

Stereo Review

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A/V RECEIVERS

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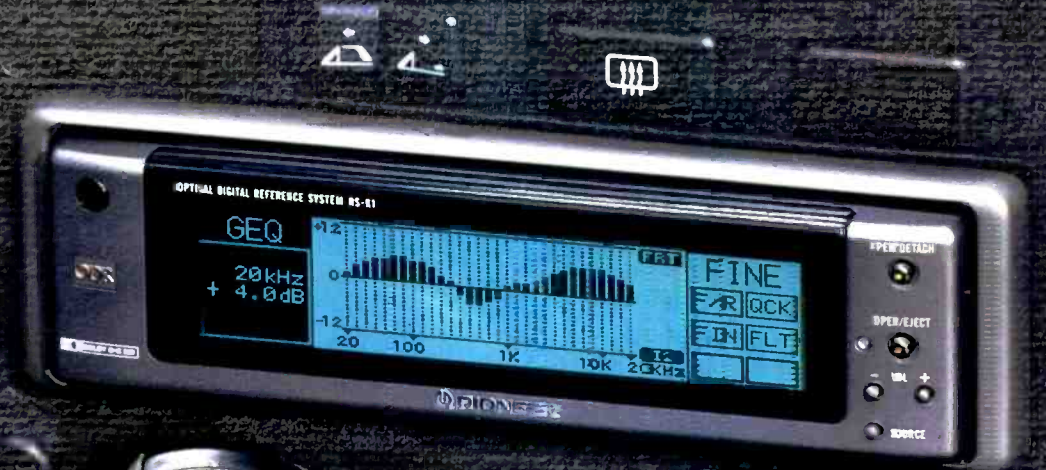
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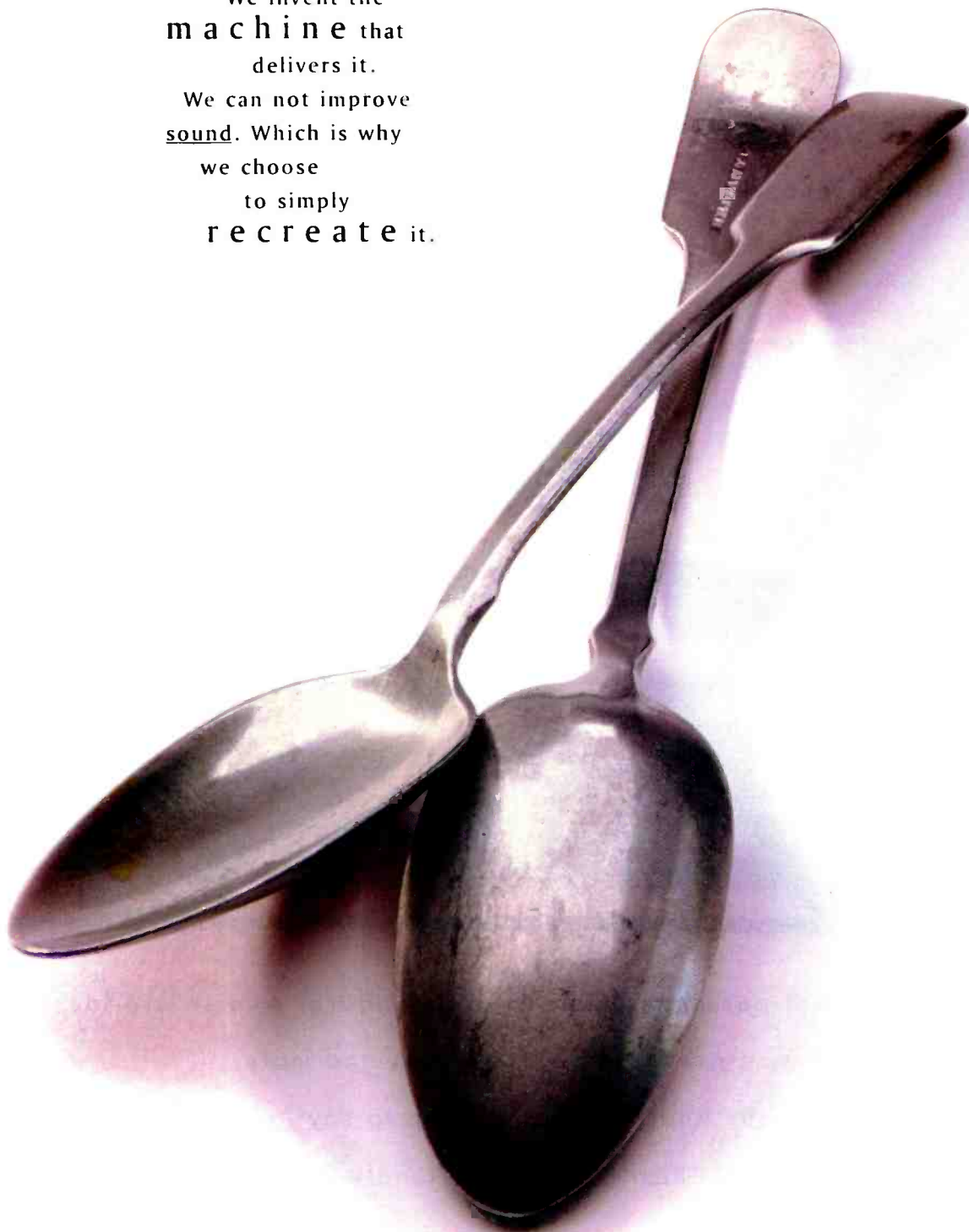
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Cover

Three new stars of home theater: the Sherwood RV-4050R, Pioneer VSX-D3S, and Technics SA-TX1010 A/V receivers. For details, see "Spotlight on Receivers," page 55, and "Digital Surround Comes Home," page 62.

Photograph by Dan Wagner

Stereo Review

INCORPORATING HIGH FIDELITY®

MAY 1995

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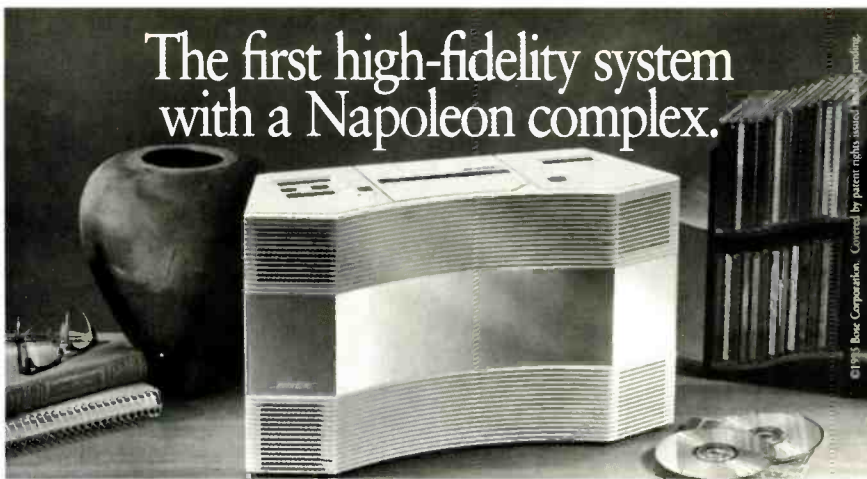
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RLC-1 Review
Julian Hirsch
Stereo Review, Jan '95



