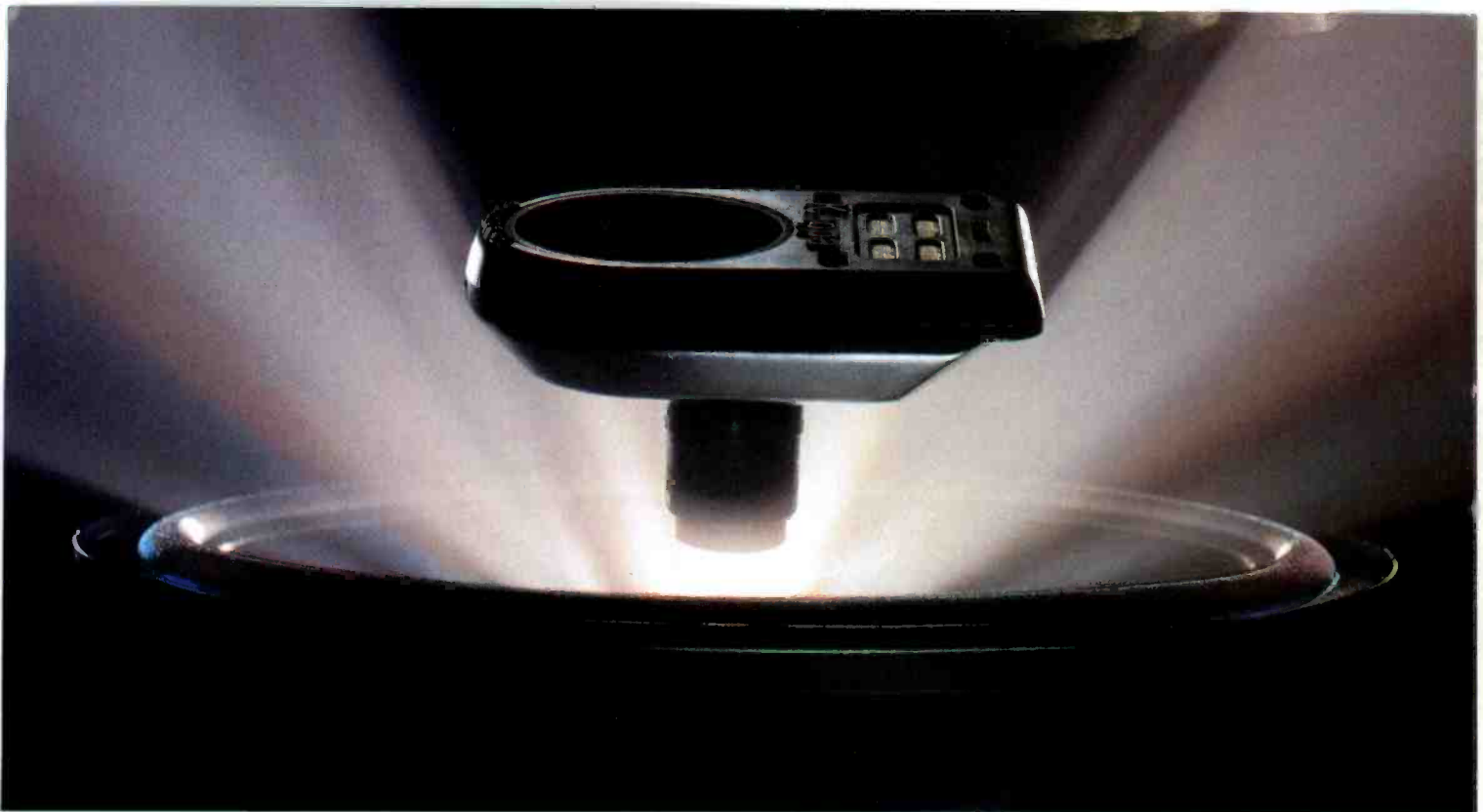
deliver sound so breathtaking, you simply won't believe your ears.

Even the sleek, comfortable remote control is a work of art that's exceptionally easy to work. While you may find a system with similar components as "The System," that's where the similarity ends. Because when it comes to sound, nothing comes remotely close.

Call for your free Ultimate Systems Guide. Proton's Ultimate Systems Guide for Audio/Videophiles tells you all about the innovative technology and design in our renowned line. For your copy, and the name of the Proton retailer nearest you, call (800) 772-0172. In California, (800) 428-1006.

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How to keep the bass from tarnishing the brass.

Ever wonder why brass instruments sound so non-musical on most coaxial and triaxial car speakers?

It's because, among other reasons, the midrange and tweeter are completely exposed to the woofer's hammering bass energy.

Thus, the precision and delicacy of their frequencies suffer, along with the musical accuracy.

That's one of the sonic concessions many speaker designers make when they try fitting drivers within drivers.

We, on the other hand, left no room for compromise when we designed the Infinity Kappa Car Series.

For instance, we created a sonically-inert, low-diffraction Acoustic Shield™ that isolates our acclaimed EMIT tweeter and Polycell midrange from the bass wavefront, and at the same time, prevents the bass waves from deflecting back into our IMG woofer.

Such fanatic attention to detail is one of the reasons why our Kappa RS 693 *k* took *Audio/Video International's* coveted Auto Sound Grand Prix Award two years in a row.

And why the only thing the Kappa Car Series may tarnish is your opinion of other car speakers.



 **Infinity**

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

by Ian G. Masters



Saving Cassettes

Q *I have a large collection of music on commercially recorded cassettes, but most of them are damaged. Some stop in midplay, some won't wind forward or rewind, and some exhibit severe distortion. Is there any way I can salvage these tapes?*

VICENTE FONT ZELINSKI
Santurce, PR

A It's an unfortunate fact of audio life that most commercially recorded cassettes—particularly older ones—were produced using inferior tape and cassette shells. Consequently, your problem is a very common one, and it has no complete solution. You may have to resign yourself to losing some of those recordings forever.

That's not to say, however, that there's nothing you can do. Most of the problem has to do with the physical interaction between the tape itself and its carrying mechanism, the shell. Decoupling these two elements may allow you to play most of your recordings satisfactorily. There are kits available that allow you to remove the tape from a faulty shell and place it in a new one, and that may be the best answer for the worst cases in your collection.

Simpler, but more expensive, would be to use a cassette deck that features a closed-loop, dual-capstan transport mechanism. This effectively isolates the tape from its shell and often makes it possible to play cassettes that tend to bind or jam in conventional transports,

but it is unlikely to help with tapes that won't rewind, as that function doesn't employ the dual capstans, so you may have to play every such tape through to the end. Even so, the investment in a new deck would probably be cheaper in the long run than replacing your whole collection.

Horns and Bass

Q *I am considering a pair of speakers that are "fully horn loaded." Can such a speaker produce good bass? Also, they are rated at 100 watts; could my 150-watt amplifier damage them?*

ROB SPROVIERI
APO, New York

A Over the years it has been common to attribute specific sonic characteristics to the different varieties of speaker design, but in reality fine performance in all parts of the spectrum—including the very low end—has been achieved with every configuration. So there's no reason that a horn-loaded speaker shouldn't produce as much bass as you want. To do so, however, such speakers are typically very large, and that isn't convenient in all listening rooms.

On the other hand, most horn-loaded speakers are very sensitive, needing relatively little power to produce a lot of sound. Chances are, therefore, that your 150-watt amplifier will usually put out much less power than it is capable of, which means it will have more than adequate reserves for musical peaks. It's unlikely that you will ever have occasion to drive such speakers hard enough to damage them.

Disappearing Surround

Q *I have two videocassette recorders connected through an A/V receiver with a built-in Dolby Surround decoder. Occasionally I copy tapes from one VCR to the other while watching the program and enjoying the surround effect. My second VCR is a mono model, so I have to connect it to the outputs of the receiver by means of a Y-cord. Whenever I hook this up, however, the surround signal disappears completely. Disconnecting one of the plugs restores the rear-channel information. Why is this happening?*

KENNETH M. SULLIVAN
Shreveport, LA

A Surround sound works by detecting any out-of-phase information, which may or may not have been deliberately added to a stereo signal, and routing it to the rear speakers. By using a Y-cord to derive a mono feed for your second VCR, you have also mixed the stereo signals to mono *within the receiver*.

er. Because there are no out-of-phase signals in mono, the surround decoder has nothing to work with, so it feeds nothing to the rear speakers. Unplugging one side of the Y-cord breaks this internal mix, and so the surround returns.

Amplifier Heat

Q *My power amplifier becomes quite hot after about an hour of use at moderate listening levels, although the automatic protection circuit has not shut it down to date. Would there be any advantage to installing a cooling fan anyway?*

DANIEL C. GALLAGHER
Iowa City, IA

A Only if the air flow around the amplifier is restricted, resulting in a greater buildup of heat than was anticipated by the manufacturer. This is unlikely in your case, however, as that would almost certainly have tripped the protection circuits at some time. All amplifiers develop some heat, so although a fan would certainly do no harm (unless it's noisy enough to be distracting), it's not really necessary in most systems.

Crackling CD's

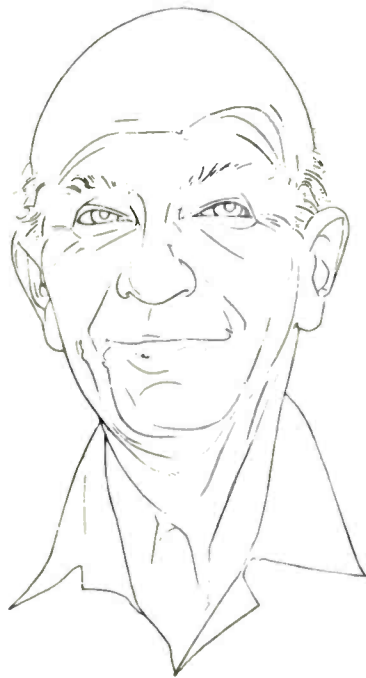
Q *When I listen to certain compact discs on my portable player I hear a crackling noise that resembles the sound of a badly worn vinyl record, yet they are fine when I play them on my home system. It's been suggested that the problem might have something to do with the sampling rate of the portable. Could it?*

JEAN FREGEAU
Mount Airy, MD

A It's not likely to have anything to do with the sampling rate, which is fixed at 44.1 kHz for the compact disc system. Some machines do employ "oversampling," using a digital filter to increase the clock frequency during playback by two, four, or even more times, but oversampling affects only the player's ability to reproduce the high frequencies with little phase shift.

What you are probably hearing is the result of your portable's error-correction circuits misbehaving. Built into the compact disc system is a method for every player to detect missing bits of information; up to a point, the player is able to re-create what's gone, but when it can't it produces the sort of noise you are hearing. Typically, home players have more sophisticated error-correction circuitry than most portables, which may be why your discs sound fine at home. □

by Julian Hirsch



SYSTEM INTEGRATION

ALTHOUGH *component* integration, combining in a single chassis two or more basic audio building blocks—tuner, preamplifier, and power amplifier—has been a familiar part of the high-fidelity scene for many years, there is a current trend toward *system* integration. In some cases the “system” is merely a more extensive or more versatile group of audio components, including one or more cassette decks, a turntable, and perhaps an equalizer. Another system configuration might contain some or all of the above plus such video components as a VCR, a videodisc player, and a TV set or video monitor.

Any combination of components forms a system, but “integration” usually implies a unified control structure linking the various components. System integration may involve some audio integration, up to the point of having a receiver as its main part, but the video components and external audio source components are normally physi-

cally separate from the receiver. Such integrated controls as may exist are usually in the receiver (or integrated amplifier, in some cases) and a wireless remote control.

When video control features are part of a receiver or integrated amplifier, it is generally referred to as an A/V or audio/video receiver or amplifier. In some of these components, especially inexpensive ones, the video functions may consist of little more than signal switching, which simplifies dubbing videotapes from one VCR to another, and perhaps a switched line from the video source to a monitor. In fact, it may be something of an exaggeration to call such a product an “A/V” component at all.

The major link between audio and video media involves *surround sound*, which provides an immediacy and viewer involvement that greatly enhances the effect of a movie, especially a movie whose sound has been processed skillfully to maximize its contribution to the visual program. Many, if not most, motion pictures nowadays are issued with Dolby Stereo soundtracks and Dolby Surround-encoded tape and disc versions (some videodiscs provide a high-quality digital soundtrack in addition to the standard analog track).

This situation has led to the development of a number of A/V receivers or amplifiers with built-in Dolby Surround decoders and low-power rear-channel amplifiers. In the higher price brackets, the decoder may employ Dolby Pro Logic circuitry for enhanced directional separation, and such a system has the capability of matching or surpassing the sound heard in almost any theater. In combination with a suitable video source (and, of course, a monitor), plus an additional pair of speakers, such a product becomes the control center of a true A/V home entertainment system.

But how does one “integrate” a number of physically separate and functionally very different components? The answer is found in the wireless remote control, now a standard feature of many receivers and integrated amplifiers and of almost every VCR, CD player, and videodisc player. In fact, many homes today

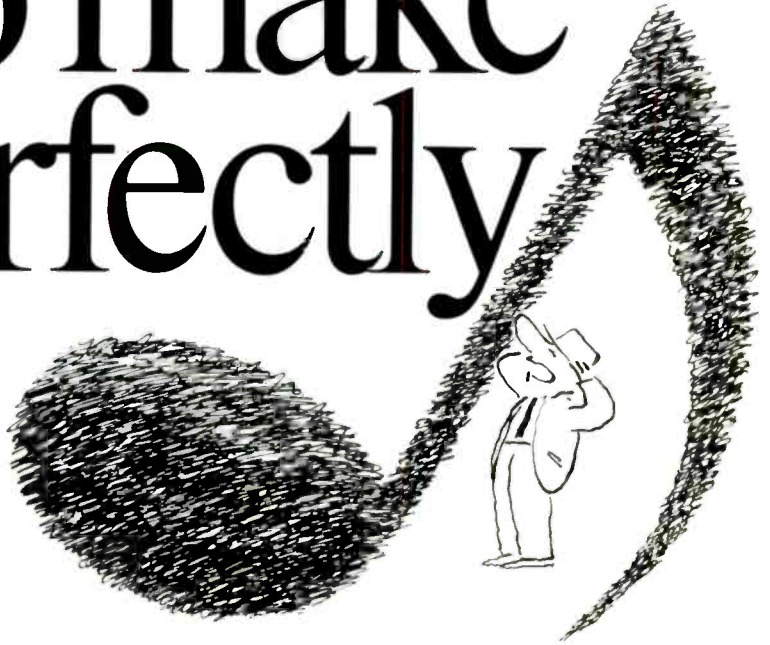
have “systems” made up of unrelated components from different manufacturers whose several remote controls form an unsightly and often inconvenient adjunct.

It was to answer the problem of dealing with multiple remote units that a number of manufacturers developed universal controllers able to “learn” the commands of several unrelated dedicated controls. I use such a unit in my own home to replace separate controls for a stereo receiver, TV set, VCR, and CD player. It is both less obtrusive and easier to use than the four units it replaces.

Several companies—a/d/s/, Pioneer, RCA, JVC, and Mitsubishi among them—have developed lines of truly integrated components, all of which are served by a single controller. Recognizing that universal controllers are sometimes forbiddingly complex, these companies offer control units that expose (for the most part) only those buttons or switches associated with the component currently in use, such as the receiver, tape deck, or CD player. This design approach greatly simplifies operation of the system, since the user has to deal only with those controls affecting one component at a time. To operate another component, a sliding panel or similar device exposes the necessary control buttons. Naturally, the benefits of such a design are available only to people who buy a single-brand component system, although these are usually of very high quality and involve no sonic sacrifice.

Within the constraints of such a unified system design, there are many possible configurations of control functions, which are best discussed in detail in reviews of a specific system or its major components. Although I do not normally test complete systems, the control center is generally the receiver unit, and I *do* test those. I cannot judge how easy or difficult it might be to operate the other components, but I can get a pretty good idea of the strengths and limitations of a unified system control from testing and using the receiver. My opinions as to which products are likely to be easier or more difficult to use will appear in the appropriate published reports. □

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Regardless of how sophisticated your stereo and video system is, it may never achieve its full performance if plugged directly into an AC outlet. Raw and unprocessed AC power can severely diminish the clarity of audio signals and reduce the resolution of your video picture.

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Listen To The Critics

"...the effective suppression of AC 'RF' hash' by the ACE-515 improved clarity and lowered noise in all three CD players. . . .the significant improvements in instrumental and vocal harmonic retrieval and hall ambience are superb. . . . it simply appears to allow musical information to be passed through to the listener with less veil and electronic 'haze.'"

—Lewis Lipnick, *Stereophile*, Vol. 11 No. 4, April 1988.

Recommended accessory in *Stereophile*, Vol. 12 No. 4, April 1989.

Line Protection: It Pays For Itself

The ACE-515 also protects your valuable equipment from harmful high-voltage spikes and surges. And, its sequential turn-on/turn-off control circuit guards your speakers from disturbing, damaging thumps.

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"Electronic equipment (especially digital audio gear) is vulnerable to both annoying and catastrophic power-line problems. Your stereo gear should have line spike and surge protection, with hash filters thrown in too. Line protection—you can pay a little for it now, or you can pay a lot for it later."

—Ken Pohlman, *AUDIO*, November 1987.

For a modest investment, the ADCOM ACE-515 enhances both audio and video clarity while protecting your equipment from damaging line voltage disturbances. Once again, ADCOM lives up to its reputation of offering superior performance at a reasonable cost. For complete technical data, please visit your Adcom dealer. You'll discover the ACE-515 is more than an accessory. It's a necessity.



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Kings: 8 mg "tar," 0.6 mg nicotine
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time slows down. With Enriched Flavor,[™] it's like this: The taste
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SONOGRAPHE®

SC 1
SA 120



Designed and manufactured by conrad-johnson design, inc., the SONOGRAPHE® SC1 preamplifier and SA120 power amplifier derive from a proud heritage of musical accuracy and incomparable value.

The SONOGRAPHE approach to product design is uncommonly straightforward. Carefully conceived circuits designed with a minimum number of active devices and executed with first quality component parts will achieve both musical excellence and high reliability at moderate cost. Field effect transistors were chosen for the SC1 and SA120 because their distortion components are more musically natural than those of bipolar transistors. Careful device matching allows the use of low negative feedback circuits, resulting in clean, dynamic transients. Low impedance discrete regulated power supplies eliminate power supply induced distortions. Elegantly simple circuits, selection of essential features, and careful attention to production requirements make it possible to offer remarkable sonic refinement at an affordable price.

THE SC1 FET PREAMPLIFIER

The SC1 is a flexible all FET preamplifier featuring switching for one phono and five line level inputs, including two tape monitor/record loops. Its excellent signal to noise ratio and high gain permit the use of most moving coil and all moving magnet cartridges. Metal film resistors and polypropylene or polystyrene capacitors are used throughout the circuit. The FETs are hand selected for conformity to design specification. The musical performance of the SC1 will embarrass many solid state units at up to ten times its price.

THE SA120 FET POWER AMPLIFIER

The SA120 is a gutsy, high current MOSFET amplifier able to deliver sufficient power and current for nearly any high quality loudspeaker system. The unique approach of the SA120 entails 40 to 60 db less negative feedback than typical transistor designs, allowing dramatic dynamics without a trace of hardness. The audio circuitry is executed entirely with metal film resistors and polypropylene capacitors.

G

the conrad-johnson group 2800 R Dorr Ave. Fairfax, VA 22031 703-698-8581

CIRCLE NO. 72 ON READER SERVICE CARD



JOCK LIFUNG

SONY CDP-608ESD COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

THE Sony ES series of audio components was developed to provide state-of-the-art performance in consumer audio technology. Although they are hardly inexpensive, most ES components are priced well below most so-called "high-end" audio products. The CDP-608ESD aptly illustrates the ES approach. It uses 18-bit digital-to-analog (D/A) converters and eight-times-oversampling (352.8-kHz) digital filters. Almost every feature yet created for CD players is built into it, and it is rated for state-of-the-art performance: a signal-to-noise ratio (S/N) of 113 dB, distortion of 0.0022 percent, channel separation of more than 110 dB, and frequency response from 2 to 20,000 Hz \pm 0.3 dB.

The CDP-608ESD is moderately large—18 $\frac{3}{8}$ inches wide (including its furnished wood side plates), 14 inches deep, and 4 $\frac{3}{4}$ inches high—and weighs a hefty 27 $\frac{1}{2}$ pounds. At first glance, it appears to be a fairly conventional front-loading player with all the usual controls and features plus some that are less familiar. In addition to the standard transport controls, a matrix of twenty numbered buttons gives direct access to any track on a disc. (Pressing the >20 button allows track numbers up to 99 to be keyed in with the other buttons.) There are separate pairs of fast and slow scanning buttons instead of the usual single pair of buttons that increase scanning speed as they are held in.

The CDP-608ESD has unusually

comprehensive editing and programming features. It can play a single track, an entire disc, or up to twenty tracks in any desired order, and a shuffle-play mode plays the tracks in a random order. Among special provisions for users who wish to tape programs from CD's is an Auto Memo feature to select tracks that will fit in a designated time span (it can select two programs, one for each side of a cassette, with minimum tape waste). The player also has a provision for inserting 3 seconds of silence between tracks (for tape players that use such blanks to locate the beginning or end of a segment) and an automatic fade function.

The Custom File feature of the CDP-608ESD stores user-selected programs for up to 227 different discs in a nonvolatile memory (it is retained indefinitely as long as the player is plugged into an AC supply and for about one month with no power available). The stored information for each disc can include a title (up to ten letters or numbers

"They Were Designed To Play Music This They Do Very Well, In At A Bargain Price... It's Hard To Ima

It has always been true that placement in the listening room has a profound effect on the sound of any loudspeaker, regardless of its inherent qualities. Cambridge SoundWorks has confronted this fact and created Ensemble™, a speaker system that can provide in your home, the superb sound once reserved for the best conventional speakers under laboratory conditions. And because we market it directly, Ensemble costs far less than previous all-out designs. Perhaps best of all, it virtually disappears in your listening room.



Henry Kloss, creator of the dominant speaker models of the '50s (Acoustic Research), '60s (KLH), and '70s (Advent), brings you Ensemble, a genuinely new kind of speaker system for the '90s, available factory direct from Cambridge SoundWorks.

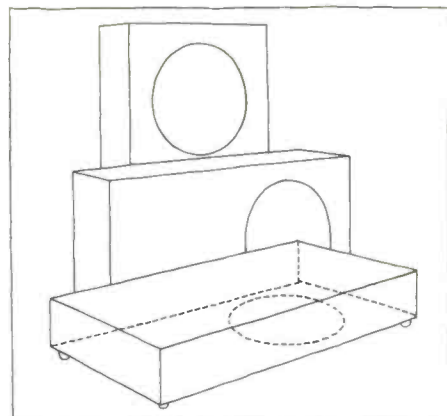
The best sound comes in four small packages.

Ensemble consists of four speaker units. Two compact low-frequency speakers reproduce the deep bass, while two small satellite units reproduce the rest of the music. Separating the low bass on both channels from the rest of the range makes it possible to reproduce just the right energy in each part of the musical spectrum without turning your listening room into a stereo showroom. With clumsy conventional systems, you can either strive for that balance by letting loudspeakers dominate your room, or sacrifice it for less conspicuous speaker placement.

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Room acoustics emphasize and de-emphasize various parts of the musical

Unlike satellite systems which use a single large subwoofer, Ensemble features separate compact bass units for each stereo channel. They fit more gracefully into your living environment, and help minimize the effects of the listening room's standing waves.



Because low frequencies are non-directional, Ensemble's bass units can be installed horizontally, vertically, facing upwards, or facing downwards.

range, depending upon where the speaker is placed in the room. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

Ensemble, on the other hand, *takes advantage* of your room's acoustics. You put the low-frequency units where they provide the best bass, whether or not that location is good for the high frequencies (and it usually



-And Make It Sound Like Music. A Most Unobtrusive Way, gine Going Wrong With Ensemble.”

Julian Hirsch
Stereo Review, Sept. '88

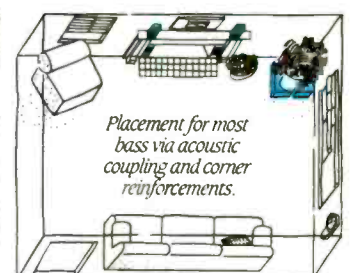
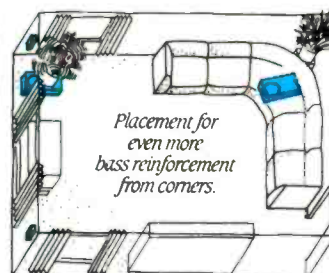
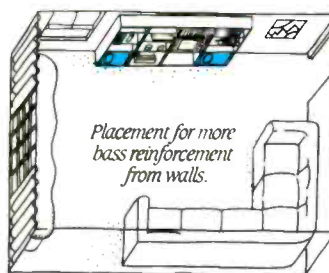
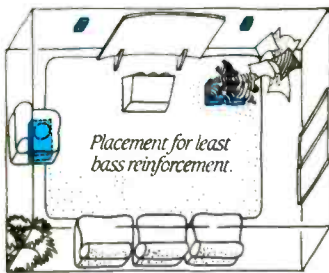
isn't for any speaker). Then you put the satellites where they provide a well-defined stereo "stage."

The ear can't tell where bass sounds come from, which is why Ensemble's bass units can be tucked out of the way—on the

in gunmetal gray Nextel, a suede-like finish highly resistant to scratching. We even gold-plate all connectors to prevent corrosion. But perhaps an even bigger difference between Ensemble and other speakers is how we sell it...

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(1-800-252-4434)

Our toll-free number will connect you to a Cambridge SoundWorks audio expert. He or she will answer all your questions from



You can put Ensemble's low-frequency units exactly where they should go for superb bass. You can't do this with conventional speakers because you have to be concerned about the upper frequencies coming from the same enclosures as the low ones.

floor, atop bookshelves, or under furniture. The satellites can be hung directly on the wall, or placed unobtrusively on windowsills or shelves (among other possibilities). The result is extraordinary. There are no bulky speaker boxes to dominate your living space, yet Ensemble reproduces the satisfying deep bass that no mini speakers can.

Not all the differences between Ensemble and other speaker systems are as obvious as our two subwoofers.

Unlike three-piece satellite systems that may appear similar, Ensemble's four-piece design doesn't cut any corners. We use premium quality components for maximum power handling, individual crossovers that allow several wiring options and cabinets ruggedly constructed for proper acoustical performance. The low-frequency units use the classic acoustic suspension design, and are finished in black laminate. The satellites are finished

The best showroom of all: your living room.

Choosing a loudspeaker after a brief listen at a dealer's showroom is like deciding on a car after one quick trip around the block. Therefore we make it possible to audition Ensemble right in your own home. In fact, Ensemble is sold *only* by Cambridge SoundWorks directly from the factory.

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shipping charges in the continental U.S.).

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At only \$499—complete with all hardware, 100' of speaker cable, and free ongoing assistance—Ensemble

costs hundreds of dollars less than it would in a retail store.

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."

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why (or why not) to buy Ensemble to those you may have about related equipment. Your audio expert will take your order (you can use Visa, MasterCard or American Express), and arrange surface shipment via UPS (\$7 to \$25 anywhere in the continental U.S.). You should have Ensemble within one week. And your Cambridge SoundWorks audio expert will continue as your personal contact with us, to answer questions which might come up after you've begun to enjoy Ensemble at home. We think you'll like this new way of doing business.

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that appear in the display window whenever the disc is loaded), the "program bank" (up to twenty tracks in any order), and a "custom index" of up to ten selected points on the disc. A user can program playback starting from any of the stored points or repeat the program between any two of them. There are provisions for checking the programmed information and clearing or modifying any portion of it.

The CDP-608ESD can be operated automatically by means of an external timer switch. The large display window, which can be switched off if desired, shows the current track and index numbers, the elapsed or remaining track time, and the time remaining on the disc. Its "music calendar" shows unplayed track numbers (up to No. 20), and there are status indicators for practically every one of the control features.

A small knob on the front panel adjusts the level at the adjacent headphone jack and at the variable analog outputs in the rear. A red LED in the knob serves as an index marker and blinks while the control

is being adjusted remotely (it is motor-driven in remote operation). The rear apron contains fixed and variable analog outputs and both coaxial and optical digital outputs. A front-panel button switches the digital outputs on and off.

The Sony CDP-608ESD is furnished with a wireless remote control that duplicates virtually all its control functions except power on/off, timer mode, and digital output switching. Price: \$1,000. Sony Corp. of America, Dept. SR, Sony Dr., Park Ridge, NJ 07656.

Lab Tests

The frequency response of the Sony CDP-608ESD was flat within ± 0.15 dB from 11 to 20,000 Hz. The output from a 0-dB test signal into an EIA standard load was about 2.45 volts (fixed or maximum variable), with a channel imbalance of 0.03 dB. The channel separation decreased smoothly from about 128 dB at 100 Hz to 92 dB at 20,000 Hz. As with most CD players, there was a measurable but insignificant difference between the separation readings from the left to the right

channel versus the right to the left.

The departure from linearity at very low signal levels was less than 0.05 dB from 0 to -90 dB, the best performance we have measured from a CD player. The 1,000-Hz total harmonic distortion (THD) plus noise was between -94 and -92 dB (0.002 to 0.0025 percent) over a level range of 0 to -90 dB in the poorer of the two channels. The other yielded substantially lower distortion readings, in the range of 0.001 to 0.00125 percent, at levels from -40 to -90 dB. Across the audio frequency range, THD plus noise at the 0-dB level was -92 to -94 dB from 20 to 10,000 Hz, dropping as low as -97 dB (0.0014 percent) at 20,000 Hz.

The de-emphasis error was only 0.07 dB at 16,000 Hz, and interchannel phase shift reached a maximum of -0.65 degree at 20,000 Hz. The A-weighted signal-to-noise ratio was better than 117.5 dB (referred to a 0-dB level), and the dynamic range was 98.4 dB. The quantization noise (with the D/A converters energized) was -94.7 dB. The frequency (speed) error was -0.0167 percent.

The cueing to tracks that were not separated by a silent interval was perfect. The slew time was 1.8 seconds from Track 1 to Track 15 of the Philips TS4 test disc, not quite the fastest we have observed but better than average. The tracking was unaffected by fairly hard blows to the top or side of the player; a very hard fist blow or open-palm impact was needed to cause mistracking. The defect tracking (error correction), measured with the Pierre Verany #2 disc, was outstanding. A dropout duration of 2,000 micrometers, or two successive closely spaced dropouts of 1,000 micrometers, was needed to cause mistracking.

Comments

Our measurements of the CDP-608ESD speak for themselves—this is unquestionably an outstanding CD player. Not surprisingly, there was nothing in its sound quality that was not perfectly consistent with its performance on the test bench.

Moreover, the special features of the CDP-608ESD are at least as

FEATURES

- Eight-times-oversampling (352.8 kHz) digital filters and 18-bit D/A converters
- Coaxial and optical digital outputs
- Fixed- and variable-level analog audio outputs
- Front-panel headphone jack with level control (also controls variable line outputs)
- Programmable to play up to twenty tracks in any order
- Shuffle-play
- Repeat function for all modes
- Custom File to store programs for up to 227 discs, including ten-character disc titles and up to ten user-assigned index points per disc
- Automatic fader
- Time Edit to program playback for maximum recording time on tape cassette
- Auto space
- Direct access to any numbered track
- External-timer operation
- Wireless remote control of all front-panel functions except power and timer switching, digital-output selection

LAB MEASUREMENTS

Maximum output level: 2.45 volts
Total harmonic distortion at 1,000 Hz: 0.001 to 0.0025% from -90 to 0 dB
Signal-to-noise ratio (A-weighted): 117.5 dB
Channel separation: 128 dB at 100 Hz, 113 dB at 1,000 Hz, 92 dB at 20,000 Hz
Frequency response: ± 0.15 dB from 11 to 20,000 Hz

Maximum phase shift (from 5,000 to 20,000 Hz): -0.65 degree at 20,000 Hz
Low-level linearity error (without dither): +0.05 dB at -90 dB
Cueing time: 1.8 seconds
Cueing accuracy: A
Impact resistance: top, A; sides, A
Defect tracking: tracked 1,500-micrometer level of Pierre Verany #2 test disc

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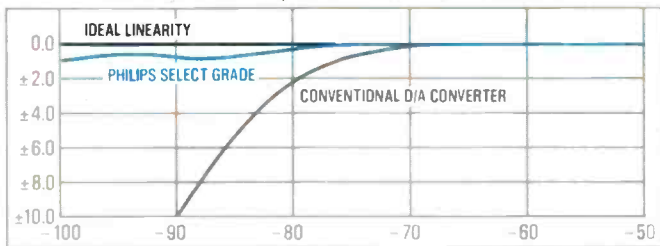
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This exceptional D/A converter is mated to a Philips 4X oversampling digital filter for superior performance. Philips pioneered 4X oversampling and our experience with digital filtering is unequalled.