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LETTERS

High-Performance Recording

I enjoyed E. Brad Meyer's "High-Performance Recording" in March. I hadn't realized the changes that had taken place since STEREO REVIEW's first article on DCC way back in the November 1992 issue. It would be a shame to see this opportunity to increase the ability to produce "live"-quality recordings go away because of consumer ignorance or apathy. **GARY M. CURRAN**
Norristown, PA

Concerning the sidebar "Ultimate Alternatives: CD-R, Alesis, and ADAT" in E. Brad Meyer's "High-Performance Recording": First, Alesis is not a format but the U.S. manufacturer that developed the ADAT format for digital audio recordings on S-VHS videotape. ADAT machines are currently manufactured by Alesis itself and by Japan's Fostex. Second, the Hi-8 format machine Mr. Meyer mentioned is the DA-88 made by Tascam, the professional recording division of Japan's Teac, which sells for \$4,500. The Alesis ADAT machine originally sold for \$4,000, but the price has dropped considerably. I have used both formats professionally, but for home use, I'd recommend the DA-88 over the Alesis machine because of the smaller size of the Hi-8 tape and its greater recording capacity (100 minutes vs. 25 minutes maximum for ADAT).

GEORGE GEURIN
Digital Editing Services
Dallas, TX

Mr. Meyer himself notified us of the mistake about Alesis and the existence of the Fostex machine after the issue was out the door. Several readers wrote us with corrections.

Was E. Brad Meyer's remark that "... MD copies show audible problems by the third or fourth generation on most music" referring to analog or digital copies, or both? I would think analog generations from MD would not degrade any more than, say, analog copies from CD's. After all, both sources are digital and thus virtually noise-free, unless the "trimming" of the harmonic series is exacerbated in each generation through subsequent loss of overtones. As for digital copies, are they not exact reproductions of the source? Or does ATRAC recompress data during digital copying from, for example, MD to MD? In that case it would seem preferable to make analog copies to begin with.

Second, Mr. Meyer's assertion that "... recordable MD's should last twenty years or more" came as a big surprise. I use MD mainly for recording, editing, and storage of original art-music compositions. New

"classical" music rarely gets a topnotch performance to begin with, hence the editing necessity, and it is rarely reperformed (as Frank Zappa said, "World première usually means last performance"), thus the desirability of a stable storage medium. I chose MD over DAT for a number of reasons, including internal editing capabilities and access time, but primarily because I was led to believe that, unlike any magnetic tape format, recordable MD had virtually unlimited shelf life, being immune to problems like print-through and such. What gives?

KEITH ALLEN
Baltimore, MD

The cause of generational degradation in MD dubbing is the ATRAC data-reduction system. Although ATRAC is nearly transparent in the first generation, artifacts build up rapidly in multiple passes through the coder, which is always active regardless of whether the analog or digital input is used. We're not sure exactly how long recordable MD's will last, but we'd expect it to be many years with decent storage conditions. Forever may be too much to ask, however.

Cassette-Deck Performance

In "High-Performance Recording" in the March issue, E. Brad Meyer wrote about the shortcomings of cassette tape decks, saying that few consumer decks are optimally aligned and calibrated. In the same issue's "Audio Q&A," Ian Masters suggested that misalignment, misadjusted bias, and inaccurate metering may have caused some specific performance problems with analog cassette recordings.

There seems to be an ongoing problem with the "consumer tape decks" in the marketplace! Why is it that after thirty or so years of cassette tape-deck manufacturing, the audio industry has such trouble setting up cassette decks properly? **TONY VASSIL**
Don Mills, Ontario

Good question! Part of the problem is that the precision of azimuth alignment required to prevent significant high-frequency loss is very high on the narrow tape used for cassette recording. Setting it dead-on takes time in the factory, and insuring that the adjustment stays put over time can be difficult, particularly with rotating-head autoreverse mechanisms. And in the past, especially, different manufacturers often used different brands of alignment tapes, with the result that even if a company's decks were consistent with one another in terms of azimuth, they were often not consistent with decks from some other companies. Stu-

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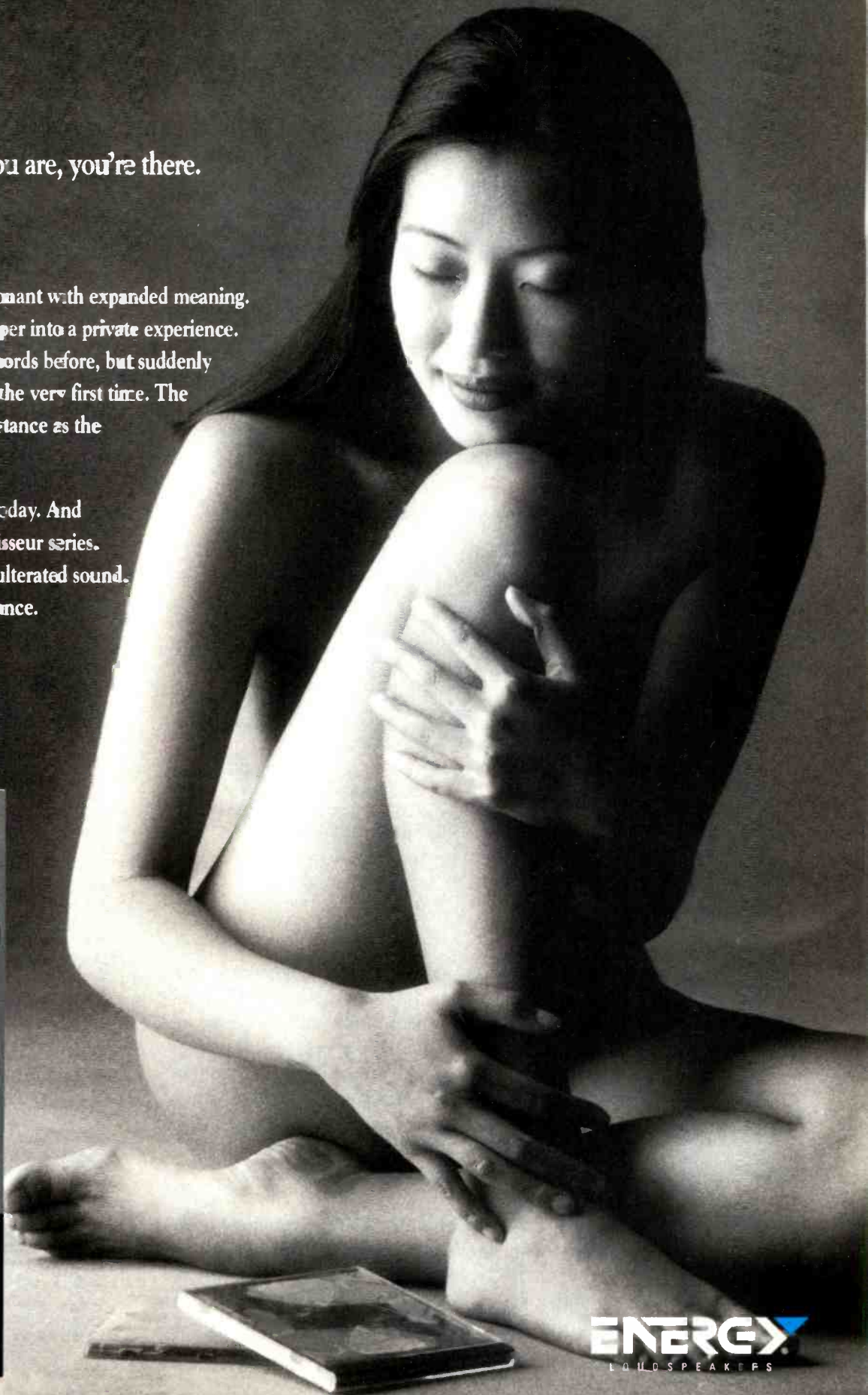
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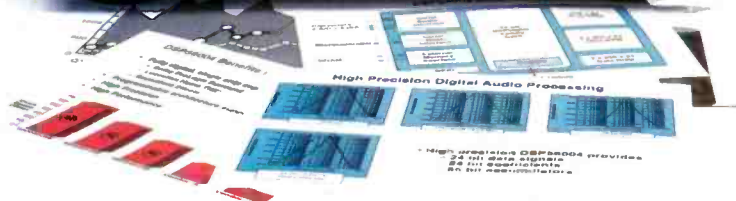