- Broadcast standard "Radialinear" transport. Philips commitment to exacting specifications is also evident in the CD960's mechanical construction. It features a high-grade cast alloy chassis. A linear-design motor was chosen to drive the radial pivoting arm for fast track access and exceptional resistance to external vibrations.

- Multiple power supplies. To eliminate cross talk, the CD960 incorporates no less than four separate power supply sections. And the 100-watt main transformer is partitioned to further shield against magnetic and power line interference.

From the company that created the compact disc, Philips proudly offers the CD960 for those who won't tolerate anything less than perfection. To audition the CD960, call 1-800-223-7772 for your nearest Philips audio specialist.

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impressive as its measurements or sound, both of which may already have surpassed the actual needs of the vast majority of users. In fact, the same could be said for its vast array of programming, editing, and operating features. One omission that we noticed was the capability of accessing an indexed point on a disc directly; index cueing can be done only in the fast-search mode, using the index display in the window as a guide.

For people who tape their CD's for use in a car and are particular about what they plan to listen to while driving, the CDP-608ESD offers a unique combination of capabilities. While we did not try *every* feature it provides, we did experiment with its various programming modes to convince ourselves that they work as claimed—they do. To the question of whether all the features can be used effectively by the typical hi-fi enthusiast, our answer is a qualified "yes." If you are one of those people who never glance at an instruction manual, you have little chance of realizing the potential of this product. And if you are one of the large number of people who have never been able to program a VCR successfully, you are probably doomed to frustration with the CDP-608ESD. Then too, the manual is not always as understandable as it should be, with an occasional lapse in clarity or specificity that may be the result of less than ideal translation from the Japanese. Still, anyone who studies the instructions carefully and follows the procedures outlined in the manual will be amply rewarded.

Since very few people will need its full capabilities, and since anyone should be able to use it without difficulty as a conventional CD player, we have no hesitation in recommending the Sony CDP-608ESD to *everyone* who wants a rugged, impressively refined product with silky smooth and quiet mechanical operation along with virtually perfect electrical and acoustical performance. Actually very reasonably priced in view of what it offers, it is one of the most impressive products we have tested and used in quite some time.

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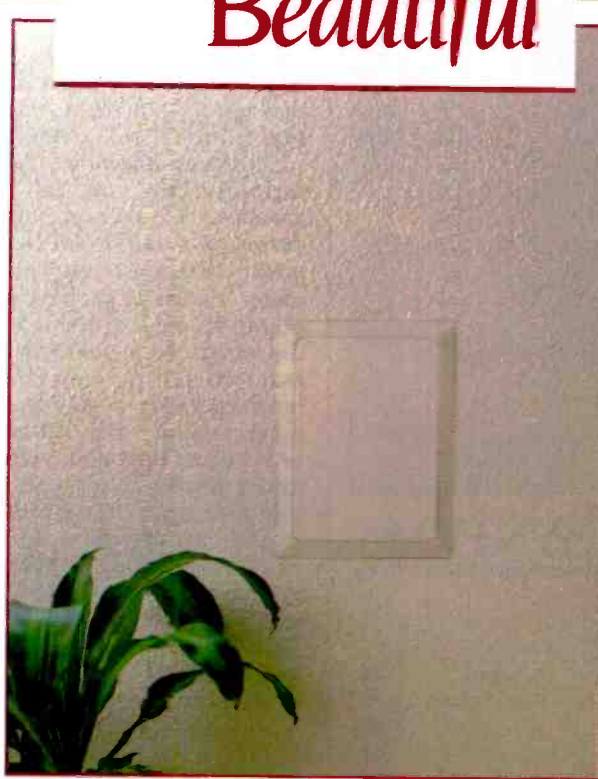
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CELESTION 3 SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

UNTIL recently, there were two broad categories of Celestion speakers: the DL series and the SL series. The DL series speakers are fairly conventional, low-to-moderate-cost systems of different sizes, with prices ranging from \$330 to \$929 a pair. Speakers in the SL series, on the other hand, are considerably more expensive (\$950 to \$3,000 a pair), and all of them are housed in cabinets of similar size and shape. They have a well-deserved reputation for quality among serious audiophiles in Britain and the U.S.

At the January Consumer Electronics Show, Celestion introduced a new speaker, the Celestion 3, that is smaller and less expensive than any of the company's previous models, and demonstrations in Celestion's CES exhibit room indicated that it produced remarkable sound for such a small, moderately priced speaker. We have now had the opportunity to test and listen to a pair of the Celestion 3 speakers.

A bookshelf system that weighs 8 1/4 pounds and measures only 12 1/4 inches high, 7 1/4 inches wide, and 8 5/8 inches deep, the Celestion 3 has a

wooden cabinet finished in black and a removable black cloth grille. When the grille is removed, the speaker resembles a half-size version of Celestion's SL-6Si, with what appears to be a 5-inch paper-cone woofer operating in a sealed enclosure and a 1-inch aluminum-dome tweeter. The binding posts recessed into the rear of the cabinet accept banana plugs, stripped wire ends, or open lugs.

Although no specifications or technical details on the Celestion 3 were furnished with the speakers, we were able to derive most of the relevant information by direct measurement. Price: \$250 a pair. Celestion, Dept. SR, 89 Doug Brown Way, Holliston, MA 01746.

Lab Tests

We placed the Celestion 3 speakers on 26-inch stands for testing. Like most small speakers, they are designed to give their best performance in a free-standing installation, not too close to a room-boundary surface. The averaged room response was smooth and uniform over most of the audio range, varying less than ± 2 dB from 500 to

20,000 Hz. The close-miked woofer response reached a maximum in the 100- to 300-Hz range, falling at 12 dB per octave below 100 Hz. There was also a slight rolloff above 300 Hz, although the close-miked measurements are not valid above a few hundred hertz. Splicing the room and woofer response curves resulted in a curve showing a ± 4 -dB variation from 57 to 20,000 Hz.

Our quasi-anechoic FFT response measurements showed that the crossover between the drivers occurred at about 2,000 Hz. The frequency response on-axis at a 1-meter distance showed a distinct output increase of about 5 or 6 dB in the range from 5,000 to 9,000 Hz that was not present in the room response or in a 45-degree-off-axis measurement. The off-axis measurement showed that, excluding the raised portion of the axial response, the horizontal dispersion of the speaker was excellent up to 10,000 Hz. The difference between the on-axis and off-axis curves did not exceed 6 dB up to 20,000 Hz.

The phase linearity of the speaker was outstanding, resulting in a group-delay variation of less than ± 0.2 millisecond from 500 to 30,000 Hz. The system's sensitivity was relatively high, a 91-dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. The impedance dipped to 7 ohms at 20 Hz and between 200 and 250 Hz, and it reached its minimum of 6.5 ohms at 10,000 Hz. Its maximum was 55 ohms at the bass resonance frequency of 82 Hz, and it measured 30 ohms at 2,000 Hz, another indication that this was the approximate crossover frequency between the woofer and tweeter.

The woofer's distortion with a 2.52-volt drive level (corresponding to a 90-dB SPL in our sensitivity measurement) was about 1 percent at 200 Hz, 2 percent at 100 Hz, and 5 percent at 60 Hz, the approximate lower limit of the speaker's useful response. Despite the small size of the Celestion 3, it was able to handle a considerable pulse power input (a single-cycle tone burst). At 100 Hz, the 5-inch woofer rattled at an input of 168 watts into its 19-ohm impedance. At 1,000 Hz, where the impedance was 18 ohms, our amplifier



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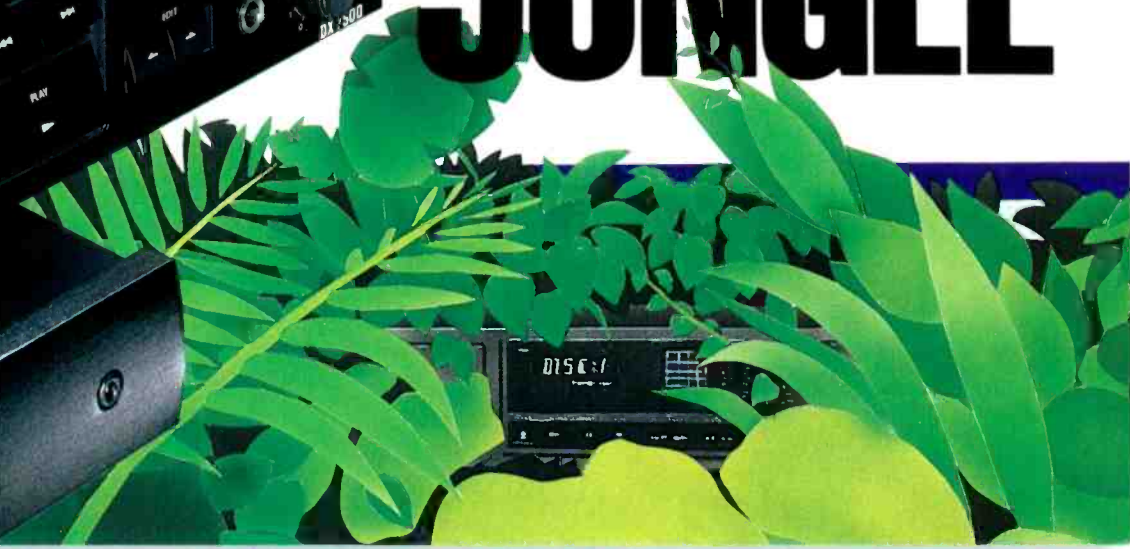
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RISING ABOVE THE CD JUNGLE





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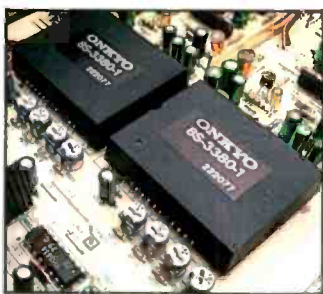
That's because the "jungle of misinformation" about CD players makes it difficult to know what's really important. And what isn't.

Take a quick look at some of the claims—digital bit structures (what are they, anyway?) ranging from 1 to 45. Oversampling rates from 2x to (quick, who's got the latest?) 16x. All this for the sake of a numbers race. And not necessarily for the sake of the music.

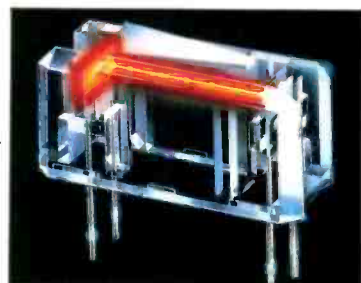
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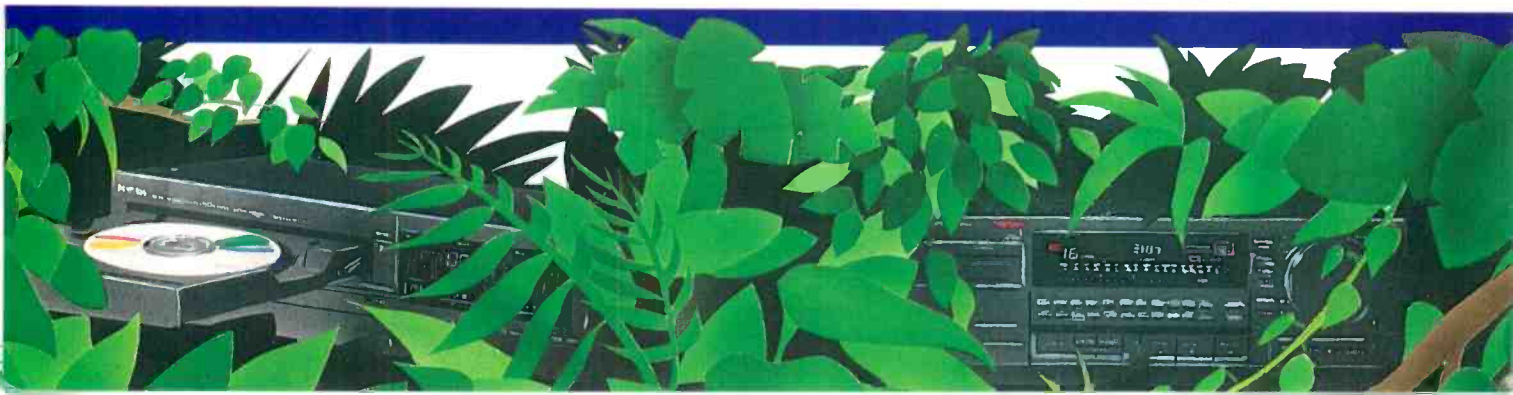
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clipped at 400 watts before the speaker emitted sounds of distress, and at 10,000 Hz the tweeter absorbed 745 watts into its 8.5-ohm impedance at the clipping point.

Comments

Good as they were, the measurement results from the Celestion 3 do not begin to describe its performance. It had a clarity and spectral balance that seemed entirely inconsistent with its size and price. There was none of the usual "small speaker" sound character, such as thin bass or overly bright treble. It sounded the way we would expect a Celestion speaker to sound.

Luckily, we were able to put that judgment to a real test, as we had a pair of Celestion SL-12Si speakers on hand. This speaker has almost three times the cabinet volume of the Celestion 3 and sells for about six times its price. We consider it to be Celestion's finest, and one of the best speakers we have had the pleasure of using.

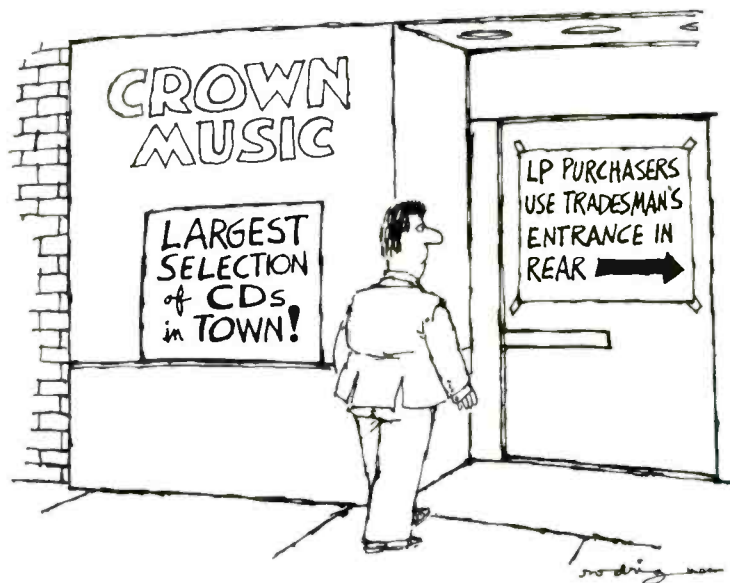
We placed the Celestion 3's on top of the SL-12Si's, to minimize position shifts when switching, and proceeded to compare the two. The similarities between them were much greater than the differences. In fact, often the most obvious difference when we switched from one speaker pair to the other was a change in the spatial quality of the

sound. The SL-12Si is capable of creating a seamless sound stage across the whole width and height of our listening room. The Celestion 3 did no better, or worse, than hundreds of other speakers we have tested in matching this aspect of the SL-12Si's performance.

We also heard (in some program material) a slight brightness in the sound of the Celestion 3 compared with the SL-12Si. This brightness appeared to come from the Celestion 3's increased treble response in the 5,000- to 9,000-Hz range, an effect that is concentrated along the forward axis of the speaker. There was a substantial difference in the bass performance of the two speakers as well, even though the SL-12Si is not designed to generate large amounts of low bass. The difference appeared to be mostly in the upper bass and lower midrange, where the SL-12Si has two 6-inch drivers in operation. In their basic character, however, the two speakers were so similar that from a normal position many people would not be able to detect which one was playing.

This is not a review of the SL-12Si, but being able to make these comparisons with it gives me a solid basis for saying that the Celestion 3 is one of the most outstanding small speakers I have heard, and an absolute "best buy" at its price.

Circle 141 on reader service card



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—REVUE DU SON, foremost French stereo magazine.

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CIRCLE NO. 67 ON READER SERVICE CARD



ROCKFORD FOSGATE RF200 PREAMPLIFIER AND RF2000 POWER AMPLIFIER

Julian Hirsch, Hirsch-Houck Laboratories

ROCKFORD FOSGATE, which is known primarily for automotive audio components, has now entered the home hi-fi market with a high-quality preamplifier and power amplifier. The two units, similar in styling and finish, offer a high degree of operating versatility.

The compact RF200 preamplifier has slightly sculptured sides that enhance the appearance of the otherwise conventional black box. All of the controls are clearly marked in large, white letters. The four inputs (three high-level and one phono) are selected by pushbuttons. Other pushbuttons operate the tape-monitor switch, tone bypass, and mono/

stereo mode selection. Small center-detented knobs control bass, treble, and balance, and a larger knob operates the volume control. A rocker-type power switch, headphone jack, and green LED pilot light complete the front-panel features.

The gold-plated phono jacks on the rear include the inputs for all signal sources and input and output connectors (normally joined by jumpers) for an external-processing loop to insert an equalizer or another accessory into the signal path. There is a single switched AC outlet.

The preamplifier has three pairs of output jacks, identified as main out, high out, and low out. The latter two are used with the preamplifi-

er's built-in active crossover network for driving biamplified speakers through additional power amplifiers. As delivered from the factory, the RF200's internal crossover is set at 100 Hz (with 12-dB-per-octave slopes), but the frequency can be changed by the user without opening up the cabinet. Removing a small plate on the rear apron exposes a dual in-line package (DIP) containing the resistors that determine the crossover frequency. The instruction manual contains the formula for calculating the resistance values for any frequency, allowing the user to make a custom crossover module. Additional DIP assemblies are available from Rockford Fosgate for crossover frequencies from 50 to 9,000 Hz at half-octave intervals.

The RF2000 power amplifier is a very powerful and rugged component. The power supply uses a large toroidal transformer, which is able to supply 1,000 watts continuously, and a total of more than 80,000 microfarads of filter capacitance.


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TEST REPORTS

Each output channel uses sixteen MOSFET power transistors to deliver a peak output current in excess of 50 amperes to a speaker load. The amplifier is fully rated for use with 4- or 8-ohm loads, and it can operate stably into 2 ohms, although heavy, sustained 2-ohm operation may trigger its thermal-shutdown protection system.

The thermal protectors, mounted

on the output-transistor heat sinks, respond to a temperature rise by turning on and gradually increasing the speed of the built-in cooling fan. Normally the fan is either off or turning so slowly as to be inaudible, and under home listening conditions it is unlikely to be heard. If the heat-sink temperature approaches a dangerous value, the amplifier shuts off altogether.

Another protective system monitors the operating current and voltage of the output devices, calculates their internal temperature, and cuts the power to safe values when the maximum limits are reached. At this time, the green power-status LED on the front panel changes to red. Since the fan continues to cool the output stages, the amplifier soon returns to normal operation. There are also two channel-status LED's on the panel, which are extinguished when the amplifier is off or if its power output is under about 200 milliwatts (such as during a quiet portion of a program). In normal operation, they are both green. If there is distortion in a channel's output signal, for any reason, its light changes to red.

The RF2000 is rated for 200 watts per channel into 8 ohms from 20 to 20,000 Hz with less than 0.05 percent total harmonic distortion. Into 4-ohm loads the rated output is 300 watts per channel with less than 0.1 percent distortion. A switch on the rear of the amplifier bridges the two channels, giving it a mono rating of 600 watts into 8 ohms. Another operating mode uses the bridged connection to drive a mono subwoofer or center-channel speaker while driving two satellite speakers in the normal stereo mode. Normally the input signal ground is floating (isolated from the output grounds), but a third switch connects the chassis to the output ground should this be desired.

The only front-panel features of the RF2000 are the three LED signal lights and a rocker-type power switch. Its rear apron, in addition to the bridging and grounding switches, contains five-way binding-post speaker terminals (which can accept standard twin banana-plug connectors). Each speaker output is protected by a 5-ampere fuse. The input phono jacks are gold plated, and there are individual level-control knobs for the two channels. The cooling-fan exhaust is in the rear of the amplifier.

The RF200 preamplifier measures 17½ inches wide, 8⅞ inches deep, and 2¾ inches high and weighs about 6 pounds. The RF2000 amplifier is the same width but 12¼ inches deep and 4½ inches

FEATURES

RF200 Preamplifier

- Pushbutton input selection
- Three high-level inputs, one phono (MM) input
- Gold-plated input and output jacks
- Tape-monitor loop
- External-processor loop
- Bass and treble tone controls with bypass switch
- Mono/stereo switch
- Headphone jack
- Built-in active crossover; crossover frequencies changeable by user with plug-in modules
- High-efficiency toroid power transformer for reduced hum

RF2000 Power Amplifier

- Sixteen MOSFET output devices per channel
- Rated for 4- and 8-ohm loads; safe, stable performance with 2-ohm loads
- Protected by thermal sensors
- Continuously variable fan speed for silent operation
- Speaker-protection fuses
- Toroidal power transformer
- Normal stereo, stereo plus bridged-mono, bridged-mono, and dual-mono operating modes
- Power-status LED indicator
- Separate channel-status LED's to indicate low-level operation, normal operation, and presence of output distortion
- Individual level controls for each channel on rear

LABORATORY MEASUREMENTS

RF200 Preamplifier

- Frequency response:** 20 to 20,000 Hz +0.02, -0.05 dB
- Output at clipping:** 8.8 volts
- Sensitivity (for a 0.5-volt output):** high-level (CD), 53 mV; phono, 0.52 mV
- A-weighted noise (referred to 0.5-volt output):** high-level (CD), -91 dB; phono, -83.6 dB
- RIAA equalization error:** 20 to 20,000 Hz, +0.15, -0.8 dB
- Phono-input overload:** 20 Hz, 74 mV; 1,000 Hz, 73 mV; 20,000 Hz, 71 mV
- Phono-input impedance:** 47,000 ohms in parallel with 130 pF
- Harmonic distortion (THD + noise) at 1 dB below clipping level:** 0.003%
- Tone-control range:** 100 Hz, ±7 dB; 10,000 Hz, ±9.5 dB

RF2000 Power Amplifier

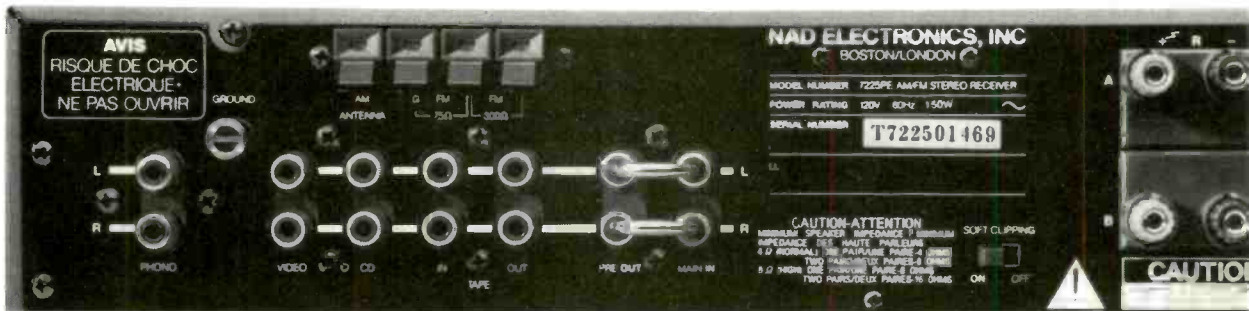
- Sensitivity (for a 1-watt output):** 45 mV
- A-weighted noise (referred to a 1-watt output):** -95 dB
- Output at clipping (1,000 Hz):** 345 watts into 8 ohms, 565 watts into 4 ohms
- Clipping headroom (relative to rated output):** 4.7 dB into 8 ohms, 5.4 dB into 4 ohms
- Dynamic power output:** 450 watts into 8 ohms, 720 watts into 4 ohms, 1,150 watts into 2 ohms
- Dynamic headroom:** 7 dB into 8 ohms, 7.6 dB into 4 ohms
- Slew factor:** 12.5
- Frequency response:** 20 to 20,000 Hz +0, -0.37 dB
- Harmonic distortion (THD + noise at 1,000 Hz into 8 ohms):** 0.003% at 20 watts, 0.0021% at 100 watts, 0.0023% at 200 watts
- Maximum distortion (20 to 20,000 Hz into 8 ohms):** 0.0077% at 200 watts (10,000 Hz)

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President, NAD (USA)



The 7225PE's front panel contains all the controls and displays needed for effective day-to-day use.



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in its class. The ultimate judgment, however, should be made by listening. We invite you to do so at one of our carefully selected dealers. You may be surprised at what you hear.

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TEST REPORTS

high; it weighs 35 pounds. Prices: RF200, \$550; RF2000, \$1,198. Rockford Fosgate, Dept. SR, 613 S. Rockford Dr., Tempe, AZ 85281.

Lab Tests

The RF200 met or surpassed all its specifications in our tests. Its clipping-level output (from the main outputs) was 8.8 volts, and the sensitivity for a reference output of 0.5 volt was 53 millivolts (mV) through a high-level input and 0.52 mV through the phono input. The phono-preamplifier stage overloaded at inputs between 71 and 74 mV from 20 to 20,000 Hz. The phono-input impedance was 47,000 ohms in parallel with 130 pF. The A-weighted signal-to-noise ratio was 91 dB through a high-level input and 83.6 dB through the phono input.

The frequency response, essentially unaffected by having the tone controls in the circuit, was flat within 0.01 dB from 20 to 15,000 Hz, down 0.05 dB at 20,000 Hz, and down only 0.4 dB at 50,000 Hz. The RIAA equalization error was ± 0.15 dB from 20 to 10,000 Hz and -0.5 dB at 15,000 Hz. The active crossover frequency was 100 Hz, as rated, with the specified 12-dB-per-octave slopes. The tone controls did not affect the response between 500 and 1,000 Hz. The bass control had its maximum effect at 40 Hz, where the output could be varied ± 14 dB. The treble control had its maximum effect of ± 11 dB at 20,000 Hz. Channel separation (through a high-level input) was about 80 dB from 20 to 2,000 Hz, falling to 66 dB at 20,000 Hz with the unused input shorted or to -40 dB with it open-circuited. The crosstalk from the CD input to the tuner input was a constant -80 dB from 20 to 20,000 Hz. Harmonic distortion at 1,000 Hz reached its minimum of 0.003 percent just before the output clipped.

The RF2000 power amplifier proved to be very conservatively rated. After the FTC-mandated 1-hour preconditioning, during which the exterior of the amplifier became only moderately warm, its 1,000-Hz output clipped at 345 watts into 8 ohms and at 565 watts into 4 ohms. The respective clipping-headroom figures were 4.7 and 5.4 dB. With a 2-ohm load, the 5-ampere speaker-

output fuses blew before the amplifier waveform clipped.

In dynamic power tests, the 8- and 4-ohm power levels at clipping were 450 and 720 watts, respectively, corresponding to dynamic-headroom figures of 7 and 7.6 dB. Since the average power is relatively low during these tone-burst tests, we were also able to measure the 2-ohm dynamic power—a most impressive 1,150 watts!

The harmonic distortion (THD plus noise) was less than 0.0023 percent at the rated 200 watts into 8 ohms for frequencies between 20 and 1,000 Hz. It rose slowly at higher frequencies to a maximum of just under 0.008 percent at 10,000 Hz. At lower power levels the distortion readings were roughly similar.

The low-level frequency response of the RF2000 was down 0.2 dB at 20 and 10,000 Hz and 0.37 dB at 20,000 Hz. The -3 -dB frequency was 100,000 Hz. With the input level controls at their maximum settings, an input of 45 mV was needed for a reference output of 1 watt, and the A-weighted noise was -95 dB referred to 1 watt. The amplifier's slew factor was 12.5 (the waveform at 200 watts output became triangular at approximately 250 kHz), and it was exceptionally stable with capacitive loads, showing no overshoot or ringing in square-wave tests.

Comments

The test results speak eloquently for the quality of both the RF200 and the RF2000, which certainly constitute an auspicious entry into the home market by Rockford Fosgate. We were very impressed by the degree to which they surpassed their key specifications in our tests. The "bulletproof" nature of the RF2000 amplifier was readily apparent. Moreover, even though it has electronic circuit protection for the output transistors, it also has speaker fuses that are likely to blow well before the amplifier reaches its own limits.

There were other encouraging features of these components, which we operated together in our listening tests. Neither had any tendency to produce an output transient when it was switched on or off, and

either one can be turned on or off before the other without risking damage to the speakers or the listeners' sensibilities. The manufacturer does suggest, however, that the power amplifier be switched on last and off first since other system components may not be as carefully guarded from power-surge transients as the RF200 and RF2000. And the same care was taken with the other switches on the RF200, so that both components are true "silent partners" in a music system.

We did not operate the RF2000 in its bridged modes, in which it should be an even more formidable amplifier than it was in a normal stereo configuration. We noted with interest that although a warm breeze could sometimes be felt emerging from the fan vent on its rear apron, absolutely no sound could be heard from the fan. Neither the amplifier nor the preamplifier ever became more than faintly warm to the touch.

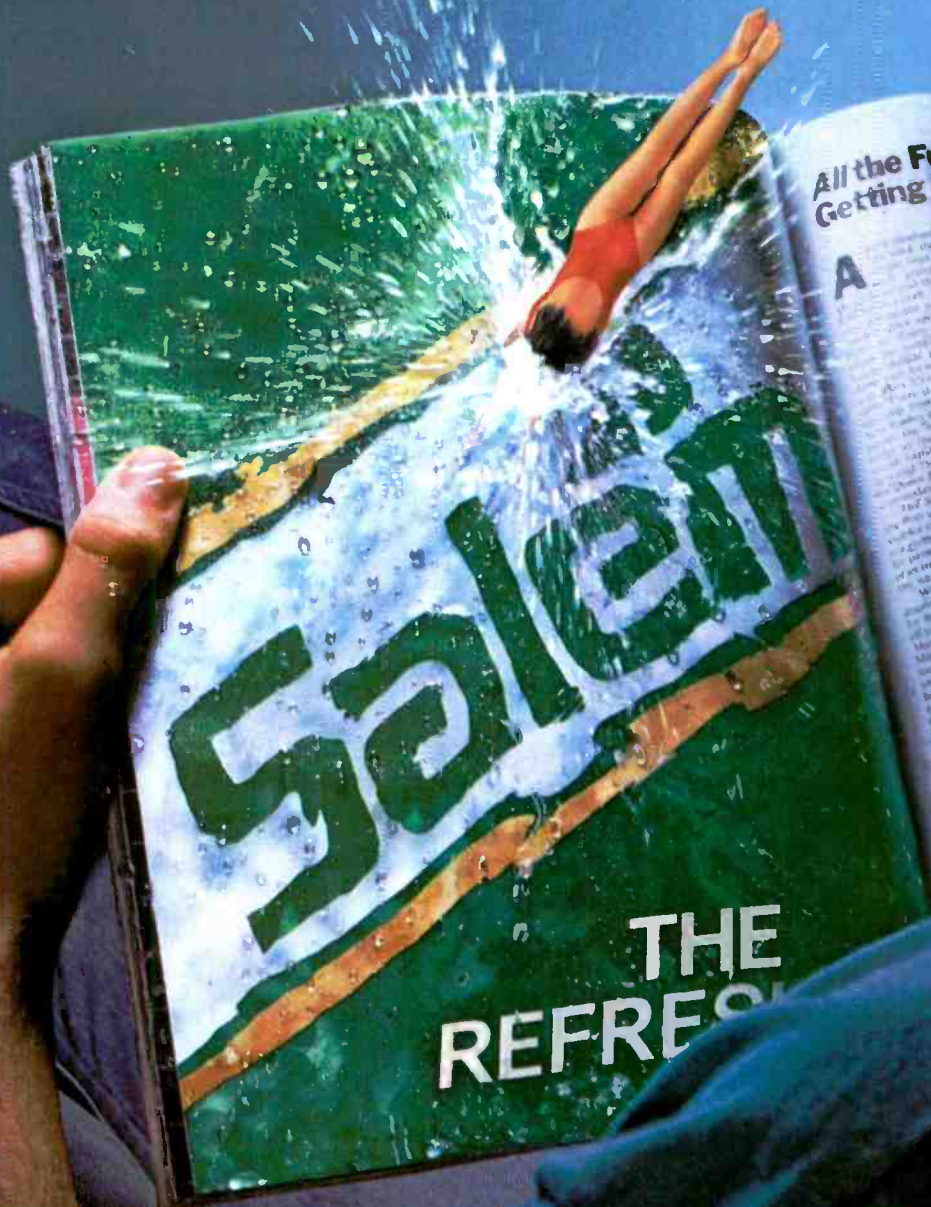
Finally, the user's needs have been taken into consideration in the design of these products. The instruction manuals, though unpretentious in size and appearance, tell how to install and use the components in clear and unambiguous language. The preamplifier's control markings are legible—and intelligible as well, thanks to a welcome absence of cryptic abbreviations—and the channel lights on the power amplifier are an exceptionally simple and effective source of information. They're off when the signal level is near zero, bright green during all normal operation, and red only when the amplifier's output is becoming nonlinear. This system is far more practical than either level meters or an array of LED's, since it indicates unequivocally when the amplifier is operating within its linear range and when those limits are being even momentarily exceeded.

As for "how they sound"—if you believe that *all* amplifiers sound different, you will have to listen for yourself. I hold that all good amplifiers sound pretty much alike, and the Rockford Fosgate units are very good amplifiers. I found them a pleasure to test and to use in a music system.

Circle 142 on reader service card

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CIRCLE NO. 94 ON READER SERVICE CARD



BEYERDYNAMIC IRS 690 CORDLESS HEADPHONES

Julian Hirsch, Hirsch-Houck Laboratories

SINCE the time when radio was called "wireless," the profusion of wires involved in any working audio installation has contrasted sharply with that name. More recently, as the sophistication of consumer electronic products has increased and they have become an integral part of the modern household, there has been a welcome trend toward reduction of the wires external to the basic components themselves.

Examples of this trend include cordless telephones, wireless remote controllers for stereo and video components, wireless auxiliary speakers, and cordless headphones. Early remote-control systems used ultrasonic sound waves as carriers for the control information, and some used radio-frequency electrical signals, either radiated (as with telephones) or carried by house power wiring, but most contemporary systems employ infrared light-beam carriers.

Infrared stereo headphones were introduced a number of years ago, and many theaters now offer infrared phones for the benefit of hearing-impaired patrons, but they

have not made a significant impact on the home hi-fi market. For one thing, although some of these headphones have had reasonably good sound quality, they generally did not offer much competition to the better conventional audiophile phones. Also, a wireless headphone is always more costly than wired phones of equivalent performance, because it uses a separate transmitter unit plus a receiver in the headphone assembly.

A new wireless headphone from Beyerdynamic of West Germany may help increase the acceptance of wireless phones among serious music listeners. Beyer phones have a well-earned reputation for quality, and the new IRS 690 system has been designed to meet true high-fidelity standards. The transmitter is a flat package about the size of a hand-held remote control. It is connected by a slender cord to a remote power supply that plugs directly into the wall and delivers 24 volts DC to the transmitter. The transmitter is designed to be installed in the base of a polystyrene display unit that also holds the headphones when they are not in use.

The headphones themselves resemble a conventional circumaural headset, with an adjustable plastic headband whose inner cloth band rests on the wearer's head. An opaque dark-blue dome, about half an inch in diameter, is mounted on the top of the headband. It contains a photodiode that receives the radiation from the linear array of LED's across the front of the transmitter.

The headset also contains the receiver that amplifies and demodulates the left- and right-channel frequency-modulated carrier signals from the transmitter. The specifications provided with the system indicate the use of 95- and 250-kHz sub-carrier frequencies for the two channels (modulating the infrared light-beam carrier), with a nominal frequency deviation of ± 30 kHz and a peak deviation of ± 50 kHz.

The left earpiece contains the on/off switch for the phones, which are powered by an 8.6-volt rechargeable battery. When the phones are placed on their stand, a plug from the transmitter power supply can be inserted into a socket on the bottom of the left earpiece to charge the battery. According to the manual, the phones can be used for about 4 hours on a charge and can be completely recharged in 14 hours. The right earpiece has a three-position slide switch, which selects stereo operation or sends a mono signal (either the left or the right channel) to



END OF CONVERSATION.

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To reproduce the extended low frequencies found on digital recordings, Pioneer developed a twin woofer system that packs a punch you'll feel as well as hear. Opposite-mounted bar-jointed

woofers placed in the center of the TZ's cabinet minimize standing waves while providing accurate low-frequency response to 20 Hz.

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is specially constructed, using 1" thick high-density board and a separate inner baffle that isolates the negative influence of low-frequency

vibration. Corners are specially rounded to eliminate diffraction and drivers are arranged for optimum sound-field intensity. The result is imaging and clarity that bring performances alive with smooth, true-to-life sound.

But enough conversation. If you're interested in hearing more about Pioneer's new TZ Series speakers, call 1-800-421-1404 for a technical white paper and the Elite dealer nearest you.

And let the speakers do the talking.



© 1989 Pioneer Electronics (USA) Inc., Long Beach, CA
Model shown: TZ-9. Also available: TZ-7.

TEST REPORTS

both ears, and a volume-adjustment wheel that affects both channels.

The transmitter has a small power button on its front and a red LED that glows dimly when its power supply is plugged into a 120-volt source. The LED brightens or flashes when the audio-signal input exceeds 2 volts (the system's overload level). A signal greater than 35 millivolts automatically turns on the infrared carrier, and if the signal drops below that level for 45 seconds, the carrier automatically shuts off.

The key specifications for the IRS 690 system include a frequency response of 20 to 20,000 Hz, a maximum acoustic output level of 114 dB, and distortion of less than 1.5 percent. The channel "synchronism" (presumably balance) is given as better than 1.5 dB. A nominal 1-volt input signal is required for the rated FM deviation. Price: \$399 complete. Beyerdynamic, Dept. SR, 5-05 Burns Ave., Hicksville, NY 11801.

Lab Tests

We tested the IRS 690 phones on a standard headphone coupler. The transmitter, driven from the output of our Audio Precision System One measurement system, was located about 6 inches from the receiving dome of the headphones.

The transmitter's overload light came on at signal inputs that varied with frequency from a maximum of 4 volts at 20 Hz to a minimum of 0.4 volt at 15,000 Hz, averaging about 2.5 volts over most of the midrange. The transmission area is specified as 4 x 6 meters (about 12½ by 18½ feet), and we found that it easily covered our 15 x 20-foot room. (It is important, however, that the path between receiver and transmitter not be obstructed by any optically opaque material.) When the signal level fell sufficiently, we heard a background hiss similar to the weak-signal hiss of an FM tuner.

The acoustic output of the headphones clipped at about a 119-dB sound-pressure level, well above the rated 114 dB. The frequency response was good, with a somewhat emphasized output in the lower midrange and upper bass and in the range between 1,000 and 5,000 Hz. Relative to the 1,000-Hz level, the

the output reached a maximum of about +6 dB at 180 and 5,000 Hz, falling off to -10 dB at 20 and 14,000 Hz.

The channel separation (relative to the clipping output of the phones) was about 35 dB through the midrange, falling to 20 to 30 dB in the 4,000- to 10,000 Hz-range and to 10 dB at 20,000 Hz. With the headphone level control set for the onset of clipping at a maximum 1,000-Hz signal input of 1 volt, the total harmonic distortion (THD) plus noise was about 1 percent for inputs between 0.3 and 0.7 volt. At lower levels the readings were higher because of the relatively greater influence of wide-band noise, and the distortion reached the rated 1.5 percent at the point of clipping. A spectrum analysis showed that the distortion was predominantly second and third harmonics.

The unweighted noise spectrum was -60 to -70 dB (referred to the clipping level of the output) from 100 to 10,000 Hz, falling to -80 dB at 20,000 Hz. Power-line hum obscured the noise at lower frequencies, which measured -33 dB at 60 Hz. This effect may have been an artifact of the measurement setup, however, since we never heard any hum in our listening tests.

Comments

The Beyerdynamic IRS 690 phones not only worked flawlessly, but they sounded excellent, ranking

among the better headphones we have tested over the years. They had an ideal balance across the full audible range, with crisp but never strident highs and a deep but not tubby bass. The available volume was more than sufficient—most of the time we used about half the rotation of the earpiece volume control.

The headset was light and comfortable, and its circumaural earcups, which enclosed the ears completely, attenuated external sounds only slightly because of their open-backed construction. The infrared beam from the transmitter apparently reflected strongly from the room walls and ceiling, since the listener could be a full 90 degrees off either the horizontal or vertical axis of the transmitter without a significant increase in background hiss anywhere in the room. Only by covering the receiving-diode dome on the headband were we able to impair reception significantly.

The absence of the umbilical cord that normally links a headphone listener to the program source is a definite plus, and the infrared system never compromised the uncommonly smooth and balanced sound of the phones. These qualities, combined with their physical comfort, may well make the Beyerdynamic IRS 690 system the headphones of choice for people who cannot tolerate the limitations of ordinary headphones.

Circle 143 on reader service card



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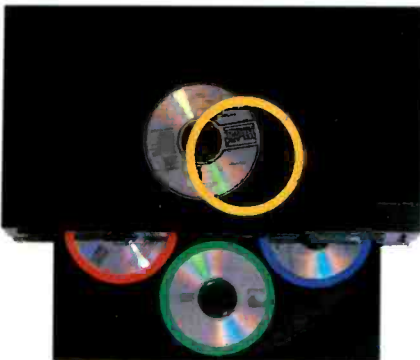
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JOOK LEUNG

PROTON SD-1000 SURROUND-SOUND DECODER

Julian Hirsch, Hirsch-Houck Laboratories

THE increased integration of home video and high-fidelity music systems has spurred the development of audio/video (A/V) receivers and surround-sound decoders that can be used with a VCR or videodisc player (VDP) to bring the impact of theater surround sound, or Dolby Stereo, into the home. In general, A/V receivers require only a simple matrix decoder with Dolby B noise reduction to meet the licensing requirements of Dolby Laboratories. Although even this basic configuration can provide much of the subjective benefit of surround sound, its full realization requires a more advanced "logic" decoder. These decoders are not used in typical A/V receivers because of their complexity and cost, but they are a part of most accessory decoders.

Basically, the Dolby system combines four channels of information in a so-called MP (motion-picture) matrix to form two channels that can be recorded on a film or video soundtrack. In playback, the two channels are passed through an inverse matrix decoder to recover the original four channels, consisting of

the left and right front signals, a mono center-front channel to fix dialogue in the center of the screen, and a surround channel to supply ambient sounds at the sides or rear of the theater. The center channel, formed by summing the two stereo channels, is heard from a speaker above or below the screen. The surround signal, derived from the difference between the left and right channels, is played through one or more speakers at the sides or rear of the room.

In a licensed Dolby Surround system for consumer use, the surround channel also undergoes Dolby B noise reduction, is delayed by 20 to 30 milliseconds relative to the front signals, and has its frequency response rolled off below 100 Hz and above 7,000 Hz. These modifications to the surround signal are needed to prevent dialogue and vocal sibilance from leaking into the rear channel, where they could destroy the spatial illusion the system attempts to create. Such leakage is inevitable in a basic MP matrix, which provides only 3 dB of separation between adjacent channels.

A variety of so-called "logic," or

steering, circuits have been developed to improve the effective separation between the channels derived from a matrix. They operate by sensing the relative levels and phases of the various signals and rapidly shifting their distribution in the matrix to cancel the leakage into other channels.

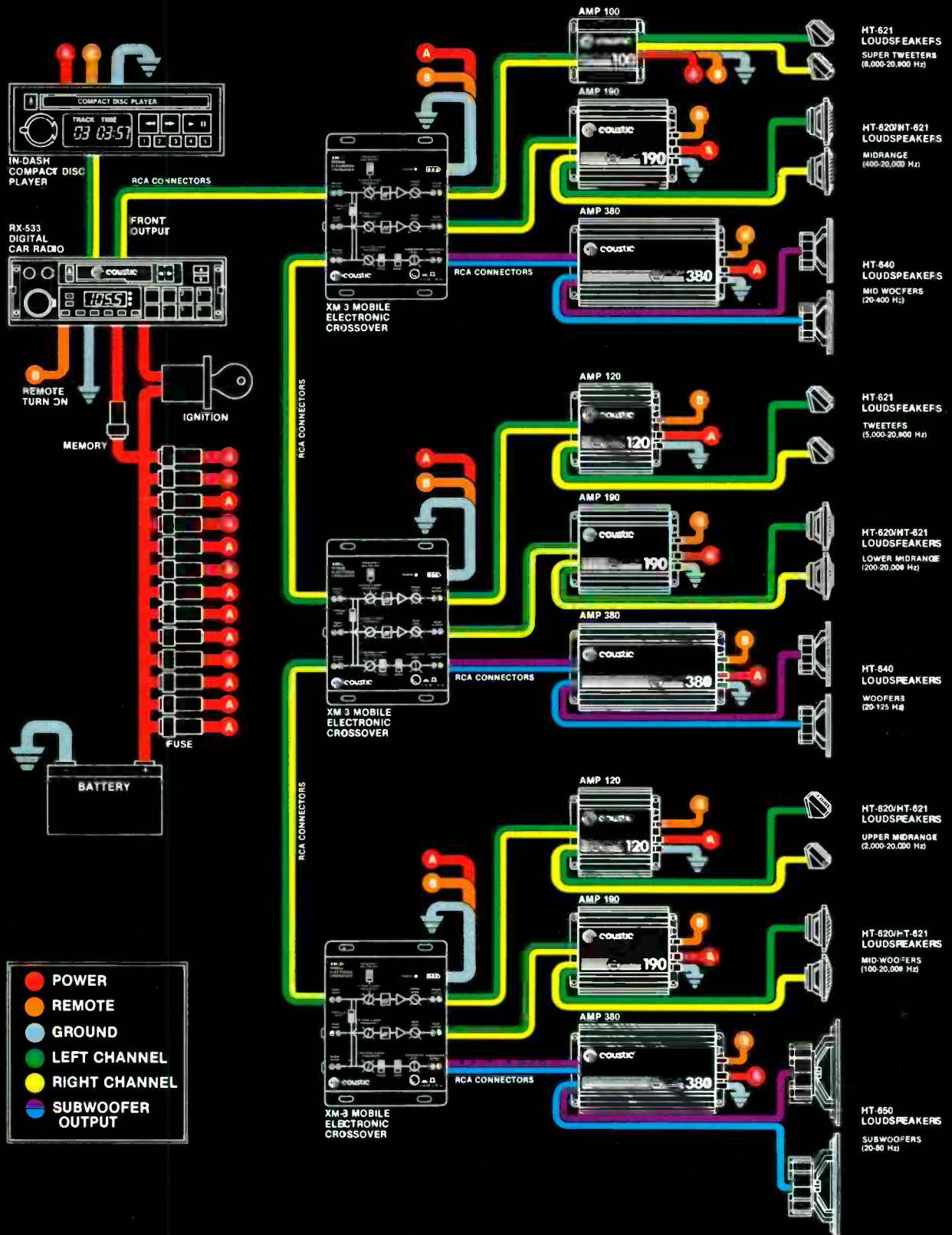
As might be expected, these steering systems vary widely in their effectiveness. Dolby Laboratories' Pro Logic, an advanced version of the basic Dolby matrix system, is widely used in the motion-picture industry. Although no matrix system, even with logic steering, is capable of true discrete performance, in which each of the four input channels is recovered in its original form from the decoding matrix, it is possible to come very close to achieving that result.

One high-performance matrix system was designed by Aphex Systems, a company well known in the professional sound and recording fields. The new Proton SD-1000 Enhanced Surround Decoder employs Aphex circuit designs. Unlike other surround systems, it does not use any time delays or digital signal processing. Its electrical performance has been designed to provide the general signal quality of a high-quality preamplifier without perceptible degradation of the signal. Its logic circuits operate about twice as fast as those of other decoders, and the separation it provides between adja-

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cent channels is claimed to exceed 40 dB (Dolby Pro Logic calls for at least 25 dB separation).

The result is a system whose specifications include a frequency response that is flat far beyond the audible range, a signal-to-noise ratio greater than 80 dB, less than 0.008 percent total harmonic distortion, and typical channel separations ranging from 40 to 58 dB (depending on the locations of the sources). It is designed to work in either the basic four-channel mode or as a six-channel system using additional speakers along the sides of the room. The decoder adapts itself automatically to the type of installation, depending on whether phono plugs are inserted into the extra output jacks, so that the full program content is available in either the four-channel or six-channel mode. There is also a mono subwoofer output with a 150-Hz crossover.

The Proton SD-1000's display window has colored, illuminated indications of volume, balance (in four directions, front, back, left, and right), and the status of its several control features. The only front-panel controls are a calibration button and an input-balance knob, with a 6-dB range, used to optimize the cancellation of front signals in the rear outputs. The SD-1000 has no front-panel power switch and is normally left powered at all times. It comes with a wireless remote control that operates all its functions, including on/off switching.

Four balance buttons on the remote control shift the gain along each of the major axes. Other buttons adjust the overall system gain, affecting all channels, and a mute button silences the system. Since the SD-1000 is normally connected into a tape-monitor loop, it has input and output jacks for a tape deck, and monitoring off the tape is switched by a separate button on the controller. A mode button mutes the surround channels, leaving the front channels operating without modification (BYPASS mode), or selects either the MUSIC or CINEMA operating mode. In the MUSIC mode, the surround channels carry the full audio bandwidth, and the left and right rear outputs are controlled by the front stereo infor-

mation. In the CINEMA mode, the SD-1000 emulates a Dolby Surround system, with its restricted rear-channel bandwidth, and is compatible with programs recorded with that system.

The SD-1000 has a separation-enhancement button that adjusts the degree of channel separation, with settings of 3, 6, 18, or 50 dB. There is also a control to deal with the problem of "dialogue scatter," in which sibilants may come from various parts of the room instead of the center front. The control apparently reduces this effect by rolling off the highest frequencies in certain of the channels (the instruction manual suggests using this feature when playing noisy recordings as well).

The Proton SD-1000 is a compact device, measuring 16½ inches wide, 9¾ inches deep, and only 2¾ inches high. Price: \$1,200. Proton Corp., Dept. SR, 5630 Cerritos Ave., Cypress, CA 90630.

Lab Tests

In our evaluation of the electrical properties of the SD-1000, the input circuit overloaded at 3.8 volts, well above a preamplifier's line level or tape-output level. The rear of the SD-1000 contains individual level adjustments for each of its seven available outputs (left and right for front, center, and back speakers and the subwoofer output). At their maximum settings, the gain in each channel was 3.8, and the output of each channel clipped at 7.7 volts. Most other measurements were made with the gain set to unity.

The total harmonic distortion (THD) plus noise at 3 volts output was 0.0055 percent. Spectrum analysis (excluding the noise) reduced this to 0.004 percent, essentially all second-harmonic. The distortion was not significantly greater at 7.7 volts, just below the clipping point.

The A-weighted noise was -98.5 dB referred to a 0.5-volt output, -114 dB referred to a 3-volt level. The front-channel frequency response was flat within 0.01 dB from 10 to 20,000 Hz, falling to -0.5 dB at 90,000 Hz. The rear-channel frequency response was ±0.2 dB from 20 to 20,000 Hz in the MUSIC mode,

and in the CINEMA mode it was down by 3 dB at 4,500 Hz and by 13.5 dB at 20,000 Hz. The mute button attenuated all outputs by 67 dB over the full 20- to 20,000-Hz range. A square-wave signal was reproduced with no trace of ringing or overshoot. The rear channels were 180 degrees out of phase with the front channels in the MUSIC mode; in the CINEMA mode they were approximately in phase from 20 to 1,000 Hz, changing to 90 degrees out of phase at 20,000 Hz.

Comments

Our measurements indicated that the SD-1000 was very unlikely to degrade even the finest digital signal in respect to frequency response, noise, or distortion, but only listening could show whether the Proton/Aphex approach to surround sound was fully successful.

We connected the SD-1000 to a pair of high-quality stereo amplifiers. These were connected to a pair of moderate-price compact speakers at the front of the room and a pair of smaller speakers at the wall-ceiling junctions near the rear of the room. Our program sources included LP records and FM radio as well as a high-quality VCR and a videodisc player used with a 25-inch monitor. The video material, all Dolby-encoded, included demonstration tapes and discs and commercial movie discs.

Used to enhance ordinary stereo programs, from recordings or off the air, the Proton SD-1000 imparted a healthy ambience, at least as good as what we have experienced from time-delay enhancement systems, but also quite different. The absence of any unnatural echo sounds, which can easily mar the effect of a time-delay system, was immediately apparent. We especially appreciated the SD-1000's performance with stereo FM broadcasts. Voice announcements on FM are normally in mono, and almost all time-delay systems that have been adjusted for a satisfactory effect with stereo music make a mono voice sound as if it were recorded in an echo chamber. The SD-1000 put the announcer front and center, without a trace of leakage in the rear.

It was impractical to make any

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direct comparisons with a true digital signal processor, but our impression is that while the latter *might* be more effective in simulating certain specific acoustic environments, it also requires very careful adjustment to avoid unnatural ambience effects. The Proton decoder was much less critical in respect to level setting and other adjustments, and it *never* sounded artificial.

We brought out some matrixed quadrasonic recordings of more than a decade ago to check the compatibility, if any, of the SD-1000 matrix with the SQ (CBS) and QS (Sansui) matrices. It was totally incompatible with the SQ from the standpoint of directional qualities, but it seemed more usable with the QS recordings. In neither case, however, was the result as satisfying as with ordinary stereo material.

The real test of the Proton SD-1000 was its performance with matrixed audio/video sources. Previous experience with other surround decoders and with this sort of program material had acquainted us with the benefits of even a simple MP matrix decoder, especially with such films as *Top Gun* and the various *Star Wars* releases. Well, the performance of the SD-1000 was nothing less than sensational. The ambience was no longer merely a vague sound effect toward the rear

of the room, and there were often a number of distinctly placed rear sound sources as well. The subjective separation was *total*. We heard no trace of front dialogue from the rear speakers, and the sounds they emitted were usually distinctly different from those we heard coming from the front of the room. Moreover, there was no audible noise from any of the speakers.

We can only surmise what these programs would have sounded like with the other two channels and a subwoofer in use. The *apparent* bass content of the video programs was much greater than one would have expected from the relatively small speakers we used. Of course, the demonstration recordings we used for this evaluation, mostly excerpts from regular commercial releases, were the kind of material that can benefit most from surround enhancement, and not all video releases would produce such spectacular results.

In short, we are unreservedly enthusiastic about Proton's SD-1000. It is not inexpensive, especially when you add two or three stereo amplifiers, as many pairs of speakers, and perhaps a subwoofer to your present stereo system. But this little box can put you front and center in your own home theater.

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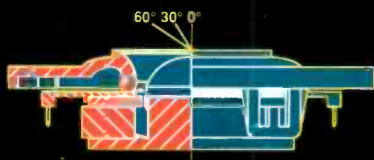
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TWEETERS: HT-603, HT-606

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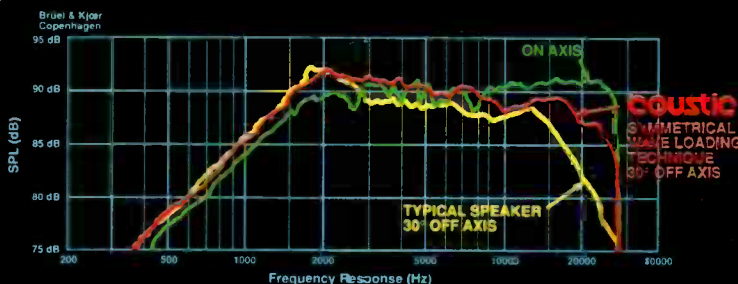
Your power amplifier system will certainly appreciate the combination of **HIGH TEMPERATURE ALUMINUM VOICE COIL** and **HI-ENERGY STRONTIUM MAGNET STRUCTURE** built for maximum heat dissipation and extreme power handling capability, with more accurate cone displacement resulting in faster transient re-



MIDRANGE/TWEETERS: HT-604, HT-606, HT-603, HT-605

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quency response, sumptuous midrange, tight and distortion-free low bass, superb instantaneous power handling and precise stereo imaging. In short, the illusion of life-like musical performance with superior clarity and 3-dimensional imaging.

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SUBWOOFERS: HT-610, HT-615, HT-608, HT-612

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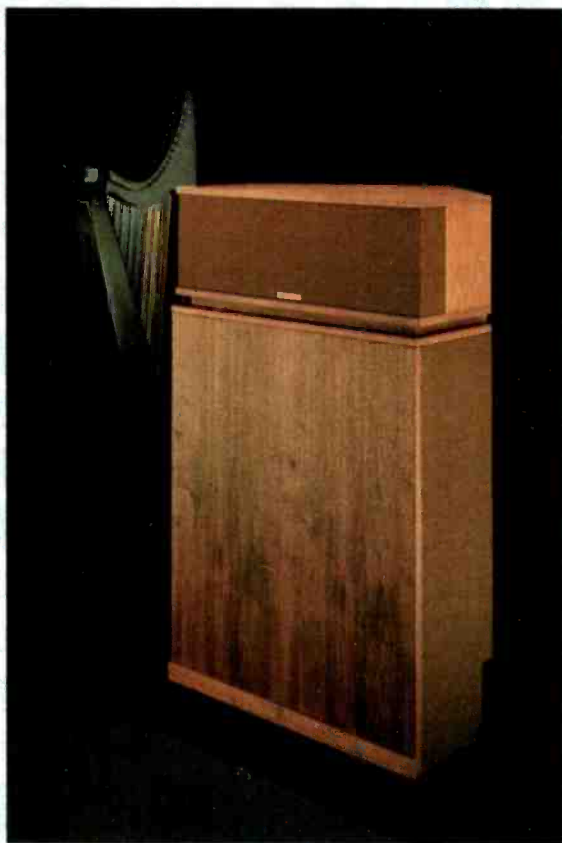
ROUGHLY thirty years ago American manufacturers began to lay the groundwork for what has become a fascinating field of advanced technology: high fidelity. From the startling AR-1 loudspeaker, introduced circa 1954, to the current home theater surround system from Shure Brothers, America's audio manufacturers have devised the methods, broken the rules, and set the pace for bringing superior sound reproduction into our listening rooms.

Along the way we have seen truly comical blunders, such as turntables for automobiles, and expressions of pure genius, like Dolby Pro Logic surround. In practically every crucial phase of audio's evolution, however, American know-how has been involved. As the photos on these pages prove, we have a rich history of classic stereo products from the past and present.

But the world doesn't stand still, and recent shifts in the global economy have left their mark on American audio. Audio manufacturing in the United States has taken a back seat to the massive production facilities found in the Far East. And major product introductions such as the compact disc have come from the labs of European and Japanese engineers. As a result, many American audio companies have had to change the way they do business. Big manufacturing quotas have been discarded in favor of building a smaller number of higher-quality products. In fact, the ingenuity displayed in the reorganization of our production facilities has prompted foreign manufacturers to set up shop over here. And foreign companies working on breakthroughs such as high-definition TV are opening U.S. research centers and tapping the brains of American engineers.

When you consider what these minds have accomplished already, it becomes clear that the United States will always be able to compete in the audio market. From the classic design of the Klipschorn speaker to the graceful economy of a PS Audio preamplifier, American stereo products will always stand tall on the world stage.

by Michael Smolen



Klipsch and Associates have been producing the Klipschorn loudspeaker in tiny Hope, Arkansas, since 1943. Designed for corner placement, the system incorporates Paul Klipsch's classic folded-horn midrange driver and tweeter along with a 15-inch woofer. The Klipschorn is still a highly desired speaker among consumers and audio professionals.





Nelson Pass formed the Threshold Corporation in Auburn, California, in 1974. Today, Threshold products such as the FET Ten/II with its cascading MOSFET gain stages are at the leading edge of modular preamplifier design.

★

Incorporating the design ideas of the late Lincoln Walsh, Ohm's limited-edition Walsh 5 speaker is made in Brooklyn, New York. It is 43 inches high and is rated for a frequency response of 25 to 25,000 Hz, a sensitivity of 88 dB, and 600 watts power handling.

★



The Premier Seven preamplifier is literally Conrad-Johnson's premier product. It features an all-vacuum-tube design using twelve triodes in a zero-feedback configuration and achieves absolute channel separation by using two completely separate mono preamp stages with separate power supplies.

★



A mainstay on the speaker front is the Bose 901, now in its sixth generation. The Model 901 uses the direct/reflecting design of M.I.T. Professor Amar Bose, and it's made at his company's impressive facilities on top of The Mountain in Framingham, Massachusetts.

★





Infinity Systems of Chatsworth, California, is world renowned for its \$50,000 Infinity Reference System Series V speakers. The four-piece IRS Beta, half of which is shown at left, incorporates many of the same design features and sells for \$10,500.

★



The Design Acoustics PS.3 Micro Monitor is a three-piece system with small satellite speakers using Point Source technology to achieve pinpoint imaging and a slot-loaded woofer that can be placed anywhere in the room that's convenient. Price: \$599 a set.

★

Designed and manufacturer in Chatsworth, California, Sumo's 200-watt Andromeda II power amplifier uses no current-limiting circuitry that can constrict music reproduction. The totally balanced design's overall negative feedback of only 10 dB attests to its inherent stability and low distortion.

★



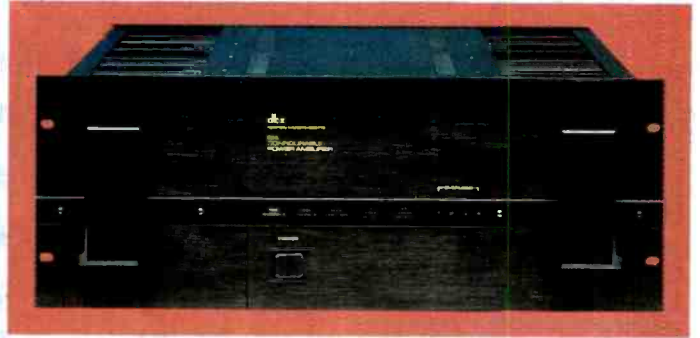
Henry Kloss was a founder of such famous companies as Acoustic Research, KLH, and Advent. His new Boston-based company, Cambridge SoundWorks, makes the Ensemble speaker system, which has two satellites and a pair of bass modules.

★





The BX1 power amplifier from dbx in Newton, Massachusetts, features a high-current design that can be switched by the user for two-, three-, or four-channel operation. In its two-channel stereo mode, the BX1 is rated to deliver a muscular 400 watts per channel into 8 ohms or 800 watts into 2 ohms.



Magnepan's new flagship speaker system, the MG-20, utilizes the latest in ribbon and planar-magnetic technologies. Made in White Bear Lake, Minnesota, it has a multiple-ribbon midrange/tweeter and a newly designed planar bass diaphragm.



Made in Hauppauge, New York, the Dahlquist DQ-20, successor to the popular DQ-10, features a phased-array design intended to avoid two basic kinds of speaker inaccuracy: time-delay distortion and diffraction effects.



Martin-Logan's Statement, a hybrid four-piece loudspeaker system, uses two 3 x 5-foot transparent, curvilinear electrostatic transducers for frequencies above 120 Hz and two 7-foot-tall Line-Source subwoofers for bass extension below 100 Hz.



The Koss company has been associated with high-quality headphones for decades. Made in Milwaukee, Wisconsin, the Studio Pro/450 at left uses neodymium magnets and hybrid dual-element drivers for increased bass.





The Model 505 from Altec Lansing in Milford, Pennsylvania, is a three-way speaker with a 10-inch carbon-fiber woofer, a 3½-inch carbon-fiber midrange, and a 1-inch laminated polyimide-and-titanium tweeter with ferrofluid cooling.



Roy Allison's IC20 Image Control speaker systems are unique in that they can be adjusted with an infrared remote control to project a broader or narrower stereo image to conform with the spatial properties of the original recording.



Epicure's Model 100 was once the best-selling speaker in the world. The twenty-year-old company in Newburyport, Massachusetts, now heads its line with the Model 1, a tower system that uses an outboard Speaker Placement Equalizer module to control the critical bass and lower-midrange regions.



Boston Acoustics of Peabody, Massachusetts, claims that you no longer have to sacrifice bass quality for small size. The PowerVent bass module in its three-piece Subsat Six combining a sealed acoustic-suspension chamber with a vented chamber.





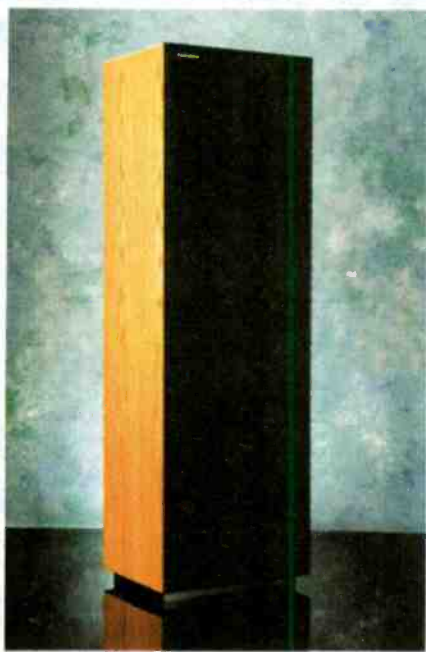
At the top of the line from Audio Control, based in Mountlake Terrace, Washington, is the C-101 equalizer/analyzer, a ten-band model with a built-in pink-noise generator and laboratory-grade measurement microphone.



Snell Acoustics of Haverhill, Massachusetts, was founded by the late Peter Snell in 1976. The Snell Type C/II features crossover values adjusted to match the particular drivers in each speaker, a zero-diffraction grille, and a rear-firing ultra-high-frequency driver.



The PS Audio Model 4.6 preamplifier, made in San Luis Obispo, California, has an unusual "straightwire" mode in which its line amplifier is bypassed for high-level sources. No active circuits come between the source and the output, so virtually no distortion or noise is added.