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pid, but true. One ray of hope is that Dolby is tightening up on its licensees about this issue and some others as well, so that the situation will likely improve at least somewhat, especially for decks that are equipped with Dolby S.

Acoustic Miles

In discussing tenor saxophonist Joe Henderson's latest release (March "Jazz" reviews), Chris Albertson erred in identifying Wynnton Kelly, Paul Chambers, and Jimmy Cobb as the rhythm section of Miles Davis's last acoustic group. In the spring of 1963, Davis formed what is now known as his "second classic quintet" with pianist Herbie Hancock, bassist Ron Carter, and wunderkind drummer Tony Williams; he added reedman Wayne Shorter in the late summer of 1964. This group performed straight-ahead acoustic free-modal improvised jazz for five years, until Miles started introducing electric instruments and pop/rock elements in the late 1960's. RICHARD P. CLANCY
Ashland, MA

NAD AV-716 Receiver

David Ranada's review of the NAD AV-716 audio/video receiver in February states, "NAD has distilled down what is absolutely necessary in a basic A/V receiver and has delivered that essence in a high-performance product." I beg to differ — Onkyo did this over a year ago with the TX-SV515Pro, which costs about \$300 less ("street" price). I am convinced that the NAD receiver is simply a repackaged version of the Onkyo. RUSSELL ARCURI
Whitesboro, NY

We asked NAD how similar the AV-716 is to the TX-SV515PRO. The company replied that there are differences in both design and specification tolerances, particularly in the remote control, the tone-control characteristics, and the NAD Link circuitry. Our own tests also suggest differences in the phono stages, and, of course, the manuals are different. Based on performance and usability, we do regard the NAD AV-716 as a strong contender in its class.

Talking Magazines . . .

In February's "Signals" column, Ken Pohlmann asks, "Who is more Isolated from his fellows — the blind man, or the deaf man?" Helen Keller, who was both deaf and blind, observed that blindness isolated her from things, while deafness isolated her from people. Being blind myself, I agree that the first half of this reflection seems quite true.

Mr. Pohlmann's victim is warned that if he chooses blindness instead of deafness, he will never read his favorite magazine again. Well, I read my favorite magazine every month. It is STEREO REVIEW, and I receive it through the Library of Congress Talking Books for the Blind program. Many thanks to STEREO REVIEW for participating in that program. TOM SHULTZ
Newark, CA

... and CD's

I'm sorry to hear that Ian Masters (February "Audio Q&A") is unaware of the existence of a "Talking CD" format. The Philips/Sony "Green Book" standard clearly identifies this format, and compatible players for such CD's are readily available today. The format is more commonly known as CD-I, and it supports multiple audio quality levels and playing times ranging from 73-plus minutes of standard CD-quality stereo to around 20 hours of mono AM-radio-quality audio. The latter was specifically included for its ability to provide exactly the type of spoken-word recording that Mr. Masters was asked about. If any company wished to come out with such a disc, it would be playable on all CD-I players worldwide.

DAVID L. KALEITA
Sterling Heights, MI

Best and Worst of 1994

Let me get this straight: One of your criteria for the best records of the year is sonic excellence. So why was Green Day in the best category (February, "Record of the Year Awards") and Pink Floyd in the worst ("Disgraceland")? CHRIS KULHANEK
Lowell, MI

I can agree with nine out of ten of your critics' selections as "Worst Recordings of 1994," but I find that the B.B. King/Diane Schuur recording is at least listenable. What I couldn't believe is that you didn't include Pat Metheny's "Zero Tolerance for Silence." I have not found more than ten seconds of "music" on the complete disc. It has become a joke among my friends, who are all extremely glad I purchased it — and they didn't. JIM DEGREVE
Moline, IL

Save the Planet

The February "Bulletin" mentioned the environmentally-safe-packaging policy instituted by Celestial Harmonies, and the editors expressed the hope that our 3½-pound catalog was made of recycled products. I want to assure you that we use recycled cardboard, recycled paper, and nontoxic ink in the production of this catalog.