The SRS-1.2TL is the new flagship of Polk Audio's Stereo Dimension Array line, made in Baltimore, Maryland. It uses four of Polk's new SL3000 dome tweeters, formed from a trilaminate of polyamide, aluminum, and stainless steel.





Designed to provide excellent sound with a limited footprint, the Advent Prodigy Tower requires less than a square foot of floor space. Made in Schiller Park, Illinois, the speaker has an 8-inch long-throw woofer and a 3/4-inch polyamide soft-dome tweeter.



One of the current leaders in vacuum-tube amplifier technology is Audio Research in Minneapolis. Its Classic 150 uses an all-FET input stage and eight No. 6550 output tubes operating in triode configuration. The 150-watt mono hybrid amplifier sells for \$4,995.



McIntosh products, made in Binghamton, New York, may be the most highly coveted components in all of hi-fi. The MC 754 is a 100-watt stereo power amplifier that can be bridged into mono for 200 watts into 8 ohms.

The new Pro-Power Ten amplifier from Soundcraftsmen of Santa Ana, California, can be switched for two-, three-, or four-channel operation, making it ideal for use with surround-sound, subwoofer/satellite, and bi-amplified or tri-amplified systems. It delivers 600 watts per channel in stereo.



This year Shure Brothers of Evanston, Illinois, is celebrating the twenty-fifth anniversary of its first V15 cartridge. The V15 series is named for its 15-degree vertical tracking angle.

THE MAKING OF AN AMERICAN SPEAKER

The successor to JBL's classic L100 loudspeaker upholds a tradition of craftsmanship and innovative engineering.

BY IAN G. MASTERS

WHY James B. Martini changed his last name to Lansing when he moved to California in the mid-1920's is obscure, but in doing so he created a name that for many people symbolizes American audio, one that is still borne by the two companies he was associated with during his short life, Altec Lansing and JBL.

Although Lansing's first products, domestic radio speakers, were forerunners of today's consumer audio products, he made his reputation in the field of professional audio. At a time when the major challenge was to produce sufficient speaker output to fill a movie theater using only the low-powered amplifiers then available, Lansing turned his talents to the development of high-efficiency, flat-wire voice coils and vented low-frequency horn transducers (the landmark Altec "Voice of the Theatre" speaker system was one project on which he worked). Early audiophiles who could afford them bought these speakers for home use, as there was nothing else on the market that would satisfy their demands for good music reproduction.

Forty years after Jim Lansing's death, the James B. Lansing Co.—its name long since shortened to JBL—remains true to his roots in professional sound; it is still a leading supplier of sound-reinforcement speakers and studio monitors. But JBL, now a division of Harman International, has also used its pro expertise to produce high-quality speakers for the home market since its 1954 in-

troduction of the Hartsfield corner-horn model, which JBL says still holds the record for being its "most-requested" speaker ever.

In 1977 Dr. Sidney Harman, who had owned JBL since 1969, sold it and several other audio companies he had acquired or founded, including Harman Kardon, to become Undersecretary of Commerce in President Carter's administration, but three years later, a private citizen again, he began to reacquire some of his former companies—notably JBL and Harman Kardon. In the process, he also picked up Infinity, Epicure, Pyle, and Concord along with two professional audio companies, Urei and Soundcraft, a leading European transducer manufacturer, Audax of France, and a Danish enclosure maker, Lydig.

As Sidney Harman sees it, manufacturing speakers from the ground up is, and always has been, a key element in the success of JBL. "If you are genuinely interested in putting out a product that is fundamentally better, you have to make it yourself," he told us. "Here, we are specifically devoted to music; the mix of technology and love of music is what makes the audio business special."

Engineer John Eargle, who has been associated with JBL since 1977, agrees.

"The founders of the hi-fi business in this country—Rucy Bozak, Paul Klipsch, Frank McIntosh, Saul Marantz, Sid Harman [and Edgar Villchur, and Henry Kluss, and Amar Bose, to name a few others]—



did it out of a love of music," he said. "If you're really an audio person you just can't do anything else; even if you can, you usually don't want to."

The Harman/JBL factory occupies 440,000 square feet of space (30,000 feet are devoted to a new Harman Electronics plant) in California's San Fernando Valley. The factory makes practically everything that goes into a JBL speaker, the major exceptions being crossover networks, woofer cones, and some elements used in lower-cost speakers (and all these components are subject to rigid quality-assurance tests when they are delivered to the factory). One result of that, according to Harman, is the possibility of establishing tighter tolerances for the components that go into a speaker. "The consumer gets something out of all this: The chances are very high that if he buys a pair of JBL speakers, the left one will perform exactly like the right, and both will perform identically to the ones he heard in the showroom."

For most of the past year, JBL designers and engineers have been working on an upgrade of one of the company's best-known speakers, the L100. The new version, the L100t3, is now reaching the market. Although it shares the name of a classic speaker and ultimately derives from the original, it is a new device.

Like many of the early JBL models, the original L100, introduced in 1969, was essentially a "studio monitor in walnut," as one marketing manager put it. It was decided that the new version would be based on the company's current three-way studio monitor, the Model 4412, using the same transducers—including a titanium-dome tweeter, hence the "t" in the model name. But the crossover would be reworked with "audiophile subtlety" to give the system a new overall sound, a process that JBL calls "voicing." Moreover, instead of the Model 4412's bookshelf configuration, the L100t3 would be a floor-

standing system using a new type of enclosure called a "six-sided lock miter." As is usual in product development, the details were worked out in extended negotiations between design, production, and marketing personnel.

The main design challenge was to bring the selected transducers and enclosure together in a speaker that would be true to its origins and yet as technologically sophisticated as possible. The first step was to test the individual drivers in the development lab's anechoic chamber—or, in the case of the woofer, on the factory roof—to find out exactly what each one did.

Next, a prototype of the enclosure was constructed in the lab. The drivers were mounted in it and measured again to determine how they would interact with the cabinet. Finally, the development engineer went to work designing a crossover that would bring all these elements together in a good speaker system.

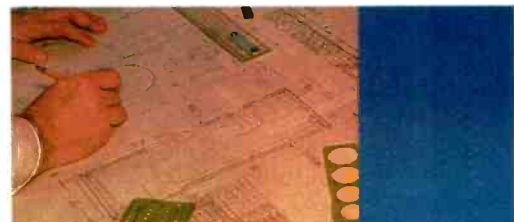
Since the L100t3 was to use existing transducers, it was a straightforward job to prepare for production—no retooling was required. Like all JBL products, it uses high-efficiency, edge-wound voice coils and cast-aluminum woofer baskets. Because it is a high-end model, however, much of the assembly of these components is done by hand.

By the time a speaker actually reaches production, the hardest work has been done. In the case of the new version of the venerable L100, the process of determining what kind of speaker was wanted, examining the technological and production options, consulting with the relevant staff, testing the components, building the prototype, retesting the assembled system, designing the crossover, listening to the result, making adjustments, and, finally, gearing up for production took some 900 man-hours, including some for wrong turns along the way.

We were able to see how the design of the L100t3 becomes a reality during a special factory tour. □



PHOTOGRAPHS BY ROCKY THIES



1

1. Although the JBL L100t3 is derived from an existing professional monitor, its "six-sided lock miter" enclosure is all new. It began as a series of detailed drawings produced by the JBL engineering department.

2. Before incorporating drivers in a speaker system, a designer must know the specific characteristics of each one. The L100t3's tweeter and midrange were tested in the engineering lab's anechoic chamber, but it was too small to represent frequencies below about 500 Hz with any accuracy. In order to measure the free-field response of the L100t3's woofer, the development engineer resorted to the world's largest anechoic chamber, the great outdoors, using a special assembly on the roof of the JBL plant.

3. An initial battery of measurements was performed on the L100t3 prototype in the laboratory's anechoic chamber. Fine-tuning of the crossover network and of the relationship between drivers and enclosure—a process called "voicing"—took place at this stage. To help keep control of all aspects of its products, JBL designs and builds its own test and measurement instruments.

4. Ultimately it is how a speaker sounds that matters. Every new JBL model undergoes extensive listening tests by both the engineering and marketing staff. Only when both are satisfied with the result can the speaker proceed to manufacturing. An early version of the L100t3 failed at this stage because its sound differed too radically from that of its predecessor, the classic L100.

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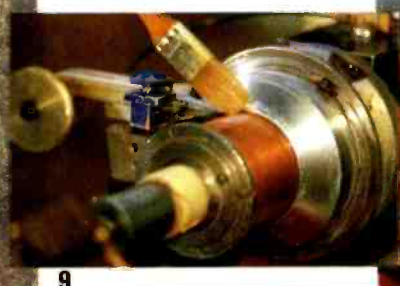
5-6. Despite a general opinion that titanium is an "unworkable" metal, JBL pioneered its use in tweeter diaphragms because it combines lightness and stiffness. A diaphragm-forming machine uses a proprietary high-pressure process to stamp out tweeter domes for the L100t3, each one only a thousandth of an inch thick. The diamond pattern in the dome's surround increases its flexibility.

7. To insure uniformity of response in L100t3 speakers, JBL uses an automated assembly to attach the tweeter diaphragm to the voice coil. In the photo, a hand points to where the machine is inserting a high-temperature adhesive at the critical joint.

8-10. Woofer voice coils are wound in "sticks," to be cut into proper lengths further along in the production process.



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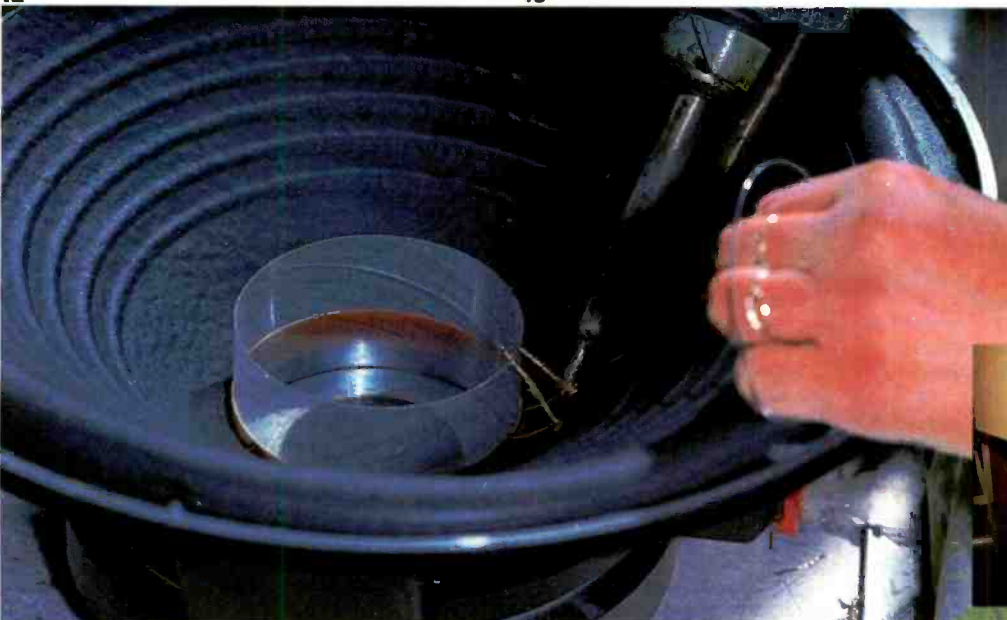
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11-13. The cast frames for the L10013's woofers are electrostatically coated with an epoxy powder, which is then baked on, rather than being painted conventionally. One benefit is a pollution-free working environment.

14. Final assembly of the L10013's woofer is performed on a turntable that spins the basket to allow even application of the glue that will hold the cone-coil combination in place.



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15. Every transducer—in fact, every voice coil—is individually tested against an engineering prototype in one of the many quality-assurance stations in the JBL factory.

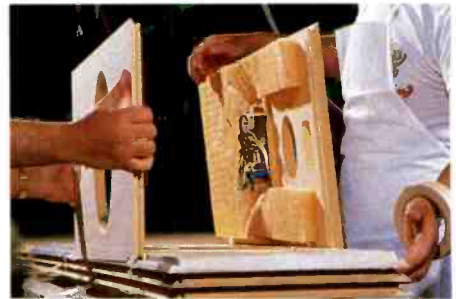


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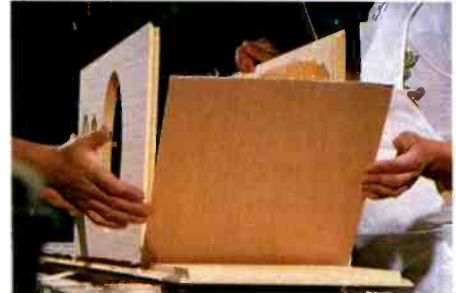
16-21. Panels for the L100t3's enclosure are cut from veneered particle board in JBL's own wood mill. The side panels are cut in a single piece, and a saw makes V-shaped grooves through the board—but not the veneer—where the cabinet edges will fall. The crossover network is mounted and the pre-cut side piece is folded around the front and back panels to produce the finished enclosure. Tolerances are very tight to insure that the cabinet fits together with no air leaks.



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JBL IN JAPAN

BY
BRYAN HARRELL

TOKYO—Though countless Americans think of Japan as the leader in audio equipment, many Japanese audiophiles have historically considered certain categories of American and European audio gear superior—namely, phono cartridges and loudspeakers. Local wisdom has it that the Japanese are good at mathematics and equations, making possible the production of efficient hardware, but are less adept at the subjective artistic judgments involved in transducer craftsmanship.

"When it comes to loudspeakers and cartridges, or entrance and exit devices, people in Japan, including the audiophile press, believe that foreign names are superior." I was told by Kohtarō Yasuda, the marketing director for JBL products in Japan.

The existence today of some excellent Japanese speakers and cartridges, and some rather poor Western counterparts, easily disproves this myth, though the fact that many Japanese still believe it makes for impressive foreign sales opportunities in a market more than half the size of the U.S. and larger than any European country.

Furthermore, imported loudspeakers are closely identified with their country

of origin. Strong distinctions are often, and unjustifiably, made between a "California" sound, an "East Coast" sound, a "British" sound, and so on. No doubt these attributes give foreign products a certain "spice of identity," though image-conscious Japanese may pay more attention to the "aura" of a product than to the product itself.

In any case, the aura surrounding the JBL name in Japan has been strong for years. Nobody really knows when the first JBL loudspeaker was sold here, but Sansui began distributing the line officially in 1969. Four years ago, distribution was taken over by the Tokyo branch of Harman International, known as Harman Asia. According to Yasuda, sales have



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22-23. The cabinet's veneer is polished and the drivers are mounted in openings on the main panels during final assembly of the speaker.

24. After completed L10013 speakers roll off the assembly line, they are packaged for shipment to dealers.

increased in that time despite aggressive inroads made by other speaker makers in Japan. Bose, especially, has built a large presence here in the last decade. "Each [manufacturer] has its own niche," Yasuda said, "though there must be some overlap, which is good for competition."

"The JBL name is prestigious [in Japan]," Yasuda continued. "Perception has a high value, and Harman Asia tries to reinforce this image." A large number of jazz coffee houses and live-music spots bear this out: JBL speakers are quite common and have a loyal following.

JBL speakers receive good press here, and they have won several Grand Prix

awards. The JBL Everest DD55000 speaker was one of three loudspeakers (along with the McIntosh XRT-18 and the Diatone DS-1000) to win Stereo Sound's 1985 Golden Sound Award.

The JBL name can also be seen at every important trade show and industry event in Japan. Last October, while JBL was represented at both the Japan Audio Fair and the Imported Audio Show (the only foreign name to be present at both events), Harman Asia also highlighted JBL products at its own three-day audio fair.

JBL sales in Japan are approximately one-third for professional use and two-thirds to consumers. That's a high ratio of pro-use sales, though Yasuda pointed

out that it's often hard to determine how a product will be used once it is sold. "We're sure that the end users of some JBL professional products are actually ordinary consumers," he said.

Harman Asia is involved in some JBL product planning, although all the speakers are made in California. "The Japanese prefer certain characteristics," Yasuda said, "like very punchy bass and sharp, quick transients." Interestingly, the prize-winning Everest speakers, which retail in Japan for 2.7 million yen (about \$22,500) a pair, were developed in conjunction with Harman Asia and sell predominantly in the Asian market. A few of those ought to do something for the trade deficit.

SYSTEMS

A live-end/dead-end garage

by Rebecca Day

IF you go to Wayne Mackey's Manhattan Beach, California, home just to visit, you're likely to be directed to the living room; there, his "graveyard" stereo system provides background music. If you go to do some serious listening, he will lead you back to the audio room he built himself: a 17 x 18-foot chamber that takes up half of a four-car garage.

Look closely, and you'll see that the walls are slightly off the vertical, by 2 or 3 degrees. That's okay—they're supposed to be. But Mackey had a tough sell convincing the building inspector that he constructed the room that way to prevent standing waves.

Clearly, acoustics are the primary concern in this room. Mackey wanted everything to be just right for his Polk Audio Stereo

Dimensional Array SRS 1.1 speaker systems, so he covered the ceiling and a good portion of the walls with 1-inch-thick cloth-over-fiberglass ceiling panels. At the dead end of the room, where the speakers are, he stuffed 3½ inches of raw fiberglass behind the wall panels to absorb more sound and "keep the low frequencies from getting out of the room." At the live end, he used ½-inch soundboard made of coconut husks and then covered it with drywall. He also used leftover fiberglass to pad two 4 x 6-foot panels—again to keep lows from escaping. To hold equipment, he built ¾-inch shelves recessed into the wall so that the components wouldn't interfere with the SDA speakers' crosstalk-cancellation effect.

There's so much sound absorption in the room that



Mackey had to biamp the speakers and supplement his 110-watt-per-channel Hafler DH 220 power amplifier with a 200-watt-per-channel Onkyo M-508. The Hafler drives the high frequencies, and the Onkyo powers the bass. A McIntosh C-27 preamplifier is connected to the fixed input of the Onkyo amp and to the B input of a Niles A/B switch box, which in turn runs to



the Hafler. Straightwire LSI cables connect the switch box to the variable output of a Denon DCD-3300 CD player, which bypasses the preamp. The Denon's fixed output connects to the variable input of the Onkyo amp. To play CD's, Mackey turns the switch box to A; for preamp/VCR operation, he switches it to B. A Mitsubishi HS-400 VHS Hi-Fi VCR, a Sony SL-HF360 SuperBeta

Hi-Fi VCR, a Sony Profeel tuner, and a Sony Profeel 25-inch monitor make up the video picture. A pair of Sony speakers connected directly to the monitor provide video sound for nonmusical programs.

Everything in the room is where it is for a reason. The sofa is carefully placed for optimum listening according to a Polk formula based on the room's

dimensions—11 feet from the speakers, which are precisely 6 feet apart.

To eliminate interference from the switching noise of the fluorescent lights, Mackey positioned them far enough back that they're not a problem. He also installed a small incandescent light in the front, which he says provides just enough light to see the equipment. □



THE EXPLORERS

Movers and shakers in new audio technology



THEY toil in laboratories and sound rooms, testing and re-testing, coming up with new ideas, re-examining some old ones, and always listening. Some, like Ray Dolby, attain a certain celebrity, but most, like Tommy Freadman or Larry Schotz, are well known, and revered, only within the audio industry. They are people who have altered the way we listen to music in our homes, but their names are not usually on product labels. That's of little concern to most of them: Generally, the top audio engineers don't hunger for fame and glory. They get their kicks from breaking sound barriers.

The fraternity of explorers on the cutting edge of audio technology is not large, really. Among the thousands of audio engineers at work today, perhaps only a hundred—maybe fewer—could be considered truly influential in terms of guiding technology in new directions. The members of this elite class are not mere tinkerers—clearly, they are movers and shakers.

And if you're trying to get a handle on what lies ahead in the rapidly changing world of audio, who better to ask than the best and the brightest audio engineers?

Speakers

In no other component category will you find as many varied opinions as in the realm of speakers. From an engineer's standpoint, there's plenty of room for creativity

and individuality in designing speakers, and that's not likely to change in the future. "Designing speakers will become even more challenging in the years ahead," according to Tommy Freadman, who heads the research and development program at Altec Lansing.

Freadman will, no doubt, rise to the challenge. A musician turned engineer, he worked in Israeli recording studios and engineered sound at concert performances around the world before getting into product engineering and design. Freadman's patented electronic resonance-control circuit is still in use today, though what he's best known for now is the line of award-winning speakers that have come out of the Altec Lansing labs during the last five years.

Freadman predicts that speaker makers will rely on "more and more controlled circuitry to correct and compensate for speaker performance. There is a limitation to what you can do mechanically. The more intelligent way is to control the speaker with the amplifier or some kind of feedback circuit."

What particularly interests the forty-two-year-old designer, however, is the potential for experimentation with new materials. "It's happening already," he said, "with people moving from paper cones to laminates to polypropylene, in dif-

ferent kinds of mixtures, involving carbon or fiberglass—there are really unlimited ways of mixing materials now to achieve different sound results, and [the use of such mixtures] will increase."

Such opportunities will certainly not go unnoticed by the likes of Moray Campbell and Paul Burton, the brains behind the hot new Sumo Aria speakers. Five years ago, Campbell and Burton met accidentally and discovered they both had an interest in planar speaker design. Working with limited resources and test gear—"Our test equipment consisted of microphones strapped to the sides of our heads," Campbell recalled—the two developed a prototype of what would eventually be the Aria, a full-range panel speaker that generates sound virtually like a point source by precisely applying drive to the diaphragm's center.

While Campbell and Burton are now working to create scaled-down versions of the Aria, they've got their eyes on the road ahead as well and see some interesting possibilities. "I believe the box speaker will gradually fade away in the next ten to twenty years," said Burton. "And I think we're just around the corner from planar units that will effectively replace cone drivers—and be physically slimmer than what we have now. The time has come for panels, and I think we're going to see a real movement toward less expensive, mid-market panel speakers in particular. I think perhaps a



Sony's STR-D2010 is the first receiver to use digital signal processing for every key control function.



Larry Schotz designed the front-end circuits of the highly regarded Proton 440 tuner.

The polydirectional Obelisk speaker is the brainchild of engineer Richard Shahinian.



Recording engineer Keith Johnson's ideas are embodied in the Precise Monitor 7 speaker.

dozen more planar-speaker companies will appear, and then you'll start seeing some really exciting designs."

Campbell and Burton also foresee a greater application of rare-earth magnets as opposed to ceramic, and possibly also some plastiform magnets. "People are going to realize that a small, compact magnet structure is an advantage in producing a wide-bandwidth planar transducer—and I think the price of that technology is going to come down as usage increases," Campbell said.

Keith Johnson, who designs speakers for Precise Acoustic Laboratories, agrees that usage of new materials "will be a major thrust," though he feels it will be particularly important with regard to enclosure design. "The days of serious speakers in a wooden box are almost gone," he said. "We'll see more complex bracing and inner structures as well as exotic laminated materials to control cabinet resonances."

JOHNSON knows his resonances. He's a veteran of the recording studio (he still works in that field today), and his experience in designing equipment goes beyond the Precise speaker line. He also engineered the Spectral DMA-50 professional amplifier as well as Spectral's new SDR-1000 compact disc player, which has the unique feature of being able to *anticipate* and then compensate for certain digital recording errors.

"I think the industry is now in more of a listening phase than a technological phase on speakers," Johnson told me. "People are starting to work with enclosures, standing waves on drivers, the way that materials behave, the way that crossovers and drivers interact—in a sense, there's a back-to-basics and back-to-physics movement, and there's a little less techno-flash. I think that movement will continue as speaker makers concentrate on getting things to sound natural and realistic."

The next breakthrough? Johnson thinks it could come in the form of a self-adjusting system to control the bottom end better in a given listening environment. Such a system, he postulates, might involve placing low-cost microphones throughout the room; the user would play back a compact disc recorded with instructions and test tones designed to help with the setup and testing proc-



ess, and the system would analyze and then adjust its own output.

Like Johnson, Richard Shahinian is bullish on the back-to-basics approach. In fact, Shahinian, the whiz behind Obelisk speakers, becomes downright nostalgic when he looks ahead. "I think that a lot in the future is going to depend on how far back we look," he said. "There was an awful lot of work done in the late Thirties and early Forties that defined the nature of the loudspeaker, and those ideas will rise again—using passive radiators for bass tuning, for example. I think what's needed is not necessarily radical new means of producing sound, but rather some radical applications of old technology."

A musician who became a hi-fi salesman, Shahinian's interest in speakers led him to study and buy kits. His first design was manufactured by Precision Laboratories in 1962, after which Shahinian moved on to Harman Kardon, where he helped open the company's loudspeaker acoustic lab and also helped engineer the HK-40 speaker. In 1976 he formed his own company, where he introduced the Obelisk polydirectional speakers.

These days, Shahinian is thinking modular, and he predicts that the industry will eventually come around to his philosophy. "A unitized modular approach to speakers, allowing customers to take a building-block approach when they buy speakers—that's the way we're headed," he said. "We already have a partially modular program in our system, with different subwoofers and other modules that can be added on. It's a cost-effective way to build a state-of-the-art loudspeaker with very low distortion."

Shahinian also envisions "new approaches to enclosures, using materials such as plastic resins or concrete and resins together—materials that have virtue for acoustical purposes. The box speaker is dead," he declared, echoing pronouncements by Johnson and Burton.

Amplifiers

"More" is the operative word in discussing the future of amplifiers.

People will need more of them, and they'll want more functions and features in them. "I expect amplifiers to have more channels for surround-sound and remote-control applications," said Sidney Corderman of McIntosh. "People want independent levels in different rooms and independent program sources for those rooms, and that dictates extra amplifiers for those rooms."

Corderman's prognostications should not be taken lightly. A thirty-eight-year veteran of the engineering department at McIntosh, he supervises all engineering in the labs and personally designed all of the company's vacuum-tube amps and preamps.

"In general, I see amps continuing to move in the direction of more power, lower distortion, and wider bandwidths," Corderman said. "I think there will be more amps with balanced inputs, which will be particularly important with remote-control systems to get rid of ground loops as the systems become more extensive."

Corderman believes digital technology's potential in the amplifier category is limited. "I think many companies are looking at applying digital techniques, particularly in the preamp where there's equalization and surround-sound [decoding] to be done—those things can be done nicely in the digital domain, but the economics of it aren't favorable now, and the know-how has to be developed. But I don't see digital power amps. The radiation requirements down the speaker lines limit what you can do."

LIKE Corderman, Lew Johnson of Conrad-Johnson sees "evolutionary, not revolutionary" developments in amplifier technology. "There will be progress and refinements relating to issues that have been around—sonic effects of negative feedback, effects of increasing open-loop bandwidth, effects of power-supply interactions," Johnson said. "Some of the biggest gains in recent years have come because of new materials, and there may be some new materials still to come that will allow us to make better resistors, better capacitors."

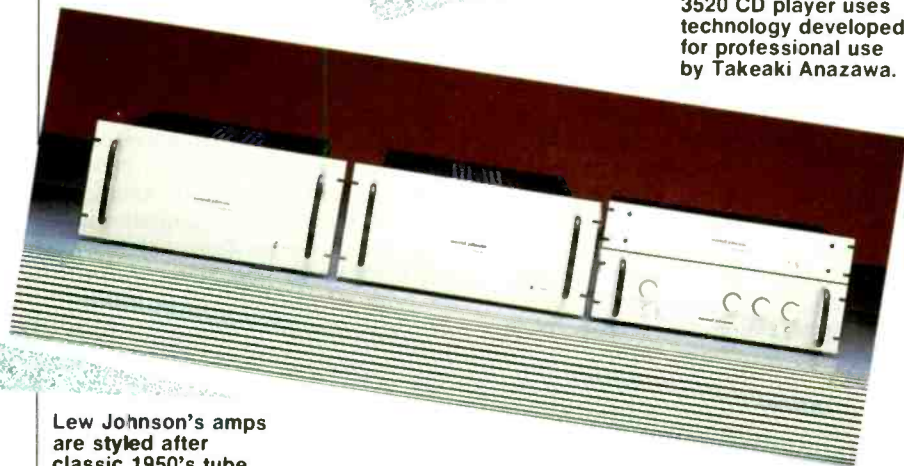
An economist who took up audio as a hobby, Johnson has emerged as one of the most respected makers of amplifiers in the business. He teamed up with partner William Conrad in 1976 because the two



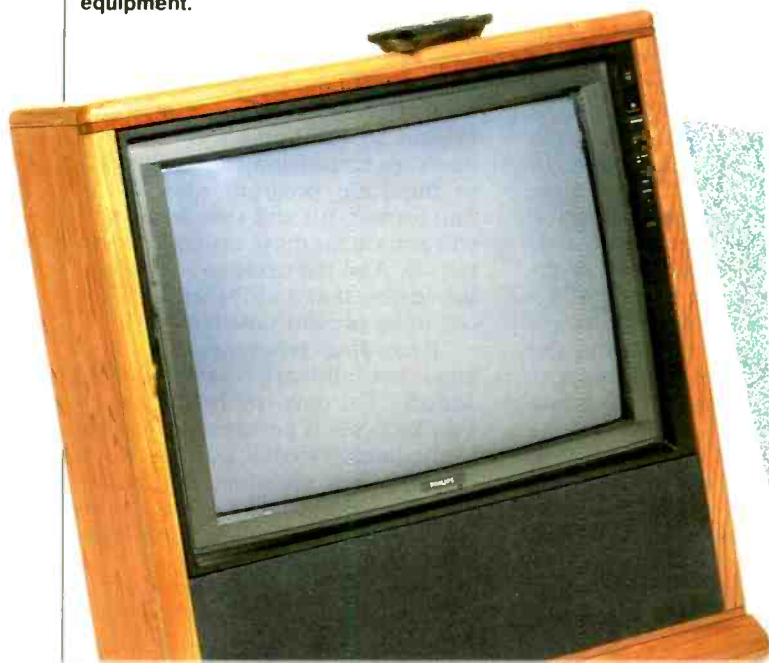
Speaker designer John Eargle now spends much of his time as recording engineer for Delos Records.



Denon's 20-bit Model 3520 CD player uses technology developed for professional use by Takeaki Anazawa.



Lew Johnson's amps are styled after classic 1950's tube equipment.



The Philips improved-definition TV set, a big step toward high-definition TV, was developed in the U.S.

shared a common goal: to build a modern, state-of-the-art preamplifier styled after the classic tube amplifiers of the Fifties. Conrad-Johnson achieved that with the PV1 preamp, which was followed by the equally successful MV75 power amp and, later, by the company's renowned Premiere line of amps.

Johnson expects audio/video systems and surround-sound setups to become increasingly prevalent, which will call for control units with switching facilities for video signals as well as audio signals. Meanwhile, the effect on power amps will be that more of them will be needed for surround sound, though there may be a trend toward smaller amps because of space limitations.

"The thing that is perhaps hardest to gauge," Lew Johnson went on to say, "is the effects of the almost-certain coming of the recordable optical disc. Regardless of what the recording industry thinks, digital recording can't be far away. My guess is, it won't be digital audio tape that is the medium; it's likely to be recordable discs. The computer industry is almost going to force the development of the recordable optical disc, independent of audio. But once it's there, the audio aspects can be added on quickly. That will have unpredictable consequences for amps and preamps. Future preamps may include digital processing circuitry, at least as an option."

The Digital Domain

Takeaki Anazawa of Denon agrees that the recordable compact disc is on the horizon, though he adds a word of caution: "Copyright protection," he said, "is the key to making it happen."

Anazawa has been at the center of developing digital audio technology from the start. As a recording engineer in Japan, nearly twenty years ago he helped develop one of the first professional digital audio recorders. By 1972, he was using the equipment for the first digital recording sessions in the world. Anazawa continued to develop digital equipment—mostly recording consoles and editing equipment—for professional use. As far back as ten years ago, he was involved in the development of 18-bit analog-to-digital and digital-to-analog converters for professional recording use, technology that was later used in Denon's 20-bit converters for consumer applications. Today Ana-

zawa is involved in design and development of all types of CD projects, including CD-ROM (data storage), CD-I (interactive CD's), and CD-G (CD's with graphics).

"Data-compression techniques will become much more important in years to come," Anazawa predicted, "and high-performance digital signal processing (DSP) will be the key to improving data compression." Anazawa sees a bright and versatile future for DSP. "On the consumer side, digital preamplifiers will become more popular, and these preamps will rely on very high-speed digital signal processors," he said. And, he added, DSP will be instrumental in improving professional sound-recording techniques in the next few years.

Like Lew Johnson, Anazawa noted that the recordable CD is already in great demand in the computer industry, which could spur the development of recordable CD's for audio. "We're now using a CD write-once system, and it works very well for us," he said. "I think within a few years write-once CD's will be available, assuming copyright problems are dealt with. An erasable CD will be more difficult—erasing does not lend itself to the CD format."

ANAZAWA'S affection for DSP seems mild compared with the feelings of Sony's Ken Haneishi. A thirty-year veteran of the company, Haneishi now serves as director of product planning and coordinates the design team responsible for the coming generation of Sony components with DSP capabilities.

Already, Haneishi maintains, DSP is having a major impact on hi-fi. "Until now the term DSP has been used to describe various types of surround-sound and digital delay devices," he said, but he thinks that current DSP receivers—including Sony's own STR-D2010—have "given DSP an entirely new meaning, since all key parameters that affect music reproduction can be processed digitally." The best of DSP is yet to come, Haneishi predicted: "I believe that DSP will revolutionize the way we listen to music in the future, not just in the home, but in all music-oriented environments."

Radio Reception

On the matter of tuning in radio signals, you'd be hard-pressed to find an expert with better credentials than Larry Schotz. As the foun-



der of Draco Labs in the mid-Seventies, Schotz, now thirty-nine, designed Sherwood's Micro CPU 100, the first digital tuner on the market, and he followed that act by designing highly regarded tuner lines for both Proton and Crown. Later, after founding LS Research, he designed the Schotz FM noise-reduction circuitry that's still in use today in a number of products.

Looking ahead, Schotz anticipates improvements in the ability of tuners to handle front-end overload. He also expects that "phenomenal signal-to-noise ratios in FM tuners" are just around the bend. "I'm talking about something in the area of 100 dB," he said. "The stations can't broadcast at that level yet, but I think they will soon—we're going to start seeing FM broadcasts being really close to digital audio in terms of quality.

"It would be nice if we could broadcast digital information directly, to be decoded in your tuner," Schotz mused, "but I don't know if that will happen, because the federal government may not want to make the existing broadcast format obsolete. Maybe it can be done in a sub-carrier format."

If broadcasting does change, Neal Terk will, no doubt, be the first to adjust his antenna. A onetime designer of record covers, Terk was "seduced by the antenna business" in 1985 when he formed Terk Technologies. By June 1988 Terk, working with independent engineers (including Larry Schotz), had developed the breakthrough Gamma Loop or "Pi" FM antenna. Unlike the 17-inch rod antennas on the market, which are indiscrete in terms of the bandwidths they tune in, the round, compact Gamma Loop, with its built-in signal-boosting amplifier, was designed to receive signals between 88 and 108.5 MHz only, thereby cutting down on out-of-band interference. Today the company is still struggling to meet demand for its red-hot Gamma Loop antennas.

"In the future," Terk said, "we will expand the use of Gamma Loop technologies into other products, both consumer and industrial. The

goal is to eliminate the dipole or the metal-rod antenna and reduce it to a printed circuit 5 inches in diameter—the applications are almost unlimited."

Terk is also working with TV antennas these days. "We could come out with a great indoor TV antenna right now," he said. "The only problem is, it would be 12 feet wide. We haven't yet made the breakthrough there that we had with Gamma Loop—that is, being able to capsule the technology. But we are making some headway in the area of well-designed amplifiers for cable systems as well as UHF and VHF."

TERK is also looking beyond antennas and focusing on what he predicts will become a very hot area in the future: wireless audio/video technology. "We're looking into ways in which you can expand entertainment systems throughout the home by taking advantage of existing wiring in the walls."

John Eargle, a long-time designer for JBL, knows just what Terk means. "There's still the problem of running wires around rooms, and I hope someone will come up with a way to plug speakers into a socket on the wall, with the program information coming via an infrared or RF link going back to the AC wiring."

With one foot in consumer audio and one in the professional recording field, Eargle has made his mark in both areas. He helped develop JBL's Bi-Radial professional studio monitors, and he designed the L-250 (now the 250 Ti), the same company's flagship consumer loudspeaker. A veteran also of RCA and Mercury Records, Eargle today still spends much of his time in recording studios, mostly working for the Delos label.

"Digital audio tape is not going to be significant as a carrier of information to the home," he said. "I don't see record companies flocking to duplicate program material in that format. It's still very costly and will remain far more expensive than the CD. And the CD is so well established now that nothing will shake it out of its present position.

"Recording equipment is in a good evolutionary cycle," Eargle added. "The only real breakthrough I'd like to see is perhaps an increase in the present digital standards of a 44.1-kilohertz sampling rate and 16-bit conversion to 48-kilohertz sampling or 96 kilohertz—just as a mat-



Moray Campbell and Paul Burton worked five years to create the Sumo Aria, a full-range planar speaker.

ter of principle, I'd like to see a higher sampling rate."

The Big Picture

Even with all of these expected improvements in audio technology, the biggest breakthrough in consumer electronics during the next few years will take place on the television screen as the much-talked-about high-definition television becomes a reality. When will HDTV get here, and what will it look like? We asked Dr. Larry French of Philips.

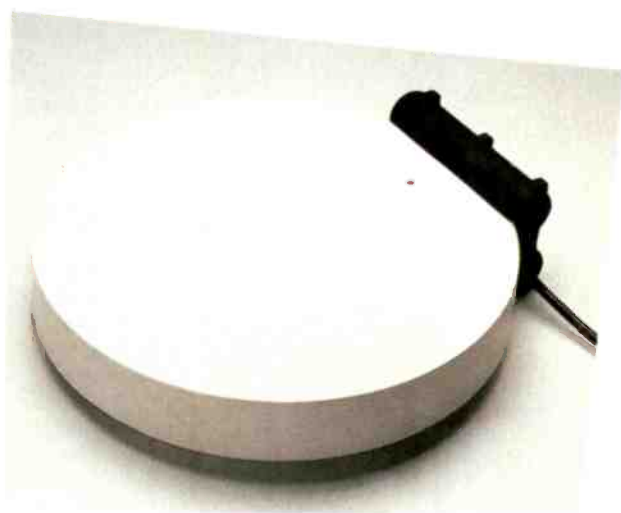
After spending twenty-two years in research and development at RCA, French was tapped by Philips to head the company's American HDTV program, a U.S.-based research effort to develop an HDTV system for North America. He has presided over the company's rapid progress in the new field: Philips was among the first to demonstrate HDTV hardware in this country, and the company is expected to demonstrate a terrestrial HDTV broadcast signal sometime this year.

"We're going to see a steady progression of the viewing experience," French said. "Step one is improved-definition TV (IDTV), which is now available and is already being refined. Further enhancements in the IDTV television set, and perhaps some enhancements in the broadcast signal itself, will result in what we're now calling IDTV-plus.

"In time, IDTV will lead us into HDTV, although before that can happen we'll need unified broadcast standards that can serve cable as well as satellite transmissions—it will have to be consistent throughout." According to French, Philips is "projecting that the FCC will accept a terrestrial broadcast standard in early 1991. If that's done, one could expect that within two more years HDTV service will be introduced. So we're looking at 1993, although that may be optimistic."

One thing is certain: When HDTV arrives—with its wide picture, dramatically improved texture, color, and resolution, and CD-quality audio—it will, as French says, "change the whole viewing experience."

The desire to change the home entertainment experience is what drives the explorers, the best and the brightest engineers. In the years to come, as you find new clarity and realism in your hi-fi sound and in your television picture, remember: It couldn't have happened without the guys in the lab coats. □



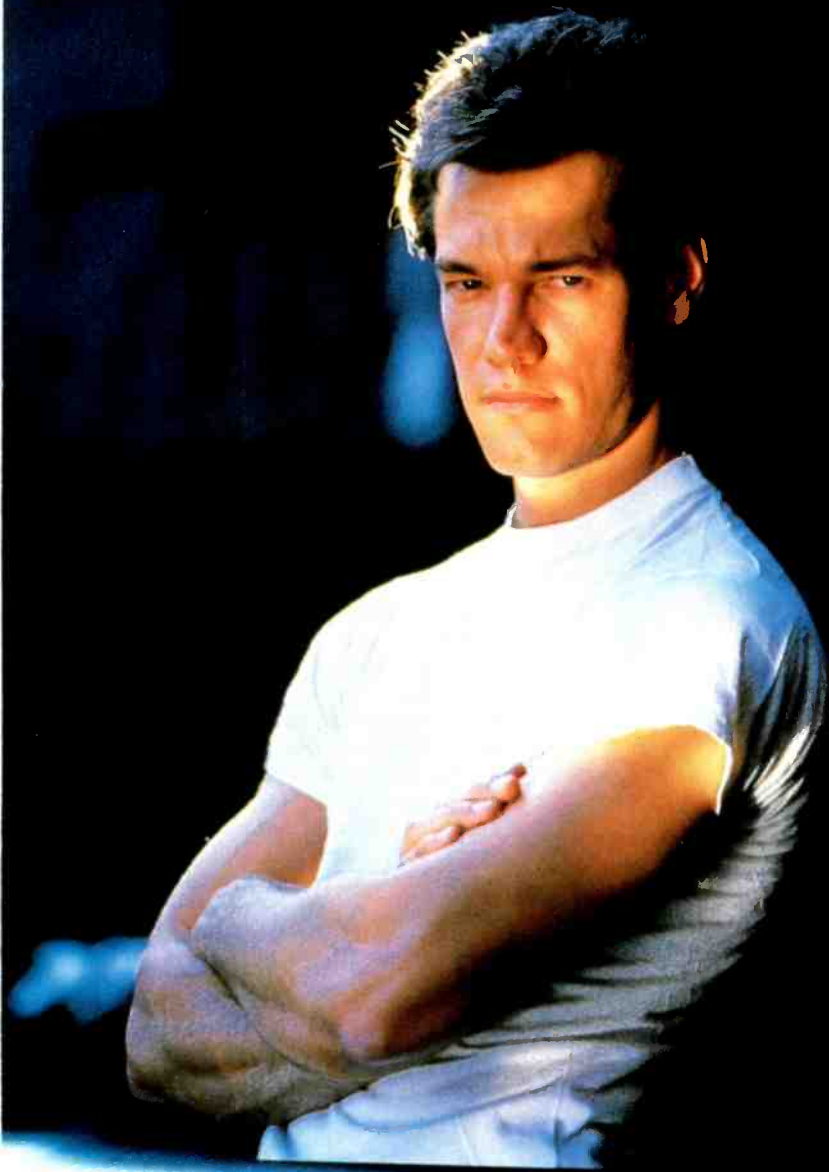
Neal Terk and Larry Schotz developed the Gamma Loop technology for Terk's powered Pi FM antenna.



Altec Lansing's Tommy Freadman designed the four-way Model 511, which can take up to four separate amp inputs.

RANDY TRAVIS

"I'm singing for everybody, no matter what kind of background they have or where they came from."



BY PETER REILLY

DDD that so many people continue to think the big-money music business is essentially about music. Not so in the case of the most successful singers. For them it's always been about time and place, personality, communication, and true performer-listener intimacy. The music they perform is filtered through all of these things and aimed at the mass-audience ear.

Enter the Platinum Kid, a.k.a. Randy Travis, who has just won his second Grammy. Since June 1986 his three albums—"Storms of Life," "Always and Forever," and "Old 8 x 10"—have "gone" (as music-biz types say) Double Platinum, Triple Platinum, and Platinum, respectively. His last European tour, culminating in a sold-out appearance at London's cavernous Royal Albert Hall, was a triumph. That seemed to surprise him.

"I didn't expect to have that huge an audience over there," he told me recently in New York. "They don't have specialized radio programming, so my records are just played along with a lot of other mainstream stuff. It was a scary feeling, walking out on that stage. And Mick Jagger came, and I sure didn't expect that!"

Another thing Travis doesn't seem to expect is the instant recognition that trails him wherever he goes. Even in down-and-dirty, celebrity-proof Manhattan, he's definitely a Somebody. People point, people stare, and a lot of them come right up and give the New York equivalent of "Howdy," which is "Yo, how you doin', Randy?"

He's a Somebody, but also obviously an Available Somebody, and the interest is genuinely friendly. He's an easy person to like, open, unpretentious, with a certain down-home shrewdness and humor that can surface unexpectedly. He's not a particular fan of city life, but he will admit that it can have its merits—such as the pasta with meat sauce at a small Italian restaurant he's discovered. Also, he's not precisely inconspicuous. He bears more than a passing resemblance to that lantern-jawed favorite of bygone Western TV shows, Chuck Connors, and his wardrobe would scare the hell out of the Brooks Brothers. He also seems deeply committed to gold. Large chunks of it blossom from his open shirt collar, and one of his fingers is weighted down with an enormous

"custom-made" gold ring in the shape of a guitar.

Travis grew up in North Carolina and listened to a lot of country music. "My first favorite was Hank Williams, Sr.," he said. "Then Lefty Frizzell, Merle Haggard, and George Jones. As a matter of fact, those are still my favorites. Lately I've worked with George Jones and Merle Haggard, and it's great to get to know people that you've admired for so long."

Rock has never been much of a part of Travis's life. "I never listened to it as a kid. But I had three brothers and two sisters, and they liked it and had it on around the house, and my older brother used to try to sing and play it, so I heard it through him. But I never listened to it by choice or bought rock records or listened to it on the radio.

"I was introduced to country through my mom and dad. They had a great collection of it. Records by Hank Williams, Sr., Ernest Tubbs, Gene Autry, and Roy Rogers. And I used to watch all the old Roy Rogers movies on TV. Still do. I love those Westerns!

"But I never listened as a kid to the more classical-type singers like Peggy Lee or Frank Sinatra. Nowadays I have a great respect for what those people, like Sinatra, can do. Technically he's a wonderful singer—the way he's always able to stay on pitch. And his phrasing is great."

TODAY Travis seems about as threatening as a hit team of koala bears. That wasn't always so. He left North Carolina and ended up in Nashville—"running with the wrong crowd," as he put it. "I was seventeen and pretty rebellious. I was taking a lot of drugs and drinking. At one point I would have considered myself an alcoholic. I didn't want to listen to anyone. I got locked up a lot of times for a lot of different reasons, including breaking and entering. Once for trying to outrun policemen. Now *that's* not a good idea. Also, it's a very *hard* thing to do.

"The main reason I eventually got straightened out was that I met my manager, Lib Hatcher. She gives great advice, and finally I found someone I could talk to. I never had that before. It was really a combination of her and my music. For the first time I took the music business seriously. It gave me something ac-

tually to *do*. Sometimes I see the kids today, and I'd like to break through their hopelessness and tell them that you *can* straighten out. I've been there, and I know you can, no matter what state you're in."

Travis's career actually started, as it does with so many country performers, in the small clubs of Nashville. "A lot of people helped in the beginning, like Gene Watson and Joe Stampley and Johnny Russell and Little Jimmy Dickens. They used to hear me in a club called the Nashville Palace. I worked there for three and a half years. They'd come over from the Grand Ole Opry, which was across the street, after or between shows, have something to eat, and listen to us pick and sing. They'd come back several times. And that *was* encouraging. Of course," he added, "they were friendly with the owner, and the food was good."

How does he account for his success among the urban professional crowd? He doesn't, but it doesn't surprise him, either. "The people from thirty up—that's always been a country audience. What *does* surprise me is the big audience I have with young people in their teens and twenties." Travis's groupies, by the way, are apt to turn up backstage with fresh-baked pies and cakes offered with girl-next-door shyness. The punk and metal crowd still seem impervious to his charms.

"Even kids four and five years old seem to like what I'm doing," he said. "I'm singing for everybody, no matter what kind of background they have or where they came from. Anyone who's had a happy relationship, or would like to, can relate to a song like *Forever and Ever*. Or somebody who's having bad times or just lost someone can relate to *Diggin' Up Bones*. When I go into the studio, I just try to find the best songs and play them well. I don't aim it at any audience. I never thought I'd be lucky enough to get some crossover airplay and then land on the pop charts. Those were the farthest things from my mind. I'm glad it happened, but what I really want to do most is still cut good country music."

On the subject of crossover Travis is somewhat ambivalent. "Crossover music is fine, but I think that on the whole it got kind of boring. Too many country people were trying too hard to cut that kind of music. Some of them had a lot of

success with it—Kenny Rogers, Crystal Gayle, Eddie Rabbit. But it got to the point where it seemed like every country artist was trying for crossover appeal. And not every artist has it. It doesn't suit everybody. Merle Haggard's never tried for it, and I can't hear a Porter Wagoner singing that kind of material. I couldn't deliberately sing that kind of pop music myself. It wouldn't sound right. I have a voice that sounds like a country singer, and there's no way around that. Plus, I don't *want* to do anything else. I love country music."

TRAVIS is shrewdly realistic about his long-term career prospects, however. "Another way to look at it is this: Things are going great right now, and I hope they continue to for a long time. But I know that at some point things will slow down whether I want them to or not. It's not because people get tired of you. It's because they get *used* to you and there's not the excitement of the beginning for them. I know that point will come. It has for everybody else. You're going to have your little rise up, and then you're going to maintain, and then you're going to slow down. You're not going to drop out of sight. You're just at a lower level, and you maintain there. Look at Johnny Cash. There's a man who's been maintaining for a long, long time. Besides, you can only stretch crossover so far and it gets dull."

One recent project that Travis is particularly enthusiastic about is Richard Perry's "Rock, Rhythm and Blues," a gala tribute to the music of the Fifties just released by Warner Bros. Travis has one track on it, the old Brook Benton hit *Just a Matter of Time*. "It's just about as close to pop as you're ever going to hear from me. Perry's purpose is to show the influence that country has had on rock. You can hear that when you listen to Hank Williams, Sr."

All of the media attention that has come to Travis still seems to surprise him. "I don't know why things have gone the way they have. My whole career has been a shock to me. I don't really have a game plan. I'm just going to keep doing what I've been doing. I've had a lot of film offers, and I think I'd like to do some more. My main purpose is keeping the music up to where it should be." □

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BEST RECORDINGS OF THE MONTH

Stereo Review's critics choose the outstanding current releases

BONNIE RAITT WORKS HER MAGIC AGAIN

A YEAR or so ago, singer-songwriter-guitarist Bonnie Raitt looked in the mirror and saw a woman rapidly approaching forty, a romantic who'd just had her heart broken at the end of a long-term relationship, and an artist whose last album, the 1986 "Nine Lives," had been a resounding disappointment. On top of it all, she hadn't found self-expression in songwriting for quite some time. And so, she said in a recent interview, she fell into a "personal quagmire," breaking down both physically and emotionally. When she came out of it, however, she wrote what is probably the strongest song of her career, *Nick of Time*.

That song, which also lends its name to Raitt's terrific new album—her first for Capitol after an entire career at Warner Bros.—addresses the anxieties of aging, the ticking of the biological clock, and the realization that "life gets mighty precious when there's less of it to waste." But the final verse brings a celebration of the redemptive powers of love, as Raitt sings of finding a soul mate in the "nick of time."

Of course, the irony is that Raitt hasn't really found such a buttressing relationship in real life, but that doesn't diminish the impact of the song, which calls for a positive reordering of priorities as well as giving a realistic, if hopeful, chronicle of adult life. More than that, both the song and the album—Raitt's best since the early-Seventies classics "Give It Up" and "Home Plate"—point to a renewed optimism and artistic vision.

It's no wonder, then, that the album is being viewed as something of a comeback. Raitt's last few albums have shown a profound lack of focus, the last one having been

stitched together by some five producers who saddled her with a mishmash of material and styles and buried her in an avalanche of rhythm sections. Her choice of producer for "Nick of Time," though, was inspired—Don Was, of the Detroit-based band Was (Not Was). He pared away any excess instrumentation and left ample space for Raitt to work her magic in returning to the loose, primal funkiness of blues-oriented rock-and-roll that first brought her public attention.

As with Raitt's best-known successes, "Nick of Time" is held together by three strong, unifying elements: her emotional and tangy slide-guitar playing, her uncommonly expressive, husky soprano—soaring here with thrilling gospel and r-&-b leaps—and her selection of sassy, knowing songs about the ups and downs of romance. The album is remarkable, in fact, for its lack of weak songs, but even more so for Raitt's extraordinary vocal treatments, with the backing of an array of outstanding (and well-known) musicians. Among at least five truly impressive performances, one in particular clings to the memory. The song is Jerry L. Williams's *I Will Not Be Denied*, a pounding, rhythmic anthem about a strong woman who refuses to be bested by a straying man. With dramatic vocal control, Raitt builds on her anger through the first verse and chorus, and then, after seething through the bridge, finally lets her bitterness ooze out like a slowly deflating ball.

If the tradeoff for this kind of artistic apex is facial lines—which, Raitt complains, "are pretty hard to take when they're staring back at you"—the artist has learned that age, for all its physical deterioration, also brings a luminous resilience of spirit. For Raitt, too, maturity has brought the kind of self-examination and committed integrity that any generation—if it's lucky—will finally learn to embrace. "Nick of Time" somehow makes it easier.

Alanna Nash

BONNIE RAITT: *Nick of Time.* Bonnie Raitt (vocals, slide guitar, piano); David Crosby, Graham Nash (background vocals); Johnny Lee Schell, John Jorgenson (guitar); Herbie Hancock (piano); Don Was (keyboards);



Paulino Da Costa (percussion); other musicians. *Nick of Time:* *Thing Called Love, Love Letter; Cry on My Shoulder; Real Man; Nobody's Girl; Have a Heart; Too Soon to Tell; I Will Not Be Denied; I Ain't Gonna Let You Break My Heart Again; The Road's My Middle Name.* CAPITOL C1-91268, © C4-91268. © C2-91268 (43 min).

RACHMANINOFF'S SECOND FROM ROZHDESTVENSKY

GENNADY ROZHDESTVENSKY'S new recording of Rachmaninoff's Second Symphony with the London Symphony Orchestra on MCA Classics runs as long as many performances of Beethoven's Ninth, more than sixty-six minutes, with the first movement alone accounting for over twenty-four of them. But Rozhdestvensky is no slowpoke; his tempos flow with natural momentum throughout the work, without dawdling or big gear shifting to accommodate the more voluptuous passages. What accounts for the timing is that he not only

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BEST RECORDINGS OF THE MONTH



Conductor Gennady Rozhdestvensky

performs the score without cuts, as more and more conductors have been doing lately, but takes the first-movement exposition repeat as well. Yet nothing seems at all excessive. Everything makes such beautiful sense that one is not aware of time ticking away but simply of being thoroughly absorbed in an old "standard" made remarkably fresh.

Not only the first movement but the scherzo, too, gains from being taken at a sensible pace, a bit more expansive than the norm and the more convincing for it. The justly beloved adagio is kept moving with a fetchingly balletic elegance, reaching an unlabored climax that simply sweeps away any thought of resistance. And if you thought the Second Symphony was the one big work in which Rachmaninoff was free of his obsession with the *Dies Irae*, you'll find yourself stunningly corrected by Rozhdestvensky's clarification of innumerable details, particularly in the final movement, in which the chant melody emerges unmistakably and the entire structure comes together with—again—extraordinary conviction.

Conviction is the one word, perhaps, that sums up what makes this performance so remarkable. Rozhdestvensky has an uncanny knack for dispensing with superficialities and reaching into the very core of a thrice-familiar work, persuading us that it has more substance than we could have imagined, that it is

something we can believe in. He can also be depended on to have any orchestra playing at the very top of its form. His own successful efforts are enhanced here by outstanding sonics, with a balance of warmth and brilliance ideally suited to this performance. Neither the LSO nor the Rachmaninoff Second has ever sounded better in a recording.

Richard Freed

RACHMANINOFF: *Symphony No. 2, in E Minor, Op. 27.* London Symphony Orchestra, Gennady Rozhdestvensky cond. MCA CLASSICS © MCAD-6272 (66 min).

THE THIEVES: CLASSIC ROCK-AND-ROLL

TALK about misleading. "Seduced by Money," the splendidly titled debut album by the splendidly monickered Nashville band the Thieves, is *not* a concept album about yuppie greed. Well, not exactly. Money and status are, shall we say, merely subtexts. Actually, what the record is really about is providing aural evidence, quite conclusively, that these guys are among the last inheritors of a great and seemingly dying genre—

smart, blues-based, guitars-only American rock-and-roll. In fact, "Seduced by Money" is perhaps the finest example of that genre since Jason and the Scorchers unleashed "Fervor" back in 1984.

The band's not-so-secret weapon in that regard is lead singer and songwriter Gwil Owen, who has the classic rock mixture of knowingness and innocence down cold. He's also got a novelist's eye for detail, an ear for the melodic hook, and one of those great plain-spoken nasal voices that's equally at home with cry-in-your-beer ballads and sardonic hard-rock screamers. In short, he's a real find.

Fortunately, the rest of the Thieves are more than equal to the task of keeping up with him, and they are all assisted to no small degree by an exceptionally flattering no-frills production job by Marshall Crenshaw. I believe that this is Crenshaw's debut behind the control board, but it's not hard to see why he took the job. The Thieves' music, like Crenshaw's own, is formally concise, tuneful, and rooted in classic pop/rock verities. In fact, on the evidence here, Crenshaw should produce himself next time; none of his own albums has ever sounded this unfussy and right.

Lou Reed, who ought to know, observed in the liner notes to his recent "New York" album that

The Thieves: Bart Weilburg, Jeff Finlin, Gwil Owen, Robin Altomonte



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BEST RECORDINGS OF THE MONTH

"you can't beat two guitars, bass, and drums." The Thieves' "Seduced by Money" proves that he was absolutely right. The album also proves that heart, wit, and a refusal to pander are not as obsolete as the soulless fodder that clutters our airwaves might make you think, and it provides a wonderfully bracing antidote to moused hair, exposed navels, and drum machines. In other words, if rock-and-roll has ever meant anything at all to you, you should hear this album as soon as humanly possible. *Steve Simels*

THE THIEVES: *Seduced by Money*. The Thieves (vocals and instrumentals). *Everything But My Heart; All the Lines Are Down; Black Lipstick; Girl of My Dreams; When I Wake with Someone New; From a Motel 6; Pick a Number; Pendulum; Seduced by Money; Cassidy Knows*. CAPITOL C1-91153, © C4-91153, © C2-91153 (35 min).

SITKOVETSKY'S DAZZLING PROKOFIEV

PROKOFIEV'S two masterly violin concertos are represented on CD by several formidable performances, but the new recording of them by Dmitry Sitkovetsky, Colin Davis, and the London Symphony Orchestra on Virgin Classics gives the compe-

tion a real run for the money. This is Sitkovetsky's first recording of twentieth-century concertos, and the brilliance and control of his playing are simply dazzling. For their part, Davis and the orchestra provide ideal collaboration all the way. The miking is fairly close up, with the violin favored but not exaggeratedly so, and the recording's dynamic range is very wide.

In the more diabolical pages of these scores—the scherzo of the Concerto No. 1 and the finale of No. 2—Sitkovetsky's performance has a blood-chilling edge. Yet in the opening and closing passages of No. 1 and the ineffably beautiful slow movement of No. 2 his lyrical sense is unerring. His violin tone is not as "hot" as that of many of his Russian contemporaries; rather, he exhibits an essentially Classical poise, with all the control that implies. His attacks and rhythmic pulse are precise and brilliant without being cold, and he sails into the more dramatic passages with great gusto—sometimes almost overbearingly. But that is a minor reservation. Overall, these are outstanding performances by a thoroughly stimulating artist. *David Hall*

PROKOFIEV: *Violin Concerto No. 1, in D Major, Op. 19; Violin Concerto No. 2, in G Minor, Op. 63*. Dmitry Sitkovetsky (violin); London Symphony Orchestra, Colin Davis cond. VIRGIN CLASSICS © VC 90734-4, © VC 90734-2 (49 min).

Dmitry Sitkovetsky: brilliance and control



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- **JIMMY CLIFF:** *Cliff Hanger*. COLUMBIA CK 40002. "Fine fusion" (January 1986).
- **MILES DAVIS:** *Ascenseur pour l'échafaud*. FONTANA/POLYGRAM 836 305-2. Eighty-minute compilation for the soundtrack of Louis Malle's 1958 thriller (titled *Frantic* in the U.S.).
- **BILL EVANS:** *The Complete Fantasy Recordings*. FANTASY FCD-1012-2 (nine CD's). Ninety-eight tracks recorded by the influential jazz pianist between 1973 and 1979.
- **PROCOL HARUM:** *Grand Hotel*. CHRYSALIS VK 41037. The band's debut recording for this label, "perhaps their most mature, ambitious, and moving album yet" (Best of Month, June 1973). *Home*. MOBILE FIDELITY MFCD 793. Originally released by A&M in 1970.
- **BABATUNDE OLATUNJI:** *The Invocation*. RYKO RCD 10102. *The Beat*. RCD 10107. The return of this international musical missionary's famous Drums of Passion.
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CLASSICAL

- **GOTTSCHALK:** *A Night in the Tropics; Grand Tarantelle; ten short works for piano solo*. Nibley, Abravanel; List. VANGUARD VCD 72026. "A felicitous, warm-blooded program" (November 1968).
- **MASCAGNI:** *Iris*. Petrella, Di Stefano, Christoff; Gavazzeni. LEGATO SRO-505-2 (two CD's). A rare one, from the Rome Opera, 1956.
- **MASSENET:** *Manon*. Freni, Pavarotti; Maag. LEGATO LCD-132-2 (two CD's). Recorded at La Scala, 1960.
- **SCHUMANN:** *Davidsbündlertänze; Fantasiestücke*. Perahia. CBS MK 32299. *Symphonic Etudes; Posthumous Etudes; Papillons*. Perahia. MK 34539. "Filled with spontaneity, poetry, and passion" (February 1978).



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

ASHFORD AND SIMPSON: *Love or Physical*. Nicholas Ashford and Valerie Simpson (vocals and instrumentals); instrumental accompaniment. *Love or Physical*; *I'll Be There for You*; *Comes with the Package*; *Til We Get It Right*; *Something to You*; and three others. CAPITOL C1-46946, © C4-46946, © C2-46946 (38 min).

Performance: *Still a thrill*
Recording: *Excellent*

I guess you could call Ashford and Simpson old smoothies, for even after all these years they can deliver a musical thrill—at least some of the time. They are in generally fine form here, with eight original pieces of sleekly produced contemporary urban music. While not every track is brilliant, the average is high, and there are two stand-outs: *I'll Be There*, the first single from this set, is one of the duo's classic love songs, a paean to loyalty that builds to stunning vocal peaks. And *Something to You*, a midtempo dance tune, takes its time winding up before socking home the main theme. P.G.

LACY J. DALTON: *Survivor*. Lacy J. Dalton (vocals); vocal and instrumental accompaniment. *I'm a Survivor*; *A Diamond All the Time*; *Turn to the One*; *Me and These Arms*; *Hard Luck Ace*; and five others. UNIVERSAL/MCA ◉ UVL-42264, © UVL-42264, © UVLD-42264 (33 min).

Performance: *Back on track*
Recording: *Nice*

After years of fighting with Columbia Records over the promotion and direction of her music, Lacy J. Dalton recently left that label for Universal Records, the promising new subsidiary of MCA. The move was a good one. Most of the songs here echo the sentiments of the first cut, *I'm a Survivor*, celebrating not only Dalton's own ability to hang in there, but others' as well, from ordinary no-name folks to the likes of Hank Williams, Jr., Waylon Jennings, and Janis Joplin—the three fitting subjects of *Hard Luck Ace*, the



THE PROCLAIMERS

SCOTTISH twins Craig and Charlie Reid wear Buddy Holly horn-rims and harmonize with the sibling surety of the Everly Brothers, but don't be deceived—the Proclaimers are true originals. Everything about them, from their thick and undiluted Glaswegian accents (“about” for about, “oat” for out) to the crisp cadences of their folk-flavored songs, is the genuine article. Their new album, “Sunshine on Leith,” is so fresh and uncorrupted that you can't help but revel in its optimism and promise—and how often do records like that come along?

Both of the Reids sing, and Charlie also plays guitar. Their first album, “This Is the Story,” was unaccompanied folkie minimalism, but wisely they haven't let that become a gimmick. In “Sunshine on Leith” they've broadened the palette with keen folk-rock backing from a variety of players, including two Fairport Convention alumni, guitarist Jerry Donahue and drummer Dave Mattacks, who really shine.

At times, the subtle electrification of the Proclaimers' music gives it an early British Invasion-style vigor. *Sean*, a homage to Elvis Presley, effervesces with Hollies-type “ah-ya!”s, and the

lovely, poppish *Come On Nature* recalls the pleasing harmonies of Peter and Gordon. The Proclaimers occasionally weave politics into the program, with *Cap in Hand* plainly stating the case for home rule (“I can't understand why we let someone else rule our land”) and *What Do You Do* sadly ruminating on the failure of democracy to ameliorate poverty. Overall, they do an admirable job of balancing the personal and political, perhaps giving a little more weight to life's pleasure and fulfillment at the level of friends, lovers, and families, just as it should be.

At its best, music lifts you up, gives you a sense of possibilities, fills you with crazy hope. “Sunshine on Leith” does all these things in a truly wonderful way. Parke Puterbaugh

THE PROCLAIMERS: *Sunshine on Leith* Craig and Charlie Reid (vocals, guitar); instrumental accompaniment. *I'm Gonna Be (500 Miles)*; *Cap in Hand*; *Then I Met You*; *My Old Friend the Blues*; *Sean*; *Sunshine on Leith*; *Come On Nature*; *I'm on My Way*; *What Do You Do*; *It's Saturday Night*; *Teardrops*; *Oh Jean*. CHRYSALIS FV 41699, © FVT 41699, © VK 41699 (41 min).