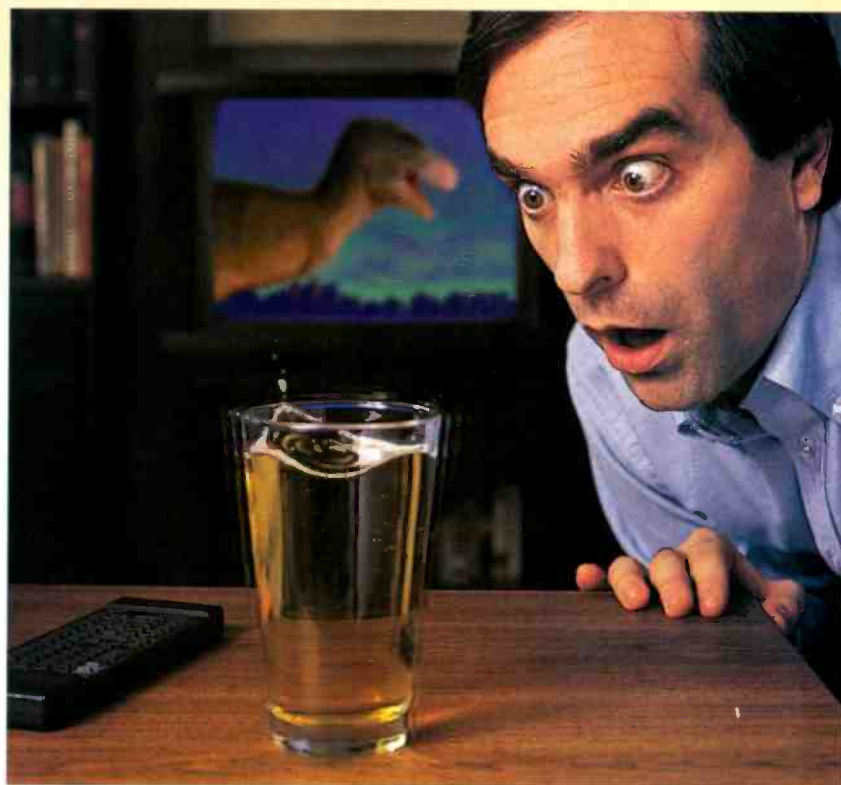
KATHRYN A. RISER
Executive Vice President
Celestial Harmonies
Tucson, AZ

Correction

After the April issue went to press, Polk Audio informed us that the price of its Signature Reference Theater speaker system, included in "CES Show Stoppers," was being raised to \$7,995. □

We welcome your letters. Please address correspondence to Editor, Stereo Review, 1633 Broadway, New York, NY 10019. You should include your address and telephone number for verification. Letters may be edited for clarity and length.

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NEW PRODUCTS

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Designed and manufactured in Europe, Jamo's striking THX-1 home theater speaker ensemble comprises three 21½-inch-tall LCR One front speakers, two wall-mountable Surround One dipole speakers, and a pair of 30-inch-tall Sub One bass modules, each of which houses a 12-inch driver and is rated down to 30 Hz.

The LCR One's have two 5-inch woofers, two 3-inch midrange drivers, and a 1-inch textile-dome tweeter each and can be mounted on a wall or placed atop the bass modules. Finish is black ash. Price: \$3,995. Jamo Hi-Fi USA, Dept. SR, 425 Huehl Rd. #8, Northbrook, IL 60062.

Circle 120 on reader service card



▼ TECHNICS

The first of its kind, the Technics SL-VM500 Video CD changer is essentially a five-disc carousel CD changer that also plays Video CD's, which combine up to 74 minutes of digital audio and VHS-quality (MPEG-1) video on a CD-size disc. (About eighty titles are currently available in the new

format.) The changer can search discs by track or chapter number and displays titles and artist names on the TV screen. Up to four discs can be changed while one plays. Price: \$600. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

Circle 122 on reader service card



▲ PROSCAN

ProScan's PS80690 projection TV boasts an 80-inch screen — the largest ever in a rear projector. The set includes a Dolby Pro Logic surround-sound decoder with line-level speaker outputs, a 55-watt amp that powers seven internal speakers, and a new optics system said to boost

brightness more than 50 percent over previous ProScan projection sets. Overall dimensions of the cherry-finish cabinet are 75 x 69 x 32 inches. Price: \$8,499. ProScan, Thomson Consumer Electronics, Dept. SR, 10330 N. Meridian St., Indianapolis, IN 46290-1024.

Circle 121 on reader service card



▲ FISHER

A follow-up to the popular Studio 24 twenty-four-disc CD changer, Fisher's DAC-6015 Studio 60 holds sixty CD's in a vertical carousel and has an optical digital output. Discs can be stored under one of seven preprogrammed music

categories, or you can create your own labels, which are stored alphabetically in memory. Disc searches can be done using the supplied remote. Price: \$500, Fisher, Dept. SR, 21350 Lassen St., Chatsworth, CA 91311-2329.

Circle 123 on reader service card

NEW PRODUCTS

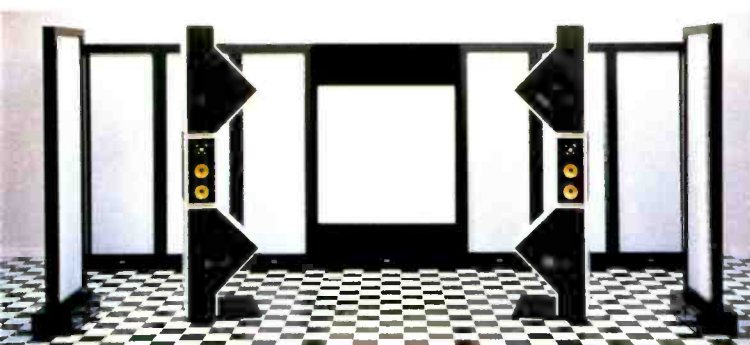


▲ ACOUSTIC PROFILES

Acoustic Profiles' modular Prelude speaker line begins with two bookshelf systems, shown on stands, the 11½-inch-tall two-way CA1 (\$690 a pair) and the dual-woofer, 18¾-inch-tall CA2 (\$990 a pair). These can be mated with either of two "woofer bases": the 25-inch-tall single-

driver CA-W1 (\$880 a pair) or the 30-inch-tall two-driver CA-W2 (\$1,280 a pair), both rated down to 30 Hz; each has a chamber for mounting an optional amp. Finish is black woodgrain vinyl. Acoustic Profiles, Dept. SR, 25 Esna Park Dr., Markham, Ontario L3R 1C9.

Circle 124 on reader service card



▲ SYSTEM ANALYSIS

System Analysis acoustic panels, shown here with B&W Matrix 800 speakers, include the Wavelength Absorbing Panel (flanking the speakers, \$675 to \$875 each plus \$100 for stand), the Quadratic Theory Residue Diffusor (center of back wall, \$950 to \$1,150), and the Wavelength Absorbing Linear

Structure (on both sides of the diffusor on back wall, \$1,025 to \$1,425 in black). Prices depend on panel size. Available direct (shipping included) from System Analysis, Dept. SR, P.O. Box 2246, Tempe, AZ 85280; phone, 602-438-8012.

Circle 127 on reader service card



▲ ALTEC LANSING

Designed to bring surround sound to small spaces, Altec Lansing's PHT 5 powered Personal Home Theatre system comprises a 35-Hz-capable bass module with a built-in 40-watt amp and two 18-inch-tall mini towers, one of which houses a 15-watt amp and

a Dolby Pro Logic decoder. Two of the four drivers in each tower are angled, one inward to create a center image and one outward for surround sound. Price: \$500.

Altec Lansing, Dept. SR, P.O. Box 277, Milford, PA 18337-0277.