EXPLANATION OF SYMBOLS:

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rocking jewel that rounds out a proud and eclectic program.

Though some of the songs fit the "survivor" concept a little too neatly, and though the idea gets a tad repetitious, the singer pulls free of cliché in her inspired interpretations of the three cover tunes—Paul Simon's *Still Crazy After All These Years*, Guy Clark's *Old Friends*, and Kris Kristofferson's *The Heart*. Dalton, who is equally at home in country, folk, blues, and rock, has long been one of the most distinctive and creative of country music's neogreats, both in her tough songwriting and her raspy vocals. "Survivor" bears out her artistry with integrity, grit, and grace. *A.N.*

FAIRPORT CONVENTION: *Red & Gold*. Fairport Convention (vocals and instrumentals). *Set Me Up; London River; Summer Before the War; Open the Door Richard*; and six others. ROUGH TRADE US 63, © USC 63, © USD 63 (40 min).

Performance: *Never say die*
Recording: *Good*

In the case of Fairport Convention, you don't talk about a family tree but a family forest. "Red & Gold" is the group's 3,624th album, or thereabouts (actually, twenty-fourth sounds about right), and if you factor in all the offshoots and solo albums of Fairport's many alumni, there are enough records floating around to send a determined collector to the poorhouse (or the madhouse).

Throughout its career, Fairport Convention has vacillated between pure-folk revivalism and visionary synthesis, melding traditional British styles with such contemporary American influences as Jefferson Airplane and Bob Dylan. In advanced middle age, the band seems content to lean to the traditional side of the seesaw. The current edition of Fairport coalesced around founding member Simon Nicol after a well-received reunion show in 1980. While Nicol's a fine singer and guitarist, he's not the charismatic spark plug that former Fairporters Richard Thompson, Sandy Denny, or even Dave Swarbrick were.

Still, "Red & Gold" is passably pleasant, strewing three fiddle-filled instrumentals among seven vocal numbers, none of the latter written by the band. British folkie Ralph McTell's title tune is a solemn historical account of a famous battle fought in the village that Fairport calls home. *London River* is a jaunty ode to the sailor's life, and *Set Me Up* benefits from Dave Mattacks's rocking, Faces-style back beat. The most joyous track, however, is a rollicking Cajun-flavored romp through a "Basement Tapes"-era Dylan gem, *Open the Door Richard*. A whole album in that vein might help to focus Fairport a bit, which couldn't hurt. In the meantime, "Red & Gold" will please longtime fans. *P.P.*

FINE YOUNG CANNIBALS: *The Raw & the Cooked*. Fine Young Cannibals (vocals and instrumentals); vocal and instrumental accompaniment. *She Drives Me Crazy; Good Thing; I'm Not the Man I Used to Be; I'm Not Satisfied; Tell Me What*; and five others. I.R.S./MCA ● IRS-6273, © IRSC-6273, © IRSD-6273 (35 min).

Performance: *Soul sensation*
Recording: *Could be better*

Roland Gift of Fine Young Cannibals has a supple, soulful voice that emerges entirely without affectation and with a weightless, effortless grace. If he and the Cannibals stay the course, Gift could very well wind up becoming one of the major voices of the Nineties. As it is, the British group's intermittent recordings—"The Raw & the Cooked" follows their debut album by a full three years—smack of an offhandedness that deserves to be tightened up, given the dimensions of their talent. (Admittedly, they've been sidetracked—or soundtracked—by movie work.)

"The Raw & the Cooked" is evenly divided between Motownish ballads and uptempo, high-tech dance tracks, with five of each. Gift, singing over the backing by fellow Cannibals Andy Cox on guitar and David Steele (late of the English Beat) on keyboards and bass, caresses the songs with a velvety sheen that fans of Al Green and Smokey Robinson will find appealing. If the material were consistently worthy of the vocals, "The Raw & the Cooked" would be a stoned-soul picnic. As it is, a handful of songs—notably *Ever Fallen in Love* and *I'm Not the Man I Used to Be*—are revelatory, the rest are entertaining, and Roland Gift is amazing. *P.P.*

GUADALCANAL DIARY: *Flip-Flop*. Guadalcanal Diary (vocals and instrumentals). *Look Up!; Always Saturday; Barometer; Happy Home; Pretty Is As Pretty Does; Everything But Good Luck; The Likes of You; Whiskey Talk*; and three others. ELEKTRA 60848-1, © 60848-4, © 60848-2 (38 min).

Performance: *Earnest*
Recording: *Okay*

Guadalcanal Diary has taken the basic college-band sound about as far as anyone. In "Flip-Flop," as in its three previous albums, the group has coaxed a near-Spectorian fullness out of its basic lineup of singer, guitarist, bassist, and drummer. Producer Don Dixon deserves some of the credit for this, since he pretty much stayed out of the way. Guadalcanal Diary's music doesn't "arrange" you to death. This band catches a good hook and rides it like a surfer rides a wave. Lyrically, "Flip-Flop" is less successful—telling you how to feel instead of making you feel it. *Ten Laws* blends religious images like a Cuisinart making gazpacho, and the song called . . . *Vista* literally consists of nonsense language (nonsense may be the point,

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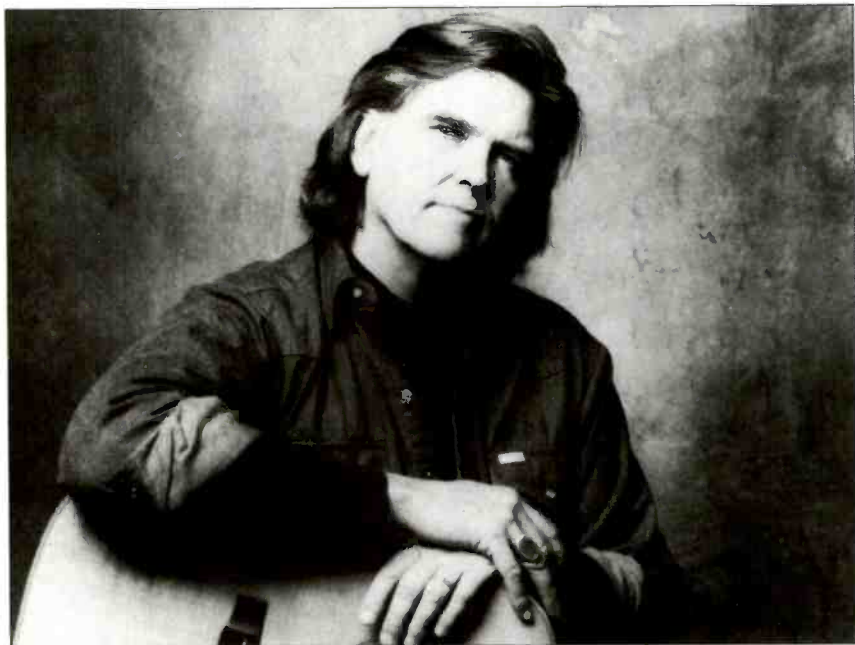
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GUY CLARK AND FRIENDS



IT'S been five years since Guy Clark's last album, "Better Days," which contained one of his most revered songs, *The Carpenter*, a tune that compared the woodworker of the title to the tools of his trade: "Tough as a crowbar, quick as a chisel, fair as a plane, and true as a level."

Through the years, Clark himself has been regarded as a craftsman, a precision songwriter who creates timeless expressions of life's sweet pleasures, bitter lessons, and honest truths. As one of the chief proponents of the Texas school of progressive country, his forte is condensing strong, complex feelings into short, eloquent stanzas, often achieving a hypnotic blend of language, imagery, and sound.

For his first album on Sugar Hill, "Old Friends," Clark has once again written and performed tender-tough songs that teeter between folk and country. It's a quieter album than those of years past, a simple, acoustic record devoid of drums and large instrumental outbursts. Everything about it, however, retains Clark's unmistakable brand of personal integrity, which is underscored by his decision to produce the album on his own and then approach the record companies, so as to avoid any musical compromise.

Joined by friends Emmylou Harris, Rosanne Cash, and Rodney Crowell, who supply vocal harmonies on six of the ten cuts, Clark segues from a confessional song about spiritual emptiness (*Old Friends*) to a whimsical one about the joys of sweet, ripe summer fruit (*Watermelon Dream*) to a comical talking blues (*Doctor Good Doctor*). Two of the most affecting offerings are *Immi-*

grant Eyes, a chronicle of his grandfather's life and imminent death in America, and *Hands*, a skillful treatise on peace, understanding, and love. Clark rounds out the record with contributions from his Texas buddies Townes Van Zandt (*To Live Is to Fly*) and Joe Ely (*The Indian Cowboy*).

Many of the songs in Clark's previous albums served as documentations of his life, from his frustrations with California living (*L.A. Freeway*) to a moving account of his bittersweet relationship with his father (*The Randall Knife*). "Old Friends" shortchanges that aspect of his songwriting gifts in favor of at least two songs (*All Through Throwin' Good Love After Bad* and *Come from the Heart*) that should enhance his chances of commercial airplay. That—and an engineering decision to mix the instruments and background vocals at a lower level than discriminating ears may like—dulls the album's impact by a perceptible measure. In the end, though, "Old Friends" is still an exceptional work, and one that often produces unadulterated joy. *Alanna Nash*

GUY CLARK: *Old Friends*. Guy Clark (vocals, guitar); Emmylou Harris, Rosanne Cash, Rodney Crowell (harmony vocals); Verlon Thompson (harmony vocals, guitar, percussion); Sam Bush (fiddle, mandolin, mandola); Vince Gill (guitar); other musicians. *Old Friends*; *Hands*; *All Through Throwin' Good Love After Bad*; *Immigrant Eyes*; *Heavy Metal*; *Come from the Heart*; *The Indian Cowboy*; *To Live Is to Fly*; *Watermelon Dream*; *Doctor Good Doctor*. SUGAR HILL SH 1025, © SHC 1025, © SHCD 1025 (28 min).

but it's still nonsense). These shortcomings may not matter to you, however, if you're a rock-and-roll surfer who simply wants to hang ten with the big-beat sound. *R.G.*

GIPSY KINGS. Gipsy Kings (vocals and instrumentals); other musicians. *Bamboleo*; *Tu quieres volver*; *Moorea*; *Bem, bem, Maria*; *Un amor*; *Inspiration*; *A mi manera*; and four others. ELEKTRA 60845-1, © 60845-4, © 60845-2 (44 min).

Performance: *Vigorous*
Recording: *Very good*

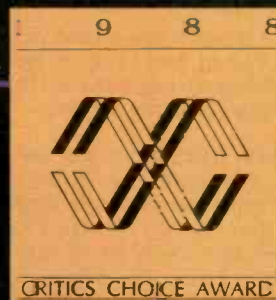
Romantic lore abounds with tales of the Gypsies, an ancient and mysterious roving people whose name has become synonymous with an adventurous spirit and a gift for passionate, fiery music. The Gypsy heritage of the great jazz violinist Django Reinhardt infused his music and contributed to his allure. That same indomitable spirit is represented now by the Gipsy Kings, six guitarists and a keyboardist who generate a wave of irresistible music with their vigorous singing, playing, stomping, and clapping. Their recording debut, "Gipsy Kings," became a best seller in Europe when it was released there in 1987, and now Elektra has made it available here in the U.S.

Although the Gipsy Kings got together in 1979 and performed throughout Europe and North Africa, they did not record until their producer-manager, Claude Martinez, had spent a year working on ways to enhance their sound with contemporary touches. This mission has been accomplished so tastefully that the album's beautiful, intricately embellished melodies seem to spring directly from their folk roots, yet they have universal appeal.

The most immediately recognizable musical strain is Spanish flamenco, evident in the intoxicating rhythms, percussive energy, and filigree ornamentation. The influence is honestly come by, for most members of the Gipsy Kings are sons or other relatives of the flamenco singer José Reyes. The group is based in France, but some of the members still live in family caravans that cross borders and transcend nationalities. The fusion of cultures is in their very language: Gitane, a mixture of Spanish, French, and Gypsy.

Since the guitar is the primary instrument in so much American popular music, this record has already stirred up a fair amount of excitement here. There's no need to understand the lyrics, for the message comes thundering through anyway in such songs as the rousing *Bamboleo* or the lyrical, classically fashioned *Moorea*. And if you want to know how good the Gipsy Kings really are, just listen to the only "standard" item they do, a Gypsy version of *My Way* called *A mi manera*. Lead singer Nicolas Reyes and his colleagues build to a climax of such inten-

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sity that you feel you're about to take flight.

There is more power and passion in this recording than could be simulated by a thousand amplified synthesizers. The Gipsy Kings are for real. *P.G.*

TOMMY KEENE: *Based on Happy Times*. Tommy Keene (vocals, guitar); vocal and instrumental accompaniment. *Nothing Can Change You; Light of Love; This Could Be Fiction; When Our Vows Break; The Biggest Conflict; Highwire Days; Our Car Club; If We Run Away;* and four others. GEFGEN GHS 24221, © M5G 24221, © 24221-2 (43 min).

Performance: *Impassioned*
Recording: *Full*

Tommy Keene is a first-rate power-pop singer and guitarist whose records, especially his pre-Geffen discography for a handful of independent labels, are highly treasured by those in the know. "Based on Happy Times" ranks with the best of his innocent early recordings, such as the indispensable "Places That Are Gone," and might very well be the most emotional work he's ever done. He's on the far side of innocence now, having lost a band and perhaps been led down a blind alley or two since

hitting the big time. The new record is a hard-charging document of disillusion and dissolution that emerges in a torrent of cryptic, private lyrics hinting at disappointment, broken promises, and a breaking heart.

The title "Based on Happy Times" implies that life was better then, and songs like *Hanging On to Yesterday* and *Highwire Days* reinforce this sentiment. The latter is gorgeously melancholy, powered along by urgent chords and a driving beat. Another standout track is *A Way Out*, which finds Keene and R.E.M.'s Peter Buck on guitar and mandolin, respectively, with a cello underscoring the moody threnody. My only criticism of the album is that the drums too often overwhelm songs that could have been taken at a more deliberate pace with slightly more subtle arrangements. On the other hand, Keene was obviously in the mood to get it all out, and his brash unburdening here makes for a rare level of excitement. *P.P.*

ANNE MURRAY: *As I Am*. Anne Murray (vocals); vocal and instrumental accompaniment. *Flying On Your Own; If I Don't Fall Tonight; You Make Me Curious; I'm Losing Your Love; Slow All Night; Take It from My Heart; Slow Passin' Time;* and three others.

CAPITOL CI-48764, © C4-48764, © C2-48764 (38 min).

Performance: *Improved*
Recording: *Good*

After several soulless European techo-pop records, Anne Murray has abandoned her cold, Vampiria sound and returned to the living with "As I Am." Produced by Nashville's Kyle Lehning, the album showcases Murray in a back-to-basics approach reminiscent of her 1974 "Love Song" album, though not as uptempo or funky. She has had the good sense to choose ballads by Randy Goodrum, K. T. Oslin, Shirley Eikhard, Karla Bonoff, and Vince Gill and to let Lehning dress the backing with simple instrumental threads. Murray's rich, throaty voice is as magnificent as ever, but her intense emotionalism should be as pronounced throughout as it is in Eikhard's sensual *You Make Me Curious* and Gill's *I'm Losing Your Love*. This isn't a great album by any stretch, but it's a nod in the right direction for a change. *A.N.*

THE PASADENAS: *To Whom It May Concern*. The Pasadenas (vocals); instrumental accompaniment. *Funny Feeling; Living in the Footsteps of Another Man; Riding on a Train; Give a*

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Little Peace; Tribute (Right On); and five others. COLUMBIA FC 45065, © FCT 45065, © CK 45065 (48 min).

Performance: *Soul-full*
Recording: *Good*

It's one thing to capture the sound of an earlier time. It's another thing to capture the spirit. The Pasadenas have done both in "To Whom It May Concern." This London-based vocal quintet has distilled the essence of soul, the sweet, searing edge of emotion that cannot be denied, and poured it into music that sounds entirely fresh. These men care as much about Little Anthony as they do about Prince, as much about doo-wop harmonies as drum machines. Listening to this album, you may hear echoes of Marvin Gaye or Michael Jackson, Archie Bell and the Drells, or the Chi-Lites. Or you may be dancing too hard for any music-history lesson. The Pasadenas have the rhythm and the blues. They should be heard. *R.G.*

BONNIE RAITT: *Nick of Time* (see Best of the Month, page 93)

SHENANDOAH: *The Road Not Taken.* Shenandoah (vocals and instrumentals); instrumental accompaniment. *Sunday in the South; Two Dozen Roses;*

Mama Knows; She Doesn't Cry Anymore; The Road Not Taken; and five others. COLUMBIA FC 44468, © FCT 44468, © CK 44468 (36 min).

Performance: *Promising*
Recording: *Very good*

At first, Shenandoah seems to be one of a myriad country-pop bands slapped together in imitation of some proven success—in this case, Southern Pacific, Exile, and Alabama—hoping to make a little jack before they fade off into oblivion. There's probably some truth to that. None of the band members writes, half of the songs here were written by the co-producer, and every cut is a potential hit single. But Shenandoah has a gold mine in lead singer Marty Raybon, a soulful baritone who makes the songs—mostly wistful reflections of life in small-town, rural America—resonate with recognition. Nothing here is as thoughtful or anxious as the gritty, small-town vignettes of Steve Earle, but Shenandoah, which puts an r-&-b spin on nearly everything, is good at capturing both regret and the head-swimming nausea of romance gone wrong, particularly in *Two Dozen Roses* and *She Doesn't Cry Anymore*.

The group got its name, by the way, from a "name this band" newspaper

contest, passing up the possibility of Rhythm Rangers to settle on the imagery of the rolling green hills of Virginia. But there was another Shenandoah, of course, the nation's first Navy dirigible, which broke up over Ohio in 1925 after encountering a fatal line squall. Here's hoping its musical counterpart has a longer voyage—and a far smoother ride. *A.N.*

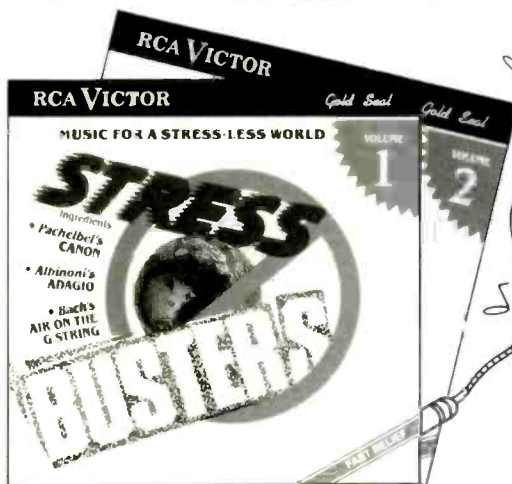
GEORGE STRAIT: *Beyond the Blue Neon.* George Strait (vocals); vocal and instrumental accompaniment. *Beyond the Blue Neon; Hollywood Squares; Ace in the Hole; Leavin' Been Comin' (For a Long, Long Time); Baby's Gotten Good at Goodbye; Angel, Angelina;* and four others. MCA • MCA-42266, © MCAC-42266, © MCAD-42266 (29 min).

Performance: *Potential Platinum*
Recording: *Very good*

In this eighth album with producer Jimmy Bowen, George Strait continues to demonstrate the formula that catapults his records to Gold and Platinum status: A no-nonsense, businesslike approach to the project, a warm and sensuous baritone gliding effortlessly between notes, and an almost faultless choice of songs, largely Texas dance-hall fare and stone-country weepers.

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Backed by session veterans who perfectly capture the essence of Bob Wills's Texas Playboys and Hank Williams's Drifting Cowboys, Strait commands his way through the bouncy *Baby's Gotten Good at Goodbye*, the tongue-in-cheek *Hollywood Squares*, a memorable talking-to-the-beer-bottle song, *Too Much of Too Little*, and a heavy dose of high-gloss western-swing. Romantics will lament the lack of pop-oriented love songs like *Marina del Rey*, and still others will yearn for a little more emotion in the singer's easygoing delivery. Like most of Strait's albums, "Beyond the Blue Neon" is unflinchingly derivative and even occasionally bland. But for mastery of a genre, Strait, as this record more than proves, is simply impossible to beat. *A.N.*

TESLA: *The Great Radio Controversy.* Tesla (vocals and instrumentals). *Hang Tough; Lady Luck; Heaven's Trail (No Way Out); Be a Man; Lazy Days; Crazy Nights;* and seven others. GEFEN GHS 24224, © MSG 24224, © 24224-2 (59 min).

Performance: *Adequate*
Recording: *Dense*

If every song in "The Great Radio Controversy" were as good as *Yesterdaze*

Gone, a breakneck-paced raver, and *The Way It Is*, a pretty, largely acoustic midtempo ballad, it would be a hard-rock record worth shouting about. As it is, the album is serviceable and adequate, but hardly outstanding. On the plus side, there are sufficient fireworks and change-ups in the production—such as the acoustic coda tagged onto *Be a Man* and the resourceful array of guitar sounds deployed throughout—to hold your attention even when the songs are only ordinary. On the minus side, too many of the songs are only ordinary. They are not songs so much as metal-derived mannerisms grinding against dull lyrics about the rock-and-roll life. The bottleneck guitar in *Heaven's Trail (No Way Out)* hews rather too closely to Cinderella's blues-metal blueprint from "Long Cold Winter," and elsewhere elements of Led Zeppelin, Whitesnake, and Def Leppard are baked into a fairly generic hard-rock pie. To be fair, guitarist Frank Hannon adds some nice chordal shadings here and there, and overall there's enough promise to give me hope that Tesla may eventually transcend the limitations of its genre. *P.P.*

THE THIEVES: *Seduced by Money* (see Best of the Month, page 94)

TOO MUCH JOY: *Son of Sam I Am.* Too Much Joy (vocals and instrumentals); other musicians. *Making Fun of Bums; Song for a Girl Who Has One; Clowns; My Past Lives; That's a Lie; Hugo!*; and six others. ALIAS/IMPOR-TANT A003, © A003-C.

Performance: *Off the wall and on the mark*

Recording: *Okay*

You don't really know how seriously to take Too Much Joy. You never know how seriously they take themselves. As the bass player, Sandy Smallens, says in the press kit that came with "Son of Sam I Am," "It takes talent to be simultaneously too smart and too dumb for your own good." These guys have that talent. Smart enough to make you pay attention. Dumb enough to tell you things you don't want to hear. Lucky enough to have a record company that doesn't get in the way.

It's hard to describe the songs here without making them sound too brainy. Too Much Joy packs intelligence into even the goofiest song, and "Son of Sam I Am" has its share of goof. *My Past Lives*, for instance, takes a satirical poke at reincarnates, and *That's a Lie* is a rocked-out cover version of the LL Cool J song, complete with a chorus of such

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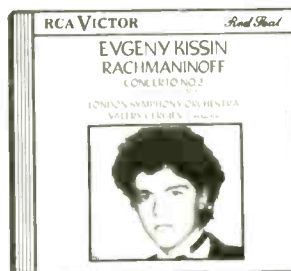
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lies as, "It won't hurt, believe me." Then there's this choice couplet from *Hugo*: "Guys quote Michael Stipe in bars/To pick up girls who own their cars." Take that, R.E.M. On a serious level, *Song for a Girl Who Has One* captures post-adolescent confusion perfectly, and *Kickers*, about a kid who has cancer, captures the aimlessness of his life with an endlessly repeating chorus of "Gone fishing. Gone fishing."

Musically, "Son of Sam I Am" has a spare, college-band sound. The rhythm section springs along tirelessly, and the guitar leads have a Chuck Berry snap. The melodies are catchy, maybe catchy enough to get one of these songs on the radio. Tim Quirk's lead vocals are a tad peculiar, spoken-sung and manic. The background vocals are faintly harmonious and complex enough to demonstrate that Too Much Joy has paid attention to the Beach Boys. Satire and parody are hard. They're even harder when the target is oneself. But Too Much Joy hits the mark. Over and over again.

R.G.

MARLENE VERPLANK: *Loves Johnny Mercer*. Marlene VerPlank (vocals); Tony Monte (piano); Bucky Pizzarelli (guitar); Milt Hinton (bass); Butch Miles (drums). *Early Autumn*; *Mid-*

night Sun; *My Shining Hour*; *Out of This World*; *Hit the Road to Dreamland*; *Jeebers Creepers*; and fifteen others. AUDIOPHILE © APCD-138 (53 min).

Performance: *Bright and winning*
Recording: *Very good*

Sixteen of the twenty-one tracks here date from 1978 and the remaining five from Marlene VerPlank's reunion with the same instrumental quartet just a year or so ago. They are all so well matched in terms of performance and sound, though, that it's almost impossible to tell which are which without checking the notes.

In 1978 VerPlank was still primarily one of the most in-demand studio singers for TV and radio commercials. Today she's becoming more and more renowned as a supper-club performer in New York, Los Angeles, San Francisco, and London—and it's easy to see why. There aren't many singers who bring as much *joie de vivre* and musical polish to the songs of Arlen, Gershwin, and Kern, and she's also a natural for the lyrics of Johnny Mercer—who, of course, collaborated with so many "classic pop" giants on so many great songs.

The arrangements, by husband Billy VerPlank, are all genial yet tangy, and

the VerPlanks keep them short and to the point (no self-indulgent meandering here) which explains the bounteous helping of songs they have managed to serve up.

R.H.

ALYSON WILLIAMS: *Raw*. Alyson Williams (vocals); vocal and instrumental accompaniment. *Just Call My Name*; *We're Gonna Make It*; *I Looked into Your Eyes*; *Not on the Outside*; *Masquerade*; *I'm So Glad*; *My Love Is So Raw*; and four others. DEF JAM/ COLUMBIA FC 40515, © FCT 40515, © CK 40515 (48 min).

Performance: *Star material*
Recording: *Satisfactory*

The Def Jam label is so closely identified with rap that this fine album of songs by Alyson Williams comes as a surprise. Williams is a new soul singer with the heart, pipes, and pizzazz to carve out a notable niche for herself, and her talent is particularly apparent in the deliciously mellow first half of the album.

Producer Russell Simmons assembled all the right materials to create a dazzling showcase for Williams, including several immediately captivating songs that let her swoop, coo, and simply sing her way into the listener's heart.

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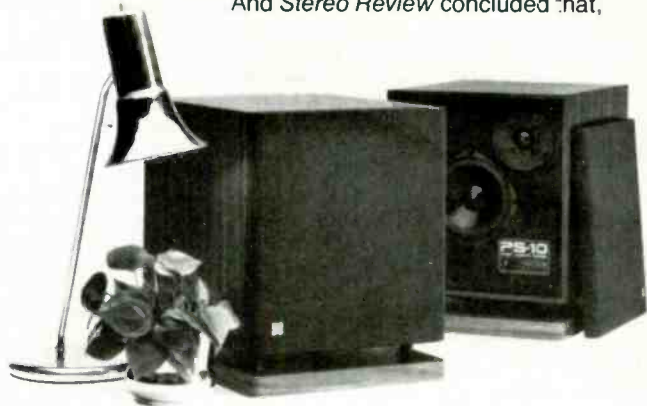
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XTC'S TIME WARP

THE XTC story so far: After achieving initial success as the brainiest, funniest band of the early-Eighties punk explosion, the trio, exhausted from the rigors of touring, retired to their small British home town content to become studio hermits. More recently, they've indulged their fondness for (and encyclopedic knowledge of) Sixties pop ephemera by releasing psychedelic cut-and-paste albums under the *nom de disque* the Dukes of Stratosphear and putting together an "official" XTC album, "Skylarking," that split the difference between their might-be-parodies of the "Sgt. Pepper" era and straightforward, adorable pop songs. The result: The XTC cult began to resemble a mass audience, something nobody expected or even believed possible.

And so one picks up "Oranges and Lemons," XTC's latest, and thinks, inevitably, "Huh?" The cover, after all, suggests vintage Peter Max, the title is as dippy-trippy as anything from the Summer of Love, and the album's very first cut, *Garden of Earthly Delights* (the Bosch reference, of course, is period perfect), is drenched in swirling Indianisms, the sound of finger cymbals, and the smell of incense. I mean, Holy Time Warp, Batman! Have these guys gone completely off the revivalist deep end?

Well, as it turns out, not really. I'm not certain this is the "Son of Skylarking" we might have hoped for, the record that turns XTC into an uncompromised mainstream sensation, but there's no question that the best tunes here (the ones written by leader Andy Partridge) are richer on every level—musically, lyrically, technically—than anything XTC has done before. Some of

these songs are (deservedly) destined to inhabit FM radio for a long time to come. That opener, for example, is drop-dead gorgeous once you get over the initial shock of its Ravi Shankar Goes Techno-Pop atmosphere, and in an odd, thoroughly British way, it's also quite funny. But it pales beside the album's other high points, like *The Mayor of Simpleton*, a textbook-perfect song matting a post-"Sgt. Pepper" musical idiom with the lyrical sentiments of Sam Cooke's sublime *Wonderful World*, and *The Loving*, which begins with canned applause (another obvious Beatles reference) and then gives you a tune so glorious you'll want to float away on it for days.

Some of the other tracks aren't quite so sunny, and sometimes, as in the past, the band's cleverness threatens to get out of hand. But in this day and age it seems ungrateful to knock musicians for acting as smart as they really are, so I won't. Let's just say that at its best "Oranges and Lemons" sounds like the friendliest mind-expanding experience of 1989 and that it's unlikely to wear out its welcome. If this is what happens to rockers who turn hermit, then I for one am all for it. *Steve Simels*

XTC: *Oranges and Lemons*. XTC (vocals and instrumentals); other musicians. *Garden of Earthly Delights*; *The Mayor of Simpleton*; *King for a Day*; *Here Comes President Kill Again*; *The Loving*; *Poor Skeleton Steps Out*; *One of the Millions*; *Scarecrow People*; *Merely a Man*; *Cynical Days*; *Across This Antheap*; *Hold Me My Daddy*; *Pink Thing*; *Miniature Sun*; *Chalkhills and Children*. GEFEN GHS 24218 two LP's, © M5G 24218, © 24218-2 (61 min).

There are also some faster-paced tunes that reveal her sassier side, with a polite touch of rapping on the title track, but it's the quality of her singing that really counts. Williams approaches each song here, from the intimate *Just Call My Name* to the impudent *My Love Is So Raw*, with a firm conviction and dramatic intensity that command the listener's attention.

There are two outstanding duets as well. In *We're Gonna Make It*, Williams is paired with Ted Mills, and in *I'm So Glad*, she and Chuck Stanley are accompanied by only a gospel piano. Soul singing just doesn't get any better than this. *P.G.*

TAMMY WYNETTE: *Next to You*. Tammy Wynette (vocals); vocal and instrumental accompaniment. *Next to You*; *You Left Memories Layin' (All Over the Place)*; *When a Girl Becomes a Wife*; *The Note*; *Liar's Roses*; *We Called It Everything But Quits*; and four others. EPIC FE 44498, ©FET 44498, ©EK 44498 (31 min).

Performance: *Back on target*

Recording: *Very good*

Tammy Wynette hasn't really been the First Lady of Country Music for a long time now, but if she continues to put out many more albums like this one, she'll probably regain the title in no time. Under the direction of producer Norro Wilson, Wynette has remembered how to put her hugely expressive voice to best dramatic use, cooing up to phrases that let even the youngest listener know she is no novice—in either the recording business or the business of love.

Wynette, who has always looked and sounded more mature than her chronological years, is called upon to play a number of roles here, and in a program that embraces ballads, honky-tonk, and sprightly rhythm numbers, she successfully conveys the private notions of a seductress, a mother, a woman scorned, and a contented wife settling comfortably into her senior years. Producer Wilson has found a sterling selection of songs for her, most of which come from the pens of Nashville's most celebrated tunesmiths—Dallas Frazier, Doodle Owens, and Curley Putnam, among others. The most affecting tune, however, is a Wynette original (co-written with husband George Richey) called *When a Girl Becomes a Wife*. Written on the occasion of the marriage of Wynette's daughter, Tamela Georgette, the song melds an old-fashioned, pioneer sentiment with the most stalwart mountain morality, and both its instrumentation and spirit recall the best of Dolly Parton's folksy, backwoods ballads. There are moments here, as in many other performances in this inordinately satisfying album, when Wynette's inimitable voice and a well-wrought lyric come together to produce pure and perfect shivers of joy. *A.N.*

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SMALL-SCREEN SPRINGSTEEN

BRUCE SPRINGSTEEN was late coming to music video for the best of reasons: He didn't think it was his element. Springsteen was, after all, the one rock star about whom it was generally conceded that you had to see him in person, and video, whatever its virtues, is a canned medium. So "Video Anthology/1978-88," most of which documents his belated acquiescence to the MTV era, is a kind of portrait of the artist coping with a world he never made. Therein lie both its strengths and its weaknesses.