Circle 125 on reader service card



▲ SPEAKERCRAFT

The Weathercraft WS550 outdoor speaker from SpeakerCraft combines two 5¼-inch woofers and a pivoting tweeter in a 16-inch-tall weatherproof thermoplastic cabinet with an aluminum grille and integral

mounting bracket. Bandwidth is given as 55 Hz to 22 kHz. The speaker carries a lifetime warranty. Price: \$580 a pair. SpeakerCraft, Dept. SR, 1650 7th St., Riverside, CA 92507.

Circle 126 on reader service card

▶ OMNIMOUNT

Speakers can be positioned at any angle with OmniMount's Universal Mounting Kit, which includes two pivoting brackets and hardware for securing them to a variety of surfaces. Price: \$60 (8-pound limit) or \$80 (15-pound limit). OmniMount Systems, Dept. SR, 1501 W. 17th St., Tempe, AZ 85281-6225.

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cabinets. We use non-
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quell unwanted cabinet
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**Preconception #4:
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NEW PRODUCTS

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The Glass Racks Entertainment Center includes two 4-foot audio racks with wire-concealing rear columns and a video stand with a 3/8-inch-thick glass top that's designed to hold a 35-inch TV. The tempered-glass component shelves are 1/4 inch thick, and the

metal supports can be finished in black, red or gray granite (shown), or white sand. Available by mail for \$599 (plus shipping) from Glass Racks, Dept. SR, P.O. Box 50726, St. Paul, MN 55150; phone, 612-452-7099.

Circle 129 on reader service card



◀ AUDIOSOURCE

AudioSource's VS Four center speaker has three magnetically shielded 4-inch woofers; the central one is outfitted with a coaxially mounted 5/8-inch polycarbonate tweeter that plays above 5 kHz. The 19 1/2-inch-wide cabinet is slightly bowed to match the curvature of most TV screens

and finished in black ash-grain vinyl. Bandwidth is given as 60 Hz to 20 kHz, sensitivity as 93 dB, and power-handling capability as 80 watts, and impedance as 8 ohms. Price: \$179. AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.

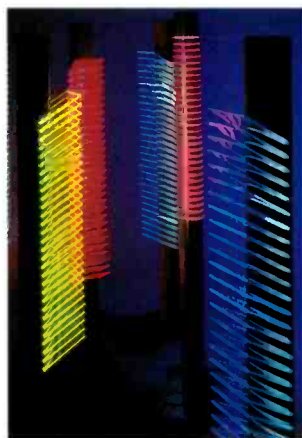
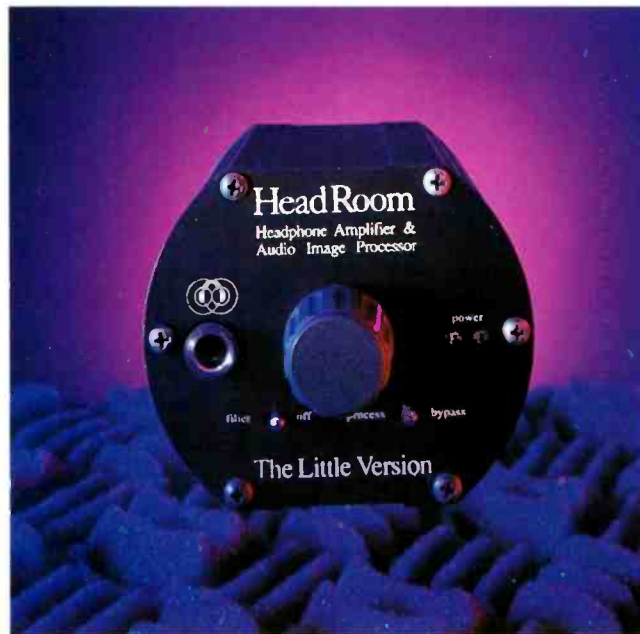
Circle 130 on reader service card

HEADROOM ▼

An AC-only version of HeadRoom Corp.'s AC/DC-powered HeadRoom headphone amplifier and image processor, the Little HeadRoom contains a 0.5-watt amplifier and circuitry that is said to reduce listening fatigue by making headphones sound more

natural. It has a pair of standard RCA line-level inputs. Available factory-direct for \$199 (plus shipping) from HeadRoom Corp., Dept. SR, P.O. Box 6549, Bozeman, MT 59771; phone, 1-800-828-8184.

Circle 131 on reader service card



◀ NEONNISH

The 61-inch-tall Neonnish CD 200 storage tower features a fluorescent light that illuminates the sixty iridescent panels (available in orange, blue, and green) that hold CD's or cassettes. Six stone finishes are offered, including black, rose, and teal. Available by mail for \$150 (plus shipping) from Neonnish, Dept. SR, 1106 Carby, Houston, TX 77037; phone, 1-800-557-6366.

Circle 132 on reader service card

LAMM AUDIO ▶

Lamm's M1.1 mono amplifier features a hybrid vacuum-tube/solid-state design with a bias switch for maintaining Class A operation for loads between 4 and 16 ohms. It's rated to deliver 100 watts into 4 or 8 ohms, 200 watts into 2 ohms (50 watts Class A), and 300 watts into 1 ohm (25 watts Class A). Price: \$6,690. Lamm Audio, Dept. SR, 185 Ave. S, Brooklyn, NY 11223.

Circle 133 on reader service card





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—Charles O'Meara
Absolute Sound
Winter Park, Florida

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Writing in the February 1995 issue of Stereo Review, Technical Editor David Ranada said "You'd have to spend twice as much to get significantly better than the AV-716's Dolby Pro Logic performance..." In addition to its sound, the review praised the 716 AV Receiver as being one of the easiest to operate—an NAD hallmark.

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that electrically "adjust" the effective length of its arms for "exceptional performance" on all channels (Nos. 2 through 83). Price: \$40. Terk Technologies, Dept. SR, 65 E. Bethpage Rd., Plainview, NY 11803.

Circle 134 on reader service card



◀ B&W

Earth-shaking bass down to 17 Hz is the aim of B&W's Model 800ASW powered subwoofer, which packs a 12-inch driver, an adjustable crossover, and a 200-watt amp in a 20 x 17 x 23-inch black or walnut veneer cabinet with a black grille. The sub has an automatic turn-on circuit. Price: \$1,600. B&W Loudspeakers, Dept. SR, 54 Concord St., North Reading MA 01864-2699.

Circle 136 on reader service card

▼ SONY

With Sony's MDS-302 MiniDisc deck you can record a string of songs and resequence them by simply pressing a few buttons. It has five editing modes — divide, combine, move, and single- and all-track erase — a shuffle-play

mode, disc/track titling, and twenty-five-track programming. A Smart Space feature automatically limits "dead air" between tracks to 4 seconds. Price: \$700. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656.