The strengths, happily, are musical. Almost all of the songs are among Springsteen's best, and the performances, mostly live, have the usual E Street Band balance between rock-and-roll spontaneity and session-man precision. The visuals, on the other hand, most often let the music down. The weakest of them, surprisingly, comes from the usually imaginative director Brian DePalma, whose concert staging of *Dancing in the Dark*—complete with a transparently phony bit of business where Springsteen pulls a girl straight from Central Casting up on stage to dance—is almost cringe-inducing (perhaps all those slasher movies have dulled DePalma's perceptions). But most of what's here, especially during the singer's unfortunate "Born in the U.S.A." beefcake phase, already looks strangely dated. The exceptions are a prophetic *Tougher Than the Rest* (prophetic in terms of Springsteen's marital

problems, given the goo-goo eyes he and singer Patti Scialfa make throughout) and John Sayles's warmhearted rendering of *Glory Days*, which nicely catches the street-gang camaraderie that's always been a major part of Springsteen's appeal.

Fans, of course, will doubtless be grateful to have these souvenirs of Springsteen's performances at their disposal, and in fairness it should also be noted that the digital audio remastering is terrific. Cranked through a good stereo system, the sound, off tape or disc, is great. Still, speaking as somebody who's seen Springsteen perform live almost from the beginning, there's something pretty crucial missing from "Video Anthology/1978-88." And that something is magic. What these videos capture is just good professional rock-and-roll, which is quite a different proposition.

Louis Meredith

BRUCE SPRINGSTEEN: *Video Anthology/1978-88.* Bruce Springsteen and the E Street Band (vocals and instrumentals). *Rosalita; The River; Thunder Road; Atlantic City; Dancing in the Dark; Born in the U.S.A.; I'm on Fire; Glory Days; My Hometown; War; Fire; Born to Run* (electric); *Brilliant Disguise; Tunnel of Love; One Step Up; Tougher Than the Rest; Spare Parts; Born to Run* (acoustic). CBS MUSIC VIDEO 49010 VHS Hi-Fi; IMAGE ENTERTAINMENT 1D6325CB videodisc (100 min.)

ALLEGRO JAZZ ENSEMBLE: *Sphinx.* Allegro Jazz Ensemble (instrumentals). *In This World; Legend; Sphinx; Portrait.* MOBILE FIDELITY © MFC D 898 (68 min).

Performance: *Red fusion*

Recording: *Excellent*

When it comes to expressing themselves through jazz, the Russians have come a long way in the past few years. Music making that once had the heavy, stilted, provincial sound of amateur night in Blagoveshchensk has evolved to the extent that Russian jazz recordings can now compare favorably with releases by the best American studio bands. The Allegro Jazz Ensemble, said to be the U.S.S.R.'s finest, has clearly been influenced by such groups as Weather Report and Return to Forever, but the magic of John Coltrane has not escaped their ears, either.

The highlight of the AJE's new American album, of material culled from various Melodiya albums, is the title track, *Sphinx*. It's a sterling piece with quite extraordinary solos by trumpeter Aleksandr Fisher and the group's leader, pianist Nikolai Levinovsky, as well as fine work by the rhythm section. An entire album of that caliber would establish Russian jazz as a valuable export to this country. *C.A.*

LOUIE BELLSON: *Hot.* Louie Bellson and His Jazz Orchestra (instrumentals). *Caravan; Hookin' It; Ode to a Friend; Together We Rise;* and four others. MUSICMASTERS © 20160, © 40160, © 60160 (50 min).

Performance: *Well oiled*

Recording: *Excellent*

Drummer Louie Bellson's latest big-band album, "Hot," lives up to its name from start to finish. In fact, the opening track, *Caravan*, is red hot in terms of both energy and musical content. Bellson is, of course, right at home with Ellington material, having been a member of Duke's orchestra for many years, but here the Ellington-Tizol classic is transformed into a racing caravan with sizzling solos by Ellington alumnus Clark Terry (on flugelhorn) and tenor saxophonist Don Menza, a long-time Bellson arranger whose chart this is. Sensible programming has the opening spark followed by two relatively sedate numbers featuring soprano saxophonist George Young and Menza, respectively. Then things heat up once again as this well-drilled band roars, waltzes, and struts through the remaining live selections, all to the propulsive beat of its remarkable leader. *C.A.*

CARL FONTANA: *The Great Carl Fontana.* Carl Fontana (trombone); Al

Cohn (tenor saxophone); Richard Wyands (piano); Ray Drummond (bass); Akira Tana (drums). *Showcase; Shoutin' on a Riff; Expubident*; and three others (seven others on CD). UPTOWN UP27.28, © UPCD27.28 (58 min); \$10 per LP, \$15 per CD, postpaid from Uptown Records, P.O. Box 186, Harrington Park, NJ 07640.

Performance: *Shining*
Recording: *Excellent*

While it continues to thrive within the context of big bands, the trombone seems to be an endangered species as a featured instrument; to hear Carl Fontana play it is to wonder why. Fontana is no newcomer: You have probably heard his horn blend in with the Woody Herman band or an ensemble backing a Las Vegas superstar, or you might have been fortunate enough to have caught him with the Four Trombones, Kai Winding's unusual group of thirty years ago. But now you have a splendid opportunity to hear Fontana in his own album, a thoroughly swinging, articulate set of hop and ballads. With Al Cohn's tenor sax and a rhythm section headed by pianist Richard Wyands, this 1985 quintet session is a sterling representation of no-nonsense jazz, expertly recorded by Rudy van Gelder. The CD contains four extra tracks, including a hip-swinging reading of *America the Beautiful*. C.A.

LEE KONITZ: *Round & Round*. Lee Konitz (alto saxophone); Fred Hersch (piano); Mike Richmond (bass); Adam Nussbaum (drums). *Luv; Someday My Prince Will Come; Nancy; Valse Hot; Giant Steps; Lover Man*; and three others. MUSICMASTERS © 40167, © 60167 (54 min).

Performance: *Exemplary*
Recording: *Excellent*

This is a characteristic Lee Konitz quartet date, which is to say that it is tasteful and rich in musical substance. Konitz's frosty approach to jazz was considered downright anarchistic by hot fans of the late Forties. That was when Konitz came under the influence of pianist Lennie Tristano, who knocked the jazz thermometer down by several degrees and heralded the birth of the cool: Konitz took part in that birth—the historic 1949 Miles Davis Capitol sessions. With today's new generation of music fans tiring of the predictable pop-oriented "jazz" that clutters up the charts, this set of nine selections—played entirely in 3/4 time—offers a splendid example of the real thing. To the uninitiated, "Round & Round" can serve as a wonderful introduction to the special artistry of Lee Konitz; to the conversant bop fan, it will affirm his ongoing creativity. C.A.

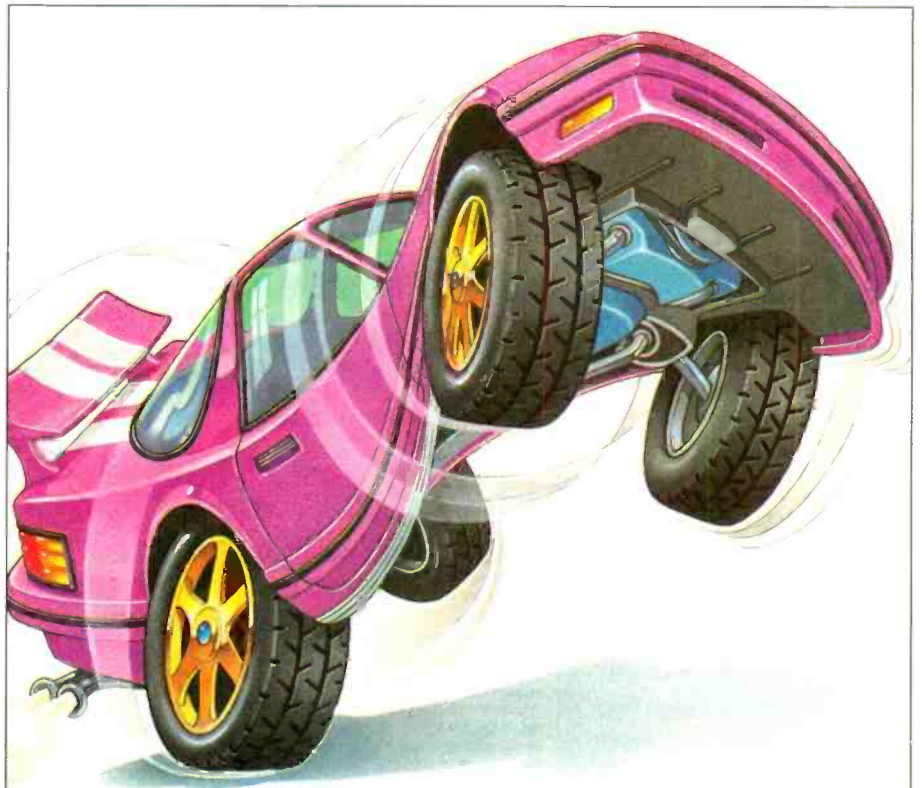
OREGON: *45th Parallel*. Ralph Towner (guitars, keyboards); Paul McCandless (reeds); Trilok Gurtu (percussion);

Glen Moore (bass); Nancy King (vocal). *Pageant; King Font; Beneath an Evening Sky; Urumchi; Les Douzilles*; and five others. PORTRAIT/CBS OR 44465, © ORT 44465, © RK 44465 (49 min).

Performance: *Rich*
Recording: *Very good*

If you like one Oregon album, you'll like them all. Few groups have maintained such consistency of style and taste. First with the late Colin Walcott as percussionist, and now with Trilok

Gurtu in that role, Oregon has remained true to its ideal of quiet fusion, jazz that brings together East and West in pristine, mostly acoustic instrumentals. A certain peacefulness surrounds nearly all of the music in "45th Parallel," but Oregon can also strike a harsh or dissonant chord. *Chihuahua Dreams* lurches, bursts, and rolls along, propelling guest vocalist Nancy King through a stabbing routine of scat gymnastics. This album may soothe you, but it won't put you to sleep. R.G.



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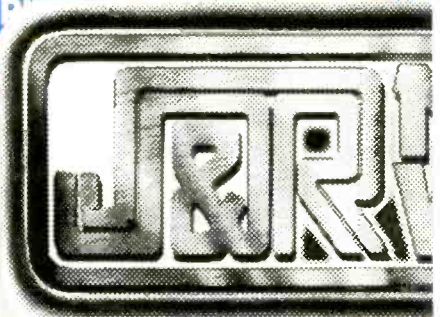
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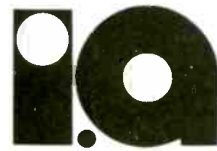
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BACH/BUSONI: *Chaconne from Violin Partita No. 2, in D Minor (BWV 1004); Toccata and Fugue in D Minor (BWV 565); Toccata, Adagio, and Fugue in C Major (BWV 564); Prelude and Fugue in D Major (BWV 532); Prelude and Fugue in E-flat Major (BWV 552).* Maria Tipo (piano). EMI/ANGEL © CDC-49066-2 (74 min).

Performance: *Illuminating*
Recording: *Well proportioned*

While Maria Tipo is familiar for her very faithful renderings of eighteenth-century harpsichord music on the piano, this package of Busoni transcriptions of Bach organ works comes as something quite unexpected. It is a remarkably impressive demonstration of how thoroughly and convincingly Busoni was able to reconstitute material so utterly characteristic of its original instrument in terms of one with an entirely different set of possibilities and restrictions. To call these "transcriptions" or "arrangements" is to understate what they represent. These are *recompositions*, remarkably faithful to the originals but effectively reconsidered in pianistic terms. You don't miss the organ or violin, don't imagine their sound—or that of any instrument but the piano. The handling of the Chaconne is much freer than in the organ works, as it is in Segovia's celebrated version for the guitar. It is, of course, a piece that invites that sort of freedom by its very nature.

Anyone would have to applaud Tipo's illuminating performances, which never allow the music to seem a mere "vehicle" but unflinching and effectively stress substance and balance. Her overall sense of proportion is enhanced by the fine sonic focus, which also provides a greater intimacy than the close-up approach favored in so many piano recordings. *R.F.*

BRAHMS: *Piano Concerto No. 2, in B-flat Major, Op. 83; Variations on a Theme by Haydn, Op. 56a.* Horacio Gutiérrez (piano); Royal Philharmonic

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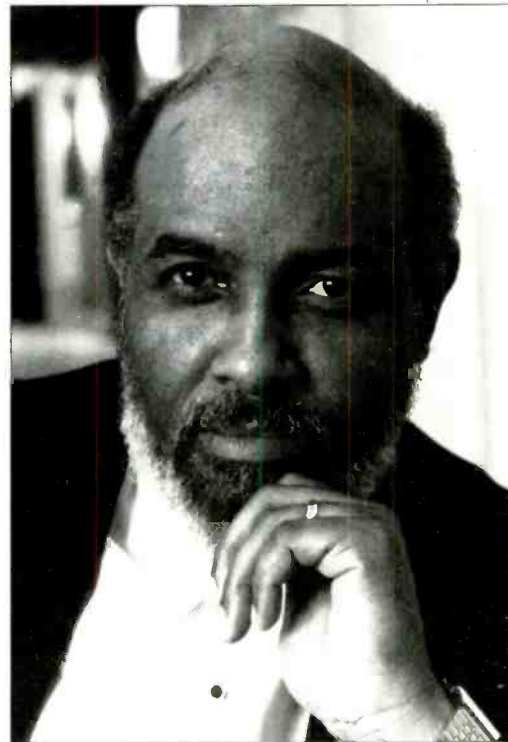
SHOSTAKOVICH'S ELEVENTH

SHOSTAKOVICH'S Eleventh Symphony, *The Year 1905*, is an evocation of the January 9, 1905, massacre of unarmed citizens by the czar's troops in front of the Winter Palace in St. Petersburg. Since its 1957 première performances, in Moscow and Leningrad, the work has been recorded eight times, first by Leopold Stokowski and the Houston Symphony in 1958. Despite this and other distinguished readings, it wasn't until the eloquent 1980 Angel recording by Paavo Berglund and the Bournemouth Symphony that most critics took the symphony seriously, having dismissed it earlier as musical socialist realism, the equivalent in sound of a propaganda movie or of the gigantic history paintings by which the French commemorated their revolution.

The impressive new recording by James DePreist and the Helsinki Philharmonic recalls Berglund's in emphasizing the tragic rather than the cinematic aspects of Shostakovich's conception. DePreist allows sixty-eight minutes for the panorama to unfold, compared with about sixty minutes in most of the other recordings. The opening movement, "The Palace Square," exudes a palpable chill in this reading, and the long second movement, "January 9th," culminates in a shattering and tragic fury.

The third movement, "In Memoriam," is built largely on the revolutionary funeral hymn *You Fell As Victims*. As performed here, the music presents a scene of total desolation, of hopes turned to ashes. The final movement, "The Tocsin," depicting the revenge of the populace a dozen years later, achieves its most affecting moments near the end, when the opening "Palace Square" music is recalled.

Overall, the performance is one of total conviction, once again eloquently making the case for the value of the



Conductor James DePreist

work itself. The recording is a model of clean sound and wide dynamic range. Delos is also to be complimented for including in the program notes the musical notation for the revolutionary songs Shostakovich used in his score as well as the thematic material drawn from his somewhat earlier choral settings of verses by revolutionary poets.

David Hall

SHOSTAKOVICH: *Symphony No. 11, in G Minor, Op. 103 ("The Year 1905").* Helsinki Philharmonic Orchestra, James DePreist cond. DELOS © D/CD 3080 (68 min).

Orchestra, André Previn cond. TELARC © CD-80197 (68 min).

Performance: *Heartwarming*
Recording: *A pleasure*

Horacio Gutiérrez and André Previn collaborated on the pianist's first concerto recording—a coupling of the Tchaikovsky First and the Liszt First on Angel—in 1976, and they make a splendid team again here in this broadly Romantic reading of the greatest of symphonic piano concertos. Gutiérrez's playing is amply endowed with a singing quality, strength, and virtuosity, and Previn provides firm, sensitive support in terms of dynamics and pacing.

The meltingly lovely slow movement and the carefree finale are not allowed to seem anticlimactic after the virility and passion of the opening movements. Overall, the approach favors warm-hearted lyricism over bluster.

The sound of Gutiérrez's Hamburg Steinway in the acoustic surround of London's Walthamstow Town Hall is a joy to the ear in its richness and power, and the balance with the Royal Philharmonic is eminently satisfying. Too bad the excellent solo cellist in the slow movement received no label credit.

Previn's performance of the *Haydn Variations* is a fine mix of finesse and brio—an ideal compromise between the

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volatility of Toscanini and the weight bestowed on the music by most of its Germanic interpreters. The flashy fifth variation has real snap and verve, the *grazioso* seventh variation is not allowed to drag, the following *presto non troppo* sounds properly spooky, and the ground-bass finale builds to a splendidly fulfilling conclusion. All told, a fine production. *D.H.*

BRUCH: Violin Concerto No. 1, in G Minor, Op. 26. SCHUBERT: Rondo in A Major (D. 438). MENDELSSOHN: Violin Concerto in E Minor, Op. 64. Nigel Kennedy (violin); English Chamber Orchestra. Jeffrey Tate cond. EMI/ANGEL © CDC-49663-2 (71 min).

Performance: *Excellent*
Recording: *Excellent*

What a lovely (as well as generous) idea it was to put Schubert's delicious Rondo for Violin and Strings between the Bruch and Mendelssohn concertos, now more or less standard disc partners—and what lovely performances these are! This CD would have been a highly competitive recording even without the considerable bonus of the seldom-heard Schubert piece, for Nigel Kennedy is remarkably appealing in both of the concertos. He strikes just the right balance between warmth and vigor, not so much *making* every phrase count as simply *allowing* the music to charm the ear with the most uncontrived naturalness and directness. That is just the sort of approach the Schubert also calls for, and it is so beguiling here—not quite as spirited as Pinchas Zukerman's equally fetching performance on Philips, but aglow with Schubertian radiance—that you may well want the disc for it alone. Throughout, Kennedy plays with absolute technical assurance as well as charm and commitment. Jeffrey Tate provides especially sympathetic support, and the sound could hardly be better. Highly recommended. *R.F.*

CHARPENTIER: Musiques pour les funérailles de la reine Marie-Thérèse. Bernadette Degelin, Diane Verdoot (soprano); Howard Crook, Zeger Vandersteene (tenor); Kurt Widmer (bass); others. Chamber Choir of Namur; Musica Polyphonica, Louis Devos cond. ERATO © ECD 75496 (58 min).

Performance: *Sympathetic*
Recording: *Too resonant*

Anyone who was enthralled by the Louis Devos recording of Marc-Antoine Charpentier's ethereal *De profundis*, written to mourn the death of France's Queen Marie-Thérèse in 1683, will automatically be interested in the other riches he composed for the occasion. Collected in this recording, the various pieces turn out to be very specific to the event, with representations of Faith, Hope, Charity, Hunger, and Thirst offering their comments on the death of the queen. While the compos-

er's inspiration rose to some pretty lofty levels, the constant lamenting can become a bit tedious. Nonetheless, even the most long-winded outpourings are unified by recurring melodic intervals and nudged along by not-so-distant echoes of dance rhythms. There is some exquisite ensemble and choral writing here, in which the polyphony is convincing yet the vertical harmonies maintain a characteristically French sensuousness.

Devos is particularly skillful in maintaining the rhythmic pulse, and the singers he has assembled are consistently good—in the case of Kurt Widmer, who gives a moving portrayal of Christ, considerably better than good. The chorus is a bit too large, and the problem is compounded by an overly resonant acoustic that clouds the music's inner workings. But that's a minor drawback. Considering how obscure these pieces are, we're lucky to have such a sympathetically performed recording of them at all. *D.P.S.*

COPLAND: Piano Variations; Piano Sonata; Piano Fantasy. David Lively (piano). ETCETERA/QUALITON IMPORTS KTC 1062 (64 min).

Performance: *Deep*
Recording: *Strong*

Aaron Copland wrote three big piano works, all in his serious (that is, non-popular) style: the eleven-minute Piano Variations of 1931, the twenty-two minute Piano Sonata of 1941, and the half-hour Piano Fantasy of 1957. All three are masterpieces of a kind, but, allowing for differences of length and period, they are surprisingly similar. They are not easy to take all in a row, though one by one they make a really powerful lineup in these strong performances by David Lively. Lively is an American pianist whose career has been mostly in Europe, and these recordings were made in Belgium—for the European as much as for the American market. The music makes a deep impression, and I think it will do a lot to convince the Europeans of Copland's stature. Maybe some Americans too. *E.S.*

DVOŘÁK: Symphony No. 7, in D Minor, Op. 70; My Home, Overture, Op. 62. Los Angeles Philharmonic Orchestra, André Previn cond. TELARC © CD-80173 (47 min).

Performance: *Warmhearted*
Recording: *Very good*

Like its successor, the Eighth Symphony in G Major, Dvořák's Seventh Symphony has enjoyed a long tradition of distinguished recorded performance stretching all the way back to the Czech Philharmonic's 78's under Vaclav Talich. While performance style for the G Major has remained quite consistent over the years, that for the D Minor has tended to polarize between a stressed, taut approach and a warmly lyrical one.

André Previn definitely hews to the latter course in this recording. The normally conflict-laden opening movement emerges full of ardor, almost to the point of lushness—an approach that works even better in the slow movement. The delectable folk-flavored dance-scherzo could stand a little more rhythmic lift, but Previn and his orchestra work wonders with the wealth of countermelody. Where most recorded performances with which I am familiar stress the urgent elements in the finale that culminate in the final triumphant outburst, Previn takes a somewhat easier and rhythmically freer view. Throughout, he makes a good case for his interpretation, and he is aided by fine orchestral execution and Telarc's gorgeous recorded sound.

The filler overture, *My Home*, is minor-league Dvořák that combines a rural Czech folk tune and a melody that eventually became the Czech national anthem, setting it all forth in a somewhat Beethoven-like manner. If the coupling is a consideration, I'd suggest Neeme Järvi's record of the D Minor Symphony, which comes with Dvořák's lovely late tone poem *The Golden Spinning Wheel*. D.H.

FAURÉ: Requiem, Op. 48; Pelléas et Mélisande, Suite, Op. 80; Pavane, Op. 50. Kiri Te Kanawa (soprano); Sherrill Milnes (baritone); Montreal Symphony Chorus and Orchestra, Charles Dutoit cond. LONDON © 421-440-4, © 421-440-2 (63 min).

Performance: *Luminous*
Recording: *Very good*

More than any other Requiem, Fauré's is monochromatic in mood. Because it omits the normally brilliant *Dies Irae*, it is almost one continuous elegy. It can be boring, but, if properly balanced and paced, it can move one to a spiritual catharsis. Charles Dutoit achieves that catharsis in this luminous reading. The chorus weaves a silken tapestry of sound, subtly shaping the contours of the vocal lines while the orchestra gently enfolds them in a glowing aura of gossamer. Kiri Te Kanawa's ethereal voice and seamless legato draw one even further into the composer's unique mysticism. Striving for the same effect, Sherrill Milnes, unfortunately, does not.

Added pleasures here are the sensitive readings of the orchestral suite from Fauré's *Pelléas et Mélisande* and the Pavane for chorus and orchestra. Both are perfect complements to the Requiem and are performed at an equally high level. S.L.

GRIEG: Piano Concerto in A Minor (see SCHUMANN)

HANDEL: Alexander's Feast; Concerto Grosso in C Major ("Alexander's Feast"). Donna Brown (soprano); Carolyn Watkinson (contralto); Ashley Stafford (countertenor); Nigel Robson

(tenor); Stephen Varcoe (bass). Monteverdi Choir; English Baroque Soloists, John Eliot Gardiner cond. PHILIPS © 422 053-2 two CD's (97 min).

Performance: *Riveting*
Recording: *Good*

John Eliot Gardiner's Handel recordings are almost always noteworthy. They are full of intelligence and insight and have a highly individual sense of rhythmic electricity and a feel for the composer's lyricism and word painting, all of which mark Gardiner as one of the leading Handel interpreters of our time. This recording of the ode *Alexander's Feast* bears out that assessment; it has all of the revelations customary in Gardiner's authentic-instrument Handel performances plus the considerable heat of a live recording. It all comes together with such power that one isn't consciously aware, on first listening, of the individual elements of the performance or score, just an unfolding, picturesque pageant of sounds and images arising from the John Dryden poem on which it is based.

Of course, a more objective listening reveals many instances of great mastery, whether it's a sense of phrases playing off or building on each other or some particularly deft feat of coloring in this joyfully freewheeling score. Also, there are plenty of moments of great artistry and high Handelian style from the fine cast of singers, especially from soprano Donna Brown and tenor Nigel Robson.

Also notable is Gardiner's decision to use the edition based on Handel's 1751 revival, which means the arias are distributed among five different soloists, rather than the three soloists used in the edition recorded by Nikolaus Harnoncourt—with his characteristically slower, more deliberate and mannered tempos—on Telefunken. Gardiner's recording is an altogether richer presentation of the piece. D.P.S.

HERBERT: Cello Concerto No. 1, in D Major, Op. 8; Cello Concerto No. 2, in E Minor, Op. 30; Yesthoughts; Pensée amoureuse; PUNCHINELLO; Ghazel; The Mountain Brook. Lynn Harrell (cello); Academy of St. Martin-in-the-Fields, Neville Marriner cond. LONDON © 417 672-4, © 417 672-2 (67 min).

Performance: *Loving*
Recording: *Excellent*

While Victor Herbert's Second Cello Concerto has been recorded two or three times since Bernard Greenhouse's memorable effort for the American Recording Society, this appears to be the first recording of its far less familiar predecessor. More than a few listeners may find the earlier work the more appealing of the two. It was produced in 1885, just before Herbert came to America, and is perhaps more characteristic of the Herbert most of us know; one of its themes seems to be echoed in the *Festival*

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March he composed in 1901. In any event, it is good to have the two concertos together, and they could not have had more effective advocacy than they receive here; everything about this handsome release suggests a real labor of love.

Lynn Harrell meets the cello virtuoso-composer on his own ground, as it were, and not only revels in the material Herbert wrote for himself but shows real affection for it. Neville Marriner, for his part, provides a most sympathetic accompaniment, and London's engineering team has put everything in the most appealing sonic frame. The *Pensée amoureuse*, which Herbert composed for cello and piano in 1892, and four of his little piano pieces, all transcribed for cello and strings by Sam Dennison, make lovely fillers. *R.F.*

HINDEMITH: *Cardillac*. Siegmund Nimsgern (baritone), *Cardillac*; Verena Schweizer (soprano), *His Daughter*; Robert Schunk (tenor), *Officer*; Josef Protschka (tenor), *Cavalier*; Harold Stamm (bass), *Gold Merchant*; others. RIAS Chamber Chorus; Berlin Radio Symphony Orchestra. Gerd Albrecht cond. WERGO/HARMONIA MUNDI U.S.A. © WER 60148/49-50 (two CD's (89 min)).

Performance: *Solid*
Recording: *Excellent*

Berg, Stravinsky, and Weill are more potent names in the annals of modern opera and European music theater, but no composer of the Twenties made a bigger contribution in this area than Paul Hindemith. After a series of much-noted chamber operas, Hindemith embarked on *Cardillac*, his first full-scale opera, which had its première in 1926. It is one of those works sometimes described as legendary—that is, more talked about than performed. Hinde-

mith himself attempted to remedy this situation in 1948 by preparing a revised version, as he did with others of his works, in light of his later theories. In fact, however, the earlier versions are—to our ears today—nearly always fresher and more exciting. That is certainly the case with *Cardillac*, and Wergo fortunately decided to go with the original version for this recording.

In line with the expressionist taste of the time, Hindemith chose to adapt a rather lurid story by E. T. A. Hoffman about a goldsmith who is so obsessed with his work that he kills his customers in order to get his jewelry back. It was clearly the theme, and not necessarily the specifics, that attracted the composer. Not much happens in *Cardillac*; it is not the place to look for complex character development. Rather, it is a series of scenes or tableaux on which Hindemith has hung a rich, vigorous, intense, dark, hard-driving score—one of his finest. As an opera on the subject of art and artists, it is only a sketch for the much greater *Mathis der Maler*, but as a piece of music it is surprisingly moving and emotional.

Hindemith, like Stravinsky, has always had the reputation (which he fostered) of being a craftsman of an almost medieval, or Baroque, objectivity. But there is a breathless level of inspiration and emotional intensity in his earlier work that reaches a peak in *Cardillac*. The recorded performance here, under Gerd Albrecht's direction, is a solid, intense one, with a good cast, and the recording itself is excellent. Unfortunately, the opera's libretto, by Ferdinand Lion, is given only in German, and there is no synopsis in English—only a translation of a rather Germanic essay on the music. *E.S.*

LISZT: *Années de Pèlerinage, Troisième année*. Zoltán Kocsis (piano).

PHILIPS © 420 174-4, © 420 174-2 (52 min).

Performance: *Poetic*
Recording: *First-rate*

Surprisingly, this seems to be the first compact disc of the complete Third Year of Liszt's pianistic pilgrimages, the one centered on Rome. We may expect Brendel, Bolet, Wild, and perhaps Arrau to be heard from in due course, but we may not expect any of those well-established Lisztians to surpass Zoltán Kocsis's achievement. This final volume of the *Années* followed its two predecessors by some twenty to thirty years; the seven pieces in it, composed when Liszt was in his late fifties and sixties, are among the works we now regard as "prophetic." Kocsis is very much attuned to this characteristic of the music. He neither exaggerates nor suppresses the occasional intimation of Debussy but lets it all happen with a naturalness that makes the listener a sort of companion and co-discoverer. His exquisite, poetic approach suits this exquisite, poetic music splendidly. Nowhere is he content to stay on the surface, and nowhere does he allow a gesture to be overdrawn. Noble simplicity is the keynote here, making Kocsis's identification with the music complete, his projection of it revelatory in the truest sense. The sound is first-rate, the documentation comprehensive. *R.F.*

MENDELSSOHN: *Violin Concerto in E Minor* (see BRUCH)

MOZART: *Sinfonia Concertante in E-flat Major (K. 364); Concertone in C Major (K. 190)*. Jaap Schröder (violin); Marilyn McDonald (violin, viola); Stephen Hammer (oboe); Kenneth Slowik (cello); Smithsonian Chamber Orchestra, Jaap Schröder cond. EMI/ANGEL © CDC-49006 (58 min).

Performance: *Pristine*
Recording: *Excellent*

MOZART: *Sinfonia Concertante in E-flat Major (K. 364); Violin Concerto No. 3, in G Major (K. 216); Rondo for Violin and Orchestra in C Major (K. 373)*. Augustin Dumay (violin); Gérard Caussé (viola); Sinfonia Varsovia, Emmanuel Krivine cond. EMI/ANGEL © CDC-49160 (62 min).

Performance: *Expansive*
Recording: *Excellent*

These two recordings of Mozart's *Sinfonia Concertante* dramatically demonstrate the difference between the contemporary performance style and the so-called authentic or historical style. Jaap Schröder and the Smithsonian Chamber Orchestra turn in an elegant performance in the historical style, one in which precision and clarity are the hallmarks. Every instrument of the orchestra is clearly articulated, and the music sparkles like crystal. Emmanuel Krivine's modern-style reading with the

Zoltán Kocsis: Liszt projected with noble simplicity



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Stereo Review

Sinfonia Varsovia lacks that kind of clarity but makes up for it in the lushness of the overall orchestral sound. Augustin Dumay and Gérard Caussé spin long, sinuous lines molded by dynamic detail and a lavish use of rubato. My intellect applauds the authentic style of the Smithsonian reading, but my heart is melted by the sensuousness of the Sinfonia Varsovia's version. Who can choose? Do you like Mozart in shining silks, crisp laces, and powdered wigs, or do you prefer him decked out in russet velvets with freely flowing hair? There is room for both!

If you prefer velvets and flowing hair, you will certainly be delighted with Dumay's reading of the G Major Concerto and the lovely Rondo in C Major. But if you are not familiar with the early Concertone, with its two solo violins and obbligato cello and oboe, you will want to hear this rarity in the vital performance by Schröder, McDonald, and company. In their very different ways, both records are so delightful a choice between them is hard to make. S.L.

NIELSEN: *Violin Concerto, Op. 33*
(see SIBELIUS)

OFFENBACH: *Les Contes d'Hoffmann*. Neil Shicoff (tenor), Hoffmann; Ann Murray (mezzo-soprano), Nicklausse/La Muse; Luciana Serra (soprano), Olympia; Rosalind Plowright (soprano), Antonia; Jessye Norman (soprano), Giulietta; José Van Dam (bass-baritone), Lindor/Coppélius, Miracle/Dapertutto; Robert Tear (tenor), Andrés/Cochenille, Frantz/Pitichinaccio; Dale Duesing (tenor), Schlémil; others. Chorus and Orchestra of l'Opéra National du Théâtre de la Monnaie, Brussels, Sylvain Cambreling cond. EMI/ANGEL © CDCC-49641-2 three CD's (214 min).