JBL ▲

JBL's JCS-1 "affordable" home theater package includes a pair of 32-inch-tall three-way speakers, a 14¼-inch-wide center speaker, and a pair of 12-inch-tall surround speakers — all finished in black woodgrain vinyl. Respective low-frequency limits are given as 42,

70, and 80 Hz, maximum power-handling capability as 150, 75, and 80 watts. All three front speakers are magnetically shielded. Price: \$650. JBL, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797.

Circle 135 on reader service card



KOSS ▲

Koss's Quiet Zone 2000 noise-canceling headphone system is said to reduce noise from jet engines, lawn mowers, and many other sources by 10 to 15 dB. Tiny microphones pick up low-frequency noise and send it to a processing module (right),

which generates an out-of-phase signal that cancels the noise. Two AA batteries are said to provide up to 200 hours of operation. Price: \$200. Koss, Dept. SR, 4129 N. Port Washington Ave., Milwaukee, WI 53212.

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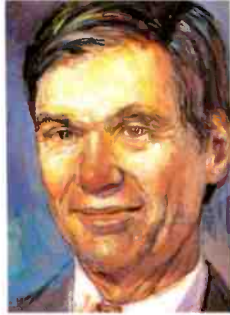
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AUDIO Q & A

BY IAN G. MASTERS

Four-Channel Records

Q *I use my home theater system for music listening as well as movies. I have many old SQ four-channel recordings that I would like to listen to. Are the surround-sound retrieval systems built into today's audio/video receivers close to the original SQ decoders?*

WARREN W. KEATS
Milwaukee, WI

A Dolby Pro Logic does indeed borrow some of the technology of the early matrix four-channel systems, but it differs considerably in the details. For one thing, quaraphonic systems assumed that there would be two speakers at front and two in back, in the corners of the listening space. Dolby Surround uses three channels across the front and a mono surround channel (although it's usually fed to two speakers). Thus, although both systems tinker with phase to "position" the various sounds, the specifics are not the same. But you should still experiment — I've found that some of

those old SQ discs sound very interesting and appealing when played through a Dolby Pro Logic decoder. Just remember that what you hear has nothing to do with what the recording engineers intended.

Shifting Ground

Q *I am concerned about eliminating a slight buzz heard through my speakers by changing the grounding. Exactly what are the benefits of running a wire from electrical gear to a water pipe or electrical box? Should the chassis of the various components be connected to one another, and if so, how?*

ROBERT HERRERA
Miami, FL

A Many systems are adequately grounded right from the start, so changing things around is really necessary only if you have a problem, as it seems you do. If a component has the third, U-shaped prong on its power plug, or if it's polarized by means

of different-size prongs, you should be okay on that end (though in rare cases putting a three-to-two "cheater" plug on a three-prong plug makes things better). If the plug is the old-style equal-prong sort, you can often reduce the hum simply by inverting the plug. If that doesn't do the trick, then it's time to try running a wire from the chassis of one of your components to an electrical switchbox or a cold-water pipe.

Running separate ground wires between your components may actually make things worse. Normally, you don't have to do anything — the patch cables connecting one component to the next also link up their chassis. But if there are two separate ground connections between a pair of components (or if they are each independently connected to an external ground), a "ground loop" can sometimes occur, injecting hum or other noise into the system. Ground loops are notoriously difficult to track down and cure. You may have to unhook the components from each other one at a time and then mod-



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ify the patch cables to disconnect the shield at one end when you find the offending link.

Subwoofer Amplifier

Q My main speakers lack adequate output below 50 Hz, so I'm planning to build a powered subwoofer to complement them. As my receiver doesn't have line-level outputs, I need an amplifier that accepts speaker-level signals. Where do I find one?

STEVE BOWMAN
Richmond, KY

A Almost anywhere. You don't need a special amplifier to operate a subwoofer from speaker-level signals. A simple volume control inserted between the receiver's output and the subwoofer amplifier's line-level input can reduce the level by the appropriate amount. In fact, that's pretty much what the makers of powered subwoofers do when they provide a speaker-level input.

Room Equalization

Q I have had a graphic equalizer for some years, but no matter how I adjusted it, I never really felt the sound was quite right. Recently, however, I bought a sound-level meter and mounted it on a tripod where I normally sit while listening to music. I played the spot frequencies from a test CD and adjusted the equalizer to make the response flat. I think it made a great deal of

difference, and I'm enjoying my music as never before. Is this method of setting up a system common?

DAVID S. WENDT
La Porte, IN

A Probably not common enough, but it's a reasonable way to go about it. In fact, it's really the main reason equalizers were invented, although most people use them today to add punch — or whatever — to their sound rather than to compensate for room problems. Just be aware that such fine-tuning is really valid only for the one listening position where the readings were taken.

FM Settings

Q My old FM tuner had settings for 25 and 75 microseconds, which are missing from my new digital tuner. When I use the older tuner, which setting should I use? And what do they mean?

PAT RIZZO
University City, MO

A The equalization used in FM broadcasting is called "pre-emphasis" at the sending end and "de-emphasis" at the receiving end, and it's specified in terms of time constants rather than frequency. The standard is 75 microseconds, and that's what you should use. The 25-microsecond alternative dates from the brief lifetime of Dolby FM, which used 25-microsecond pre-emphasis in conjunction with Dolby B noise reduction. Your tuner is thus a bit of a cu-

riosity, but this feature has no use today except as a topic of conversation.

VCR for Digital Audio

Q In the section of my new VCR's manual that discusses the different possible set-ups, it talks about how to hook the machine up to a digital audio processor. It appears that such a device would perform analog-to-digital (A/D) and digital-to-analog (D/A) conversion and record the digital audio on the video track of the tape. Does such a machine exist?

AGIM PEROLLI
New York, NY

A It certainly did in the early 1980's. Back then Sony introduced the first of several external digital processors designed to convert a VCR into an audio recording device. These devices, such as the classic PCM-F1, performed the A/D conversion and then formatted the data to emulate a video signal, sync pulses and all. A few other companies made similar products, notably Technics and Sansui, but as far as we know none of these processors are still in production. There may be a few available secondhand.

If you have a question about audio, send it to Q&A, Stereo Review, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.

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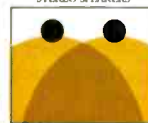
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SIGNALS

BY KEN C. POHLMANN

Living in the Past

In the early days of audio recording, a recorded performance was regarded as a short-lived business transaction. The master disc or cylinder was used to replicate retail copies, and when the public's demand waned, the master was destroyed, or carelessly stored without regard for longevity. Later, the historical and commercial importance of a master recording became apparent. Companies observed that in some cases demand for a performance was sustained, or it recurred. And so the reissue was born. A master recording had intrinsic value that could be realized again and again.

Today, with the advent of the compact disc, we live in a golden age of recording. The output of newly recorded music of outstanding artistic and technical quality is staggering. Equally impressive is the volume of reissued recordings. Many long-lost performances have been unearthed and given new life as reissues. If you are stuck in a rut, listening to the same old tunes, it's not the fault of the recording industry.