Performance: *Eminently satisfying*
Recording: *Excellent*

Because Offenbach died prior to the first performance of *The Tales of Hoffmann*, his major opera, and because other perhaps well-meaning but misguided meddlers immediately began to tamper with the score, we will in all probability never hear the work performed as its composer intended. Using the newly published critical edition, however, conductor Sylvain Cambreling has come up with the most plausible recording of the opera yet. Why? Because commitment and sincerity are evident throughout, in both the conviction of the spoken-line readings and the characterful musical delivery of singers. These qualities are reflected strongly in Neil Shicoff's Hoffmann, surely his best recorded work to date. His performance offers musical pleasure as well as dramatic impulse; as a result, it is believable and arresting. Luciana Serra avoids the pitfalls of cuteness and artificiality built into the role of Olympia. Her clear, cool soprano fits the part, and she

handles the florid Doll's Song with ease and charm. Rosalind Plowright captures the ardent intensity of Antonia; her well-trained voice soars rapturously as she dies singing. Jessye Norman as Giulietta pares down her copious tone to create the superficially fragile courtesan; nevertheless, hers remains the most voluptuous-sounding Giulietta imaginable.

José Van Dam and Robert Tear portray their multiple characters as Offenbach intended: the same personality in varying guises. (The three principal soprano roles were conceived in the same way, but in performance are rarely sung by a single artist.) Dapertutto's celebrated Diamond Aria, which was not in Offenbach's original score but interpolated from another of his operas, is handsomely sung by Van Dam in an appendix of three selections. Throughout, he is fittingly suave and frighteningly sinister. Robert Tear molds his multiple personalities without being arch or oily, a frequent weakness in staged performances. Even Frantz's arietta, so often an embarrassment to be gotten through as discreetly as possible, adds to the totality of its scene. Finally, Ann Murray, an artist of noteworthy accomplishment, makes a warm, sympathetic, moving (and admirably sung) companion to the distraught and disillusioned Hoffmann. All told, a fine cast, well supported by their numerous colleagues in secondary roles.

The chorus and orchestra of the Monnaie in Brussels perform Offenbach's music with relish and understanding under Cambreling's taut, well-paced direction, and the recording itself has had a sound engineer's best attention. R.A.

PROKOFIEV: *Violin Concertos Nos. 1 and 2* (see Best of the Month, page 96)

PUCCHINI: *Madama Butterfly*. Mirella Freni (soprano), Cio-Cio-San; José Carreras (tenor), Pinkerton; Teresa Berganza (mezzo-soprano), Suzuki; Juan Pons (baritone), Sharpless; Anthony Laciura (tenor), Goro; Kurt Rydl (bass), Il Bonzo; Mark Curtis (baritone), Yamadori; others. Ambrosian Opera Chorus; Philharmonia Orchestra, Giuseppe Sinopoli cond. DEUTSCHE GRAMMOPHON © 423 567-4 three cassettes, © 423 567-2 two CD's (154 min).

Performance: *Unusually moving*
Recording: *Superior*

This new recording of *Madama Butterfly* invites comparison with Herbert von Karajan's London set, which has been the standard of excellence for some time, particularly since both performances feature Mirella Freni as Cio-Cio-San. In Act I of the new version, Freni admirably captures her character's childlike naïveté, and in Act II her interpretation is more personally expressed than it is in the Karajan recording, as you might expect in view of the soprano's remarkable artistic growth.

Under Karajan, Freni's Act I entrance is ethereally beautiful, and the optional high, pianissimo D flat—one of opera's most ravishing moments when properly executed—is breathtaking. Under Giuseppe Sinopoli her entrance is lovely, but she makes no attempt to conceal the fully mature quality of her voice; the high note is omitted, but she sustains a melting B flat. Both recordings confirm that Freni not only has one of the best voices but is one of the most thoughtful singing actresses of our day.

José Carreras, always a favorite of mine when he's properly cast, sings Pinkerton in the new recording. His performance is tasteful and shows a strong sense of character: his shadings and inflections in Act I create a telling image of Pinkerton as a man who is superficially attractive but, as is fully revealed in the sequel, self-centered and emotionally uninvolved. The Sharpless of Juan Pons is fully characterized too. His singing is warmly expressive, suggesting that he was challenged by working with Freni. Vocally opulent as always, Teresa Berganza brings a warm, lyrical quality to the role of Suzuki.

Sinopoli's crisp pacing in the first half of Act I contrasts with Karajan's more relaxed tempos in the earlier recording, though throughout the act Sinopoli pays considerable attention to aspects of Puccini's orchestration that usually go unheeded. Subsequently, as the dramatic urgency of Butterfly's situation gathers force, both conductors find common ground in a more traditional approach. (Continued on page 124)

Mirella Freni as Cio-Cio-San



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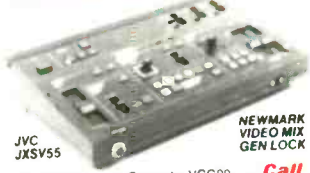
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BUDGET COMPACT DISCS

IN 1983, when the digital compact disc system was introduced in the United States, CD players cost from \$900 to \$1,400, and the discs themselves were sold for between \$13.98 and \$16.98. Today it is possible to buy a no-frills CD player for under \$200, but the prices of new compact disc recordings have not dropped significantly.

This situation is often compared to the cost of shaving equipment: A razor is cheap, but you have to keep buying blades for the rest of your life. Although men may have to shave, there are plenty of music lovers who feel they can stick with LP's until CD's become less expensive.

For collectors of classical recordings, however, things are now changing. Newly released all-digital recordings on major CD labels still go for around \$15 each, but many excellent reissues (mostly from analog masters) are available at mid-line prices of around \$10, and



Géza Anda

some quite good ones in budget lines cost as little as \$6 or even less. Quality varies widely among the budget lines, but four that deserve your attention are MCA's Royal Blue Double Decker series, RCA Victrola, Angel's Laser Series, and Black Pearl.

MCA's Double Decker packages contain two discs for the price of one mid-line CD, which means that they cost about \$5.50 each. The performances are drawn from the catalogs of such labels as (American) Decca, Westminster, Command, and Kapp. I wouldn't recommend their mono reissues of standard symphonic repertoire, but there are many good recordings in stereo.

Those that have given me pleasure include Bach's Mass in B Minor with soloists and orchestra of the Vienna State Opera conducted by Hermann Scherchen (MCAD2-9821), Wagner overtures with the Munich Philhar-

monic conducted by Hans Knappertsbusch (MCAD2-9811), Beethoven's Symphonies Nos. 2, 4, and 7 with the Pittsburgh Symphony conducted by William Steinberg (MCAD2-9810), and Tchaikovsky's complete *Nutcracker* ballet with the Philharmonic Symphony Orchestra of London under Artur Rodzinski (MCAD2-9801). A particularly interesting package contains Stravinsky's *The Soldier's Tale* with Melvyn Douglas as narrator and Prokofiev's *Peter and the Wolf* narrated by José Ferrer, once in English and once in Spanish (MCAD2-9820).

Prestigious orchestras and famous conductors make the CD's in the RCA Victrola line attractive. I particularly recommend the large-scale, very traditional performances of Beethoven's Symphonies Nos. 4 and 5 by the Boston Symphony under Erich Leinsdorf (7745-2-RV). The Boston Pops, conducted by Arthur Fiedler, performs Offenbach's *Gaité Parisienne* and Khachaturian's *Gayne Suite* with Fiedler's usual verve (7734-2-RV), and the grand gesture and sensuous orchestral sound that were Leopold Stokowski's trademarks are evident in his recording of Rimsky-Korsakov's *Scheherazade* with the Royal Philharmonic (7743-2-RV).

Among the performances on RCA Victrola CD's that are being released for the first time in the United States is a collection of Chopin waltzes (7744-2-RV) played with poetry and vigor by the Hungarian pianist Géza Anda. (Anda was the piano soloist in Mozart's Piano Concerto No. 21 on the soundtrack of the classic Swedish film *Elvira Madigan*.) Also released for the first time here is a collection of favorite Strauss waltzes played by the Vienna Symphony and the Berlin Symphony conducted idiomatically by the operetta composer Robert Stolz (7742-2-RV).

RCA's engineers were pioneers in the digital remastering of analog recordings, and the sound on these CD reissues varies from good to excellent. There is no denying, however, that some tape hiss is noticeable in quiet passages, and the same must be said of the CD's in Angel's Laser Series, which were well remastered at EMI's Abbey Road studios in London.

The standout in the Laser Series is the Mozart Requiem with Carlo Maria Giulini conducting the Philharmonia Orchestra and soloists Helen Donath, Christa Ludwig, Robert Tear, and Robert Lloyd (CDZ 62518). When this recording was first released on LP in 1979, Richard Freed described it in this magazine as "stunning." A profound and moving performance, it is still stunning ten years later. I think it is the best recording of this work I have ever heard.

Like the RCA Victrola CD's, the Laser Series also includes fine performances of favorite compositions by famous orchestras and conductors. Notable among them are Handel's *Water Music* with the Prague Chamber Orchestra under Charles Mackerras (CDZ 62509), Vivaldi's *Four Seasons* with the Virtuosi di Roma under Renato Fasano (CDZ 62508), and Chopin's Piano Concertos Nos. 1 and 2 with the Polish Radio National Symphony conducted by Jerzy Maksymiuk and the American pianist Garrick Ohlsson (CDZ 62512).

Angel has always been a distinguished opera label, and two of the most highly recommended CD's in the Laser Series are compilations of operatic excerpts, "Puccini Arias and Duets" (CDZ 62520) and "Viva Verdi" (CDZ 62521). Both feature such singers as Montserrat Caballé, Renata Scotto, Shirley Verrett, Franco Corelli, Plácido Domingo, and Alfredo Kraus, and the Verdi recital even has one selection sung by Maria Callas. The playing time of both these CD's is long—almost seventy minutes for the Puccini, almost seventy-three minutes for the Verdi.

List prices are not given for either the RCA or Angel budget lines, but the discs are usually sold for \$5.99 or \$6.99 and are occasionally marked down for special sales. The CD's on the Black Pearl label typically sell for an incredibly low \$3.99! And each has program notes on the music, which the others lack.

The thirty-odd Black Pearl CD's released so far are all performances by the Radio Luxembourg Symphony Orchestra conducted by Louis de Froment. Despite the audibility of a bit of tape hiss in quiet moments, the sound on these discs was never less than acceptable to my ears, and it often seemed quite good.

A choice CD in the Black Pearl series

Artur Rodzinski



is "Classical Evergreens," (BPCD 2032), which contains the ubiquitous Pachelbel Canon and Albinoni's Adagio in G Minor as well as favorite short works by Bach, Beethoven, Handel, Mozart, Vivaldi, Haydn, and Gluck, all



Carlo Maria Giulini

well played and recorded in very good sound. I also particularly enjoyed "Great Concertos" (BPCD 2002), works by Hummel, Torelli, and Vivaldi performed with much brio.

Not surprisingly, the Luxembourg orchestra plays the French works in this series with authentic Gallic flavor. "French Light Overtures" (BPCD 2013) has considerable charm, and a Ravel album (BPCD 2017), which contains *Boléro* and *La Valse* along with other works, is one of the best buys on the Black Pearl label.

The Radio Luxembourg Symphony is not as ample in size as some of the orchestras featured in the Victrola and Laser series, but there is considerable heft to its sound in Berlioz's *Symphonie fantastique* (BPCD 2014) and an album of Wagner overtures (BPCD 2011). The orchestra performs a surprisingly exciting Mahler Fifth Symphony (BPCD 2015) and kicks up a pretty good fuss in the "Bacchanale" from Saint-Saëns's *Samson et Dalila* (BPCD 2027).

With CD's of such high quality at such low prices, newcomers to classical music can afford to build a presentable library of standard works with only a modest investment. The package for Angel's budget CD's says, "With proper care and handling this Angel Laser Series CD will provide a lifetime of listening pleasure." What else will do so much for you for only six bucks?

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Alfred Brendel: an intense Schubert sonata

Few operas put greater responsibility on the principal singer than *Butterfly*. In each of her two recordings of it Mirella Freni's artistry clearly dominates: She sings with accuracy and taste, using her lovely voice as an instrument of dramatic and musical communication, molding her performance into a cohesive and affecting whole. You won't go wrong with either of these well-played and well-recorded performances, and in both cases you will be enriched by the achievement of this rare artist. *R.A.*

RACHMANINOFF: *Symphony No. 2, in E Minor* (see Best of the Month, page 93)

RAMEAU: *Pièces de clavecin; Suite in A Major*. Albert Fuller (harpsichord). REFERENCE © RR-27 (64 min).

Performance: *Variable*
Recording: *Good*

Albert Fuller, who is credited with making the first complete recordings of Rameau's keyboard music, back in 1962, has lived with the music for a long time. That has enabled him to take account of changing views on performance practice and to deepen his insight into the composer's idiosyncratic musical world. His long experience is very much apparent in the eight short pieces that make up the first half of this recital.

Fuller knows how to set up Rameau's musical jokes, and his tempos are flexible, which allows the music to take on an improvisational, narrative quality, as though the composer were telling us a series of funny (and occasionally phantasmagorical) bedtime stories. The performances have such an epic character that these short works seem almost like miniature operatic scenes.

It comes as quite a surprise, therefore, to find that Fuller's playing of the Suite in A Major is quite constricted emotionally. He rushes the famous *Gavotte avec six doubles*, which climaxes the suite, to such an extent that he discards any number of opportunities to make expressive points along the way. A comparison with William Christie's performance on Harmonia Mundi, or even with the long-out-of-print Robert Casadesu piano recording on Columbia, reveals how much Fuller misses in this case. *D.P.S.*

SCHUBERT: *Rondo in A Major* (see BRUCH)

SCHUBERT: *Piano Sonata in A Major (D. 959); Hungarian Melody in B Minor (D. 817); Sixteen German Dances (D. 783); Allegretto in C Minor (D. 915)*. Alfred Brendel (piano). PHILIPS © 422 229-2 (56 min).

Performance: *Intense*
Recording: *Close-up*

Alfred Brendel has been focusing on Schubert's late sonatas in his recitals lately and now is beginning to rerecord them. His 1973 recording of the big A Major Sonata, transferred to CD by Philips some time ago with a different set of German dances (D. 790), is effectively superseded by this remake—not because of sonic advantages (the earlier recording stands up quite well in that respect, though the new one, recorded close enough to preserve occasional vocal sounds, is especially vivid), but because of certain modifications in his approach to the sonata. The rhythm is a bit steadier in the opening movement, there is a starker poignancy in the slow movement, and there is a subtly but

noticeably greater animation in both the scherzo and finale, all of which add to the all-around greater conviction of the new performance. The always-welcome shorter pieces are exquisitely set forth.

While I would not hesitate to choose this over Brendel's earlier recording of the A Major Sonata, I am not sure I would prefer it to Maurizio Pollini's in his recent Deutsche Grammophon set of Schubert's last sonatas. Pollini's aristocratic but by no means aloof approach, unencumbered by conspicuous interpretive overlay, may wear a bit better than Brendel's more overtly intense and dramatic one, and Pollini includes the first-movement repeat, which Brendel does not. *R.F.*

SCHUMANN: *Piano Concerto in A Minor, Op. 54*. GRIEG: *Piano Concerto in A Minor, Op. 16*. Murray Perahia (piano); Bavarian Radio Symphony Orchestra. Colin Davis cond. CBS © M 44899, © MT 44899, © MK 44899 (60 min).

Performance: *Very good*
Recording: *Good*

There are more than half a dozen pairings of the Schumann and Grieg piano concertos on CD, including the 1972 Philips recording by Stephen Bishop-Kovacevich with Colin Davis conducting the BBC Symphony, which I consider the most poetically sensitive readings of these two masterpieces. But anyone who feels that Bishop-Kovacevich's performances are overly prettified may welcome this latest entry, which finds Murray Perahia and the same conductor occupying a middle ground between poetics and virility. Perahia strikes a tone of impetuous ardor in the opening movement of the Schumann, but he does not fail to give the episodes of melting sentiment their due. He plays the central intermezzo with keen sensitivity, and a particularly lovely bit of rubato paves the way for the transition into the finale, in which soloist and conductor join forces for a reading full of drive and rhythmic bite.

Perahia gives the Grieg concerto a more freely Romantic treatment than he does the Schumann. Both sides of the pianist's artistic personality—the extrovert virtuoso and the sensitive poet—find full scope throughout this work, and Davis keeps everything under control with taut and full-bodied orchestral support. Tremendous impetuosity and dash mark the main body of the finale, and the last pages come off in a most imposing manner. The sound has ample acoustic elbow room, maintaining a good balance between soloist and orchestra. *D.H.*

SIBELIUS: *Violin Concerto in D Minor, Op. 47*. NIELSEN: *Violin Concerto, Op. 33*. Cho-Liang Lin (violin); Philharmonia Orchestra; Swedish Radio Symphony Orchestra. Esa-Pekka

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Salonen cond. CBS © MT 44548, © MK 44548 (69 min).

Performance: *Fiery*
Recording: *Splendid*

There have been any number of fine recorded performances of the Sibelius Violin Concerto, beginning most notably with the Heifetz-Beecham 78-rpm set from the middle 1930's (reissued several times on LP), a recording that in effect brought the work into the standard repertoire. In contrast with the recent highly poetic Nigel Kennedy-Simon Rattle performance on Angel, this one by Cho-Liang Lin and Esa-Pekka Salonen is fiery and impetuous—brilliantly virtuosic in the old Heifetz manner.

But what really distinguishes this release is the pairing of the Sibelius with an outstanding performance of the Violin Concerto of Denmark's Carl Nielsen, a work dating from 1911 and of considerably larger dimensions than the composer's puckish late concertos for flute and clarinet. It begins with a handsomely improvisatory *Praeludium* that leads without pause into an *Allegro cavalleresco* culminating in splendid violinistic fireworks. A bittersweet slow movement is followed by a rondo finale that is more interesting for its cadenza than

its main tune. The work has many fine moments but does not measure up to the top-drawer Nielsen of the six symphonies and two late concertos. And it is a hard work to put across. Nevertheless, Lin and Salonen bring the music grippingly to life. For the first time in my memory of both live and recorded performances, the work really *goes*, and it is that achievement that makes this production quite special.

The Sibelius was recorded at Watford Town Hall, London, in 1987, the Nielsen at Berwald Hall, Stockholm, in 1988. The sound in both works is absolutely superb—clean, powerful, and well balanced. *D.H.*

WEILL: *The Seven Deadly Sins: Little Threepenny Music.* Julia Migenes (soprano); Robert Tear, Stuart Kale (tenor); Alan Opie (baritone); Roderick Kennedy (bass); London Symphony Orchestra, Michael Tilson Thomas cond. CBS © MT 44529, © MK 44529 (55 min).

Performance: *Annoying*
Recording: *Excellent*

At first glance, this promises to be the modern recording of *The Seven Deadly Sins* we've been waiting for. The score is the most musically sophisticated and,

in some ways, the most inventive of the Brecht-Weill collaborations, but it hasn't really been heard to its best advantage since the old mono CBS recording with Lotta Lenya, though the suave recent set on Deutsche Grammophon with Gisela May came close.

Both Julia Migenes and Michael Tilson Thomas have deftly straddled the popular and classical worlds in the past, and, given this work's richness—you might call it symphonic cabaret—they would seem the ideal interpreters. Unfortunately, they aren't. The problem is Migenes, mostly. Her keen theatrical instincts have gone way over the top here, and the result is a mincing, utterly artificial reading of a work that demands more honesty than artifice from the soloist. Migenes affects a penetrating, slightly nasal tone quality that becomes unpleasant, and she fusses over each word as though she were taking lessons in German elocution.

For his part, Thomas doesn't really capture the music's cabaret quality, either in *The Seven Deadly Sins* or the filler, Weill's *Little Threepenny Music*, but he finds lots of telling coloristic effects and gives both works an electric sense of rhythm. That's little compensation for Migenes's misconceived performance, however. *D.P.S.*

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by Christie Barter
& Ron Givens

AMERICANS know singer Sarah Brightman because she starred on Broadway in *The Phantom of the Opera*, composed by her husband, Andrew Lloyd Webber. Soon we'll get to hear her in a piece of Broadway-musical archaeology. In her upcoming Polydor album, "The Songs That Got Away," Brightman sings show tunes that never became hits. Included among the fourteen songs is a double rejection, Irving Berlin's *Mr. Monotony*, a song that was dropped from the Broadway productions of *Miss Liberty* in 1949 and *Call Me Madam* a year later. (It has been resurrected in the current hit *Jerome Robbins' Broadway*.)

Other songs: *I Remember (Sky)* from Stephen Sondheim's *Evening Primrose*, *Lud's Wedding* from Leonard Bernstein and Alan Jay Lerner's *1600 Pennsylvania Avenue*, *Dreamers* by Marvin Hamlisch and Christopher Adler from their British musical *Jean Seberg*, and *Half a Moment* by Lloyd Webber from *Jeeves*. Brightman is also busy on a mainstream pop album for fall release that is supposed to include songs



Brightman: digging for Broadway gold

record set called "Will the Circle Be Unbroken," went against the fashionable slickness of country music at that time and may have been the beginning of the "new traditionalist" movement. Now the Dirt Band has organized another get-together, again featuring some of the finest names in country music. "Will the Circle Be Unbroken, Volume Two" crosses generations as well, with such players as Acuff and Chris Hillman, the Carter Family and Levon Helm, Earl Scruggs and Ricky Skaggs. The Universal Records release also has vocals by Johnny Cash, New Grass Revival, Emmylou Harris, and Chet Atkins, among others. □

FOR almost forty years the Louisville Orchestra has been commissioning, performing, and recording works by contemporary Americans (and foreign composers resident here). The result is a catalog of over a hundred albums of new music issued on the orchestra's own First Edition label. Most of them were recorded by its founding con-

ductor, Robert Whitney, who retired in 1967, but Lawrence Leighton Smith, music director since 1983, has continued the tradition and is now presiding over the transfer of some of that vast catalog to compact discs on the Albany Records label.

The latest of three releases so far is a two-CD package devoted to music by Morton Gould. Smith conducts four of the seven works contained in the album, including Gould's *Symphony of Spirituals* of 1976 and his *Viola Concerto* of 1943, with Robert Glazer as soloist. Jorge Mester, who was Louisville's conductor from 1967 to 1979, conducts the *American Symphonette No. 2* (1939), and Gould himself conducts two of his works dating from the late Sixties, *Columbia* and *Soundings*. □

AT the nineteenth annual seminar of the International Tape/Disc Association, held in Palm Beach Gardens, Florida, this spring, the organization's 1988 Man-of-the-Year award was conferred on the one responsible for

sales of more than 14 million videocassettes and video-discs, one "who has set new records for sales and new goals to which future generations of video marketers will aspire." The recipient was E.T.—The Extra-Terrestrial.

Maureen Healy, publisher of *PRC News* in Los Angeles, asked whether ITA's Man-of-the-Year award would have been given to Disney's Cinderella had her video sold fourteen million copies. Healy proposed that the name of the award be changed to Personality-of-the-Year.

Previous winners of ITA's Man-of-the-Year award have included Akio Morita, chairman of the board of Sony (1978), and Alexander M. Poniatoff, founder and chairman of the board of Ampex (1981). □

WHEN pianist Van Cliburn won the International Tchaikovsky Competition in Moscow in 1958, the young American's triumph at the height of the Cold War made him an instant celebrity. His RCA recording of the piece he won with, the Tchaikovsky Piano Concerto No. 1, was the first classical Gold Record and has remained a best seller ever since, but Cliburn hasn't made a new record or performed in a major concert for the past decade.

That is about to change, however. Cliburn will play the Tchaikovsky First and the Liszt First Concerto with the Philadelphia Orchestra, under Stanislaw Skrowaczewski, on June 19. While RCA hasn't signed him yet for any new recordings, the label has just released the first five titles of the Van Cliburn Collection of mid-price reissues on compact disc.

Smith: Americana



Cash and Acuff: tradition

by Brian Wilson of the Beach Boys and Aimee Mann of 'Til Tuesday. □

IN 1973 the Nitty Gritty Dirt Band celebrated the grand traditions of country music by bringing together a bunch of young performers and such founding fathers and mothers as Roy Acuff and "Mother" Maybelle Carter. The recording, a three-

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Meanwhile, the 1989 Van Cliburn International Piano Competition has entered its final stages, with the concluding awards ceremony on June 11 set to be broadcast live nationwide on the WFMT Fine Arts radio network. For the first time in the history of the contest, held every four years in Cliburn's home town of Fort Worth, Texas, pianists from the U.S.S.R. are participating. Guess the Cold War really is over. □



Cliburn: performing again

WHEN jazz trumpeter Chet Baker died last year at the age of fifty-eight, he left behind a legacy of several fine recordings. The story of his abortive acting career and tragic personal life has now been told in a documentary film, *Let's Get Lost*, directed by the celebrated fashion photographer Bruce Weber (Ralph Lauren and Calvin Klein ads). The film, which was nominated for an Academy Award, follows Baker on a road trip through the U.S. and Europe and takes in some of his last recording sessions. Named for one of his best-known recordings, *Let's Get Lost* includes excerpts from some B-movies he made in Italy, rare performance footage, and interviews with the trumpeter, his ex-wives, and family. A soundtrack has been released by RCA. □

THE first audio recording mixed in genuine Dolby Surround sound for compact disc is RCA's "The Home Video Album," scheduled for release in the fall. It is a col-

lection of mood-setting music suitable for overtures, snack breaks, and intermissions between features during your evenings of movie watching at home. A bonus of CD+G computer-graphics title cards will be encoded on the CD. The album will also be available on cassette, but without the graphics, of course.

The performers include the National Philharmonic Orchestra under Charles Gerhardt and the Boston Pops Orchestra conducted by Arthur Fiedler. In addition to the great fanfares for studios like Metro-Goldwyn-Mayer, 20th-Century Fox, and Warner Bros., the album contains such novelty numbers as Leroy Anderson's *Fiddle Faddle* and *The Syncopated Clock*. The music of tremendous emotive power that Hollywood composers were famous for is represented by excerpts from such film scores as the ones Max Steiner wrote for *Since You Went Away* and *Now Voyager*. An extra dimension of realism and atmosphere will be added by a scratch-and-sniff patch impregnated with the odor of popcorn. □

IT'S Spoleto Festival time again in Charleston, South Carolina, and time to recall an album, released not so long ago by Musicmasters, devoted to live chamber-music recordings made at the city's charming old Dock Street Theatre during the 1986 festival. Spoleto's chamber-music concerts, under the direction of flutist Paula Robison and violist Scott Nickrenz, have been noted both for astute programming and

Baker: a life in jazz



Robison and Nickrenz: chamber music in Charleston

for the many fine young artists they have introduced in a most congenial context.

Featured in the two-disc Musicmasters album are several instrumentalists who, though relatively unknown at the time, have since come into their own on records and in concert halls, including violinists Joshua Bell and Joseph Swensen and pianists Yefim Bronfman and Jeffrey Kahane. The music ranges from Vivaldi and Mozart to Kodály and Shostakovich, with Dvořák's E Minor Piano Trio sandwiched in between.

This year's Spoleto Festival opens on May 26 with a rarely performed Bellini opera, *La straniera*, and runs through June 11. □

RYKODISC USA calls it "Return of the Thin White Duke." David Bowie's eighteen albums, originally recorded for RCA and now out of print, will be reissued by Ryko on compact disc, cassette, and LP. The rights to the entire catalog, from 1969's "Space Oddity" to 1981's "Changestwobowie," reverted to the British singer after he left RCA. Among the albums up for immediate release are "The Man Who Sold the World," "The Rise and Fall of Ziggy Stardust and the Spiders from Mars," "Diamond Dogs," "Young Americans," "Low," "Heroes," and "Scary Monsters." Rykodisc

plans to fill out the CD's, where possible, with alternate tracks and B sides and to restore the art work on "Diamond Dogs" to anatomical completeness. □

GRACENOTES. Fantasy has just released a live recording by jazz pianist McCoy Tyner called "Up-



Bowie: revived on CD

town/Downtown." It comes from big-band dates last November at the Blue Note in New York City. . . . Neneh Cherry, the daughter of jazz trumpeter Don Cherry, has a new album on Virgin following the success of her song *Buffalo Stance*. . . . A Grateful Dead concert can be seen live on June 18 on certain cable systems through pay-per-view networks. □

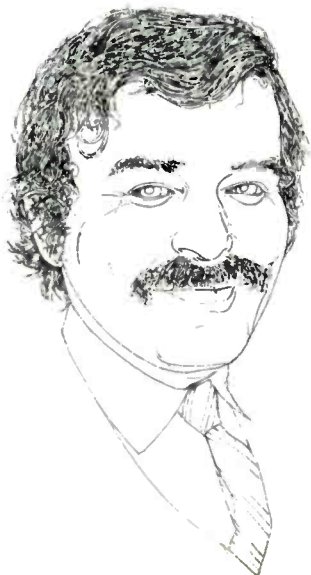
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by Ralph Hodges



THE IMPOSSIBLE ACHIEVED?

ALMOST since the beginning of time, an ideal model for the perfect loudspeaker has been a pulsating sphere, which swells for compression wavefronts and shrinks for rarefactions like a balloon capable of functioning at audio frequencies. (I say *an* ideal model because the concept entails perfect omnidirectionality, which is not always thought desirable.)

Nothing obvious in nature or science has seemed able to accomplish much toward realizing this model, although approximations have been attempted, most notably some ionized-gas-discharge devices that approach being point sources, and therefore omnidirectional ones. Those devices are not the most practical loudspeakers, however, and they tend to generate ozone, which, believe it or not, may be even more health-threatening than tobacco smoke. Thus, the pulsating ball has remained an impossible goal. Gasses might be coaxed into this sort of behavior, but rigidly composed solids could not.

Imagine my consternation, then, when Siegfried Klein, a French physicist long prominent in ionic-tweeter design, demonstrated a pul-

sating "tennis ball" at a press conference last February in New York City. He credits his accomplishment to the phenomenon of magnetostriction, which seems a most unlikely origin for anything of audio significance. Possibly that's why the device was so long in arriving.

Magnetostriction, first remarked upon by the nineteenth-century physicist J. P. Joule, refers to the change in dimensions of a ferromagnetic material under the influence of a magnetic field. In his address, Dr. Klein noted that a meter-length rod of nickel immersed in a modest magnetic field may decrease in length by 0.04 millimeter. Interesting, yes. Audio, no—unless, Klein maintained, this same order of alteration takes place over an adequately large area. If the rod is hammered into a thin-walled hollow sphere, for example, the surface area is maximized, and even small dimensional changes, in response to an applied magnetic field that varies with the audio signal, can move significant amounts of air.

Dr. Klein's sphere is composed of a cobalt-nickel alloy cupped by copper-coil electrodes. Within this sphere is a second one, of soft iron, to complete the electromagnetic circuit, and within that is a permanent magnet said to apply a magnetic "bias" to keep the device in its linear region of operation. And that is essentially all. To hear sound from such a thing when it's driven by a suitable amplifier is not really all that surprising. But a lab-table demonstration by the good doctor went far toward convincing me that I was actually hearing a globe that swells itself up and sucks itself in like a hyperventilating balloon, but at a rate unthought of for balloonhood.

What are we to make of such an invention? A number of things. First, it does appear to achieve the long-sought goal of perfect omnidirectionality, and it is of deep interest just for that reason (although nothing would seem to prevent the device from operating as a spherical section—a half or quarter sphere).

Second, the mechanism is astoundingly fast, according to Dr. Klein, to the point of having no real bandwidth limitations. It is tempting to speculate on whether its

speed approaches that of the switching of magnetic domains, but I wouldn't dare. In any case, much of the mass-controlled behavior that hobbles all conventional speaker drivers seems effectively bypassed.

Third, like an electrostatic diaphragm, the sphere is driven over its entire area, which suggests an elimination of break-up modes. The potential for gross dimensional modes remains, Klein admits, but these would correspond to wavelengths approximately equal to circumference-related dimensions of the sphere, which are longer than the present device, inactive much below 7,000 Hz, is called upon to handle. (I received a photo of a beachball-size prototype sphere said to be capable of useful output down to 800 Hz. With a circumference in excess of 60 inches, such a sphere would also exhibit dimensional resonances that remain well outside its operating band. In addition, a transition to conventional drivers for bass frequencies should be a good deal more seamless in terms of directivity matching.)

You'll agree, I suspect, that Klein's device sounds like an interesting tweeter. But does it *sound* like a *good* tweeter? As always, the hurly-burly of rushed, large-scale demonstrations is to be distrusted. My impression was of excellent detail and effortless extension, but with a touch of "glassiness," as opposed to "liquidity." Its output capabilities seemed unstressed—Klein maintains that, within the bandwidth chosen, the potential output is much greater than any home listener could bear.

All the news is not good, however. First, questions have been raised about whether the device can be manufactured with consistent quality, and time will have to tell about that. Second, as now configured, this tweeter is not to be driven by any amplifier but the one it comes with, as part of a self-powered three-way system with comparatively conventional midrange and woofer components. Third, that three-way system, manufactured by MB Quart and dubbed the Aera, is priced at \$25,000 the pair.

Sorry. It just seems that we can't have *all* of tomorrow today. □



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