But CD has also raised the bar for sound quality. Most consumers won't tolerate the snaps, crackles, and pops that passed for normal in the LP era. People want to buy the great recordings of the past, but only if they feature the higher sound quality of the present. Herb Belkin was one of the first to identify this market demand. In 1977, his Mobile Fidelity Sound Lab (MFSL) started acquiring the best possible master recordings of popular albums, critically transferring them prior to duplication, and manufacturing the releases on the highest-quality media.

Most master tapes exist as many different copies, of different generations, equalized for different replication media. A tape originally used for LP replication, for example, might be a third-generation analog copy, with boosted low- and high-frequency response. The Mobile Fidelity engineers go out of their way to avoid tapes like that, instead sleuthing through record-company vaults looking for first-generation masters. In some cases, record companies have misplaced or mislabeled the originals. Occasionally, to find a clean copy, the MFSL engineers must knock on the doors of the musicians themselves, seeking their personal session tapes.

Once the cleanest master is identified (and a reissue deal is inked with the record company), the MFSL engineers shift from detective work to archaeology. They carefully audition the master tape, physically repairing any damage and ascertaining how it should be played to recover the greatest possible amount of sonic information it contains. Their reproduction tape machines use customized circuits, and the heads are aligned to match the original master recorder. For example, if the recording head of the master recorder was misaligned, the reproduction head of the MFSL machine must be similarly misaligned to play the tape properly.

The output signal is passed through MFSL's proprietary GAIN system and digitally rerecorded. Like most mastering transfer systems, GAIN is designed with a "straight-wire" philosophy, but unlike some transfer systems, it does not perform signal processing such as noise removal or quantization noise shaping. (In the case of MFSL's LP's, the signal path

psychoacoustics to suppress noise in the 1- to 5-kHz range, where it is most obvious, while increasing it above 15 kHz, where it cannot be perceived. The result is perceived 20-bit performance from 16-bit data.

Interestingly, although most reissue projects try to capture or improve the sound of "ancient" analog masters, even the more recent past can be tweaked. For example, many digital recordings made in the early Eighties by the jazz label DMP were hailed as sonic miracles. But because the sampling frequency of DMP's master digital recorder differed from the CD standard (50.4 kHz versus 44.1 kHz), the signal transfer was done in the analog domain. Now, engineer Tom Jung is using the new 20-bit digital transfer techniques to capture more of the sound from those old digital masters. The resulting "20-Bit Original Recordings" are being reissued on CD to critical acclaim.

In short, we now have the luxury of reinventing the past. Old analog and 16-

People want the great recordings of the past,
but only with the sound quality of the present.

to the cutting lathe is similarly minimal.)

The resulting recordings, often in limited editions, are revelatory. Indeed, some MFSL releases are collectibles that command high prices among aficionados. Whether it is Aretha Franklin, Alan Parsons, or Jean Michel Jarre, the MFSL version usually beats the original commercial version by a wide margin.

Of course, success always inspires imitation. Many other record companies have developed technology to improve their transfer techniques. A number of them now use 20-bit analog-to-digital converters when transferring old analog recordings for CD release. They argue that even though CD is a 16-bit medium, the dynamic range of a good analog recording, including the signal buried in the analog-tape noise floor, exceeds 16 bits. By using a 20-bit converter and noise shaping, they claim, that wider dynamic range can be successfully conveyed with 16-bit CD data. Noise shaping is a fine example of digital signal processing, exploiting the ear's own physiology and

bit digital master tapes can be reissued with 20-bit sound quality on 16-bit CD's. Similarly, today's 20-bit master tapes will one day be reissued with fidelity higher than that of today's best CD's. In other words, in the future everything will sound better, including the past — which, of course, will include our present.

That kind of time-tinkering leads to some odd hypotheticals. Consider this problem: Two twins make identical recordings. One twin takes his recording and boards a rocket ship that travels at the speed of light. The second twin and his recording remain on earth, where twenty years elapse and audio technology improves. The youthful-looking first twin reappears in his rocket ship and is greeted by his graying brother. They compare recordings. Which recording is older? Which one sounds better?

The Twin Paradox was one of Albert Einstein's favorite examples of relativity, but he never reckoned with another important paradox: our incessant craving for higher fidelity. □

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TECHNICAL TALK

BY JULIAN HIRSCH

Unrealistic Expectations?

I have often wondered at the widely divergent opinions expressed by different people listening to similar or identical music systems. It is sometimes difficult to explain such a lack of agreement among people who are presumably hearing the same program.

This phenomenon was brought to my attention by a recent letter from a reader, detailing his quest for what he considered to be reasonable and attainable audio performance. The writer, a retired chairman of the music department at a liberal-arts college and obviously knowledgeable in matters musical, is searching for a means of reproducing music in a believable manner through his home audio system.

Lacking an electronics background, he selected a top-end "rack" system from a highly regarded manufacturer as the core of his home music installation. Initially the results were satisfactory, especially with piano music, but as he grew more familiar with the system's sound, he gradually became dissatisfied with what he heard, particularly with orchestral music (apparently he listens to classical music exclusively).

At this point (roughly in the late 1980's), he entered the audiophile world, embarking on a search that eventually took him into the showrooms of many dealers. Realizing from his reading of audio magazines that the loudspeaker was the most critical component of a music system, he eventually decided to upgrade with a pair of medium-price speakers from a small but highly regarded manufacturer. Unfortunately, the company was then in the process of changing management, and, as he puts it, he "got cold feet" about the deal.

A friend then recommended a reputable audio dealer, who sold him a pair of speakers from a very well-known manufacturer. Although my experience with that company's speakers has been uniformly excellent, he was soon dissatisfied with the sound. The same dealer then upgraded him to a pair of excellent speakers from another highly regarded company, which he still has, but, as he puts it, "I don't like them."

His objection to the sound of these speakers (which cost more than \$1,000 a pair) is that, although they are fine with the slow movements of concertos, for example, when the music becomes loud and dramatic the sound tends to have "blare and growl," as he puts it, with a general shrillness.

The dealer logically concluded that the rack system, with its probably inadequate amplifier of uncertain pedigree, could hardly do justice to the speakers he was then using (a conclusion with which I thoroughly agree). Surely that was the weak link in the system.

The dealer decided that the amplifier was not powerful enough and sold my correspondent a suitable receiver from a manufacturer of impeccable credentials. Unfortunately, that upgrade also failed to solve the problem. The dealer then suggested that a new and better CD player would cure the system's ills. Apparently it

premises). But a possible explanation lies in the relationship between the room dimensions, its acoustic treatment, and the placement of the speakers themselves. Those factors can have a major effect on the final sound.

I am reminded of my own experience, some thirty-odd years ago, when an acquaintance asked me to suggest speakers for a stereo installation in his new house. I recommended an excellent moderate-price speaker, which I used in my own home. When he got the speakers, I checked them out in my system, and they sounded just like my own. But after installing them, he told me that they sounded terrible! When I went to his house, I had to agree that they were nearly unlistenable. Even though they were mounted on shelves on the wall of a sparsely furnished room, with lots of window area, it was hard to believe that these speakers, which were noted for their excellent

There are inevitably limitations to what can be achieved in a home audio system. Failure to appreciate that can lead to disappointment.

did not. Having failed with conventional approaches to the problem, he eventually sold my correspondent high-grade speaker cables, which, as you might expect, made not a bit of difference.

Can it be that this listener hopes — and perhaps expects — that a good music system (which his appears to be in its most recent form) will be capable of producing the overall sound character of a live performance? I certainly agree with that goal, though it has never been achieved and rarely approximated with any degree of success. I have found speakers from both of the manufacturers from which he has bought to be generally as good as they come in his price range. To get substantially better performance it would probably be necessary to invest at least twice as much in the speakers, with no assurance that the results would be significantly enhanced. There are inevitably limitations to what can be achieved in a home audio system.

I cannot solve problems like this one at a distance (and perhaps not even on the

bass, could deliver such a piercing, shrill sound.

In that case, the obvious cure was to install carpeting and put the speakers on the floor, close to a wall, to improve their bass performance. When that was done, they sounded more or less as they did in my home, although the two acoustical environments were not at all alike. I don't know if my correspondent has a similar situation, but the fact is that sound quality can be profoundly affected by the entire surrounding environment, which has to be considered along with the equipment.

Another question to be considered is whether he simply has unrealistic expectations for his audio system. No matter how much money and effort is invested in a home music system, it can never perfectly recreate orchestral sound in a living room. The best one can hope for is a pleasing reproduction that carries the essence of the live performance without pretending to be a facsimile of the original. Audio's Holy Grail has yet to be discovered, I'm afraid. □



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TEST REPORTS



Denon AVR-1500 Audio/Video Receiver

DAVID RANADA • TECHNICAL EDITOR

The AVR-1500 might look like a typical midprice A/V receiver, and in many ways that's exactly what it is, standing, as it does, precisely at the midpoint of Denon's A/V receiver line. But in a couple of very important respects it is more top-drawer than run-of-the-mill.

Let's start with the typical stuff first. The AVR-1500's amplifier section is rated to deliver 70 watts per channel in stereo operation. No main-speaker ratings are given for surround operation, but the center-speaker output is rated at 70 watts and the surround outputs (called "rear" by Denon) at 20 watts. There are A/V connections for two play-only video sources (laserdisc and videogame, for instance) and one VCR. There is a single video-monitor output. Audio-only connections are limited to a moving-magnet phono cartridge, a CD player, and one tape deck (labeled DAT/TAPE), although you can always use any free A/V input for additional line-level audio sources.

All source-component connections

are through phono connectors, there being no S-video provisions. The source audio connectors are in vertical array directly around the right rear corner (looking from the front), a good alternative to a horizontal array. But the video connectors for A/V sources are separated from the corresponding audio connectors, and the tape-deck and VCR audio connections are also intermingled confusingly (at least to me).

DIMENSIONS

17 1/8 INCHES WIDE, 6 3/8 INCHES HIGH,
16 3/8 INCHES DEEP

WEIGHT

23 1/4 POUNDS

PRICE

\$750

MANUFACTURER

DENON, DEPT. SR, 222 NEW RD.,
PARSIPPANY, NJ 07054

Multiway binding posts are provided for connecting A and B pairs of main speakers. They most easily take stripped wires and will accept single or dual banana plugs as well, but not spade lugs. The center and surround speaker outputs are spring connectors. A line-level, wideband, mono subwoofer output is helpfully provided, as is a line-level center-channel output.

Additional rear-panel facilities include spring connectors for an AM antenna (a loop antenna is supplied) and an F connector for an FM antenna. There are two switched AC convenience outlets, into which the user is advised not to plug "hair driers, etc." (in case you were thinking of setting up a surround-sound system in your bathroom).

Most of the front-panel controls serve familiar functions. Included among them are buttons for AM and FM station tuning and programming the thirty-two available memory presets. There are separate on/off buttons for two main speaker pairs, as well as for the center and surround speakers.

The row of buttons directly underneath the display window selects the surround-sound processing mode. There are, luxuriously, nine modes to choose from: Dolby Pro Logic, Wide

TEST REPORTS

Screen, Live Surround, Super Stadium, Mono Movie, Rock Arena, Jazz Club, Classic Concert, and Matrix. Each has some characteristics that are adjustable via the remote handset. In Dolby Pro Logic and Matrix operation, you can set the surround-channel delay time. In the other modes, you can variously turn the processing on and off, adjust effect level, and adjust the control for the apparent "size" of the synthesized space in five steps. The soundtrack-oriented modes (Dolby Pro Logic, Wide Screen, and Live Surround) enable manipulation of the center output level.

Missing from the front panel is the usual array of input-selector buttons. With the AVR-1500 you select inputs by pressing the large audio and video buttons located next to the volume

knob. They cycle through the available inputs in round-robin fashion, which would be an annoyance if the remote didn't have separate selector buttons for each source. Convenience is further enhanced by three Personal Memory buttons, present on both the front panel and the remote, that store input and accompanying surround-mode selections, enabling one-touch selection and setup for three sources. Adjustments to the surround-mode settings are not saved, however.

One of the AVR-1500's two most distinctive features is its incorporation of RDS (Radio Data System). RDS enables automatic tuning and memorization of FM stations by program type (news, soft rock, classical, etc.) as well as display of station call letters, local traffic conditions, and other

text messages, which appear in the front-panel display (not on any attached TV monitor, since the AVR-1500 does not provide on-screen displays). For any of these features to be operative the tuned station must be transmitting RDS signals; the AVR-1500 has an automatic scanning mode to search for such stations. RDS is very useful in mobile applications, but I imagine the traffic messages could also be useful in planning your route before you leave home if you could find an RDS station transmitting them. Most reception areas don't have enough receivable stations, much less RDS stations, to make the automatic station-format selection system very useful at home.

In lab tests, the AVR-1500 generally did well. The output power into 8-ohm

MEASUREMENTS

AMPLIFIER SECTION

All data for two-channel stereo operation

Output at clipping (1 kHz)

8 ohms 98 watts

4 ohms 64 watts

Clipping headroom (re rated 70 watts)

8 ohms 1.5 dB

Dynamic power

8 ohms 156 watts

4 ohms 81 watts

Dynamic headroom (re rated output)

8 ohms 3.5 dB

Distortion at rated power (70 watts, 1 kHz)

8 ohms 0.07%

Sensitivity (for 1-watt output into 8 ohms)

CD 16.5 mV

phono 0.27 mV

Noise (re 1-watt output, A-wtd.)

CD -82.5 dB

phono -75 dB

Phono-input overload (1-kHz equivalent)

20 Hz 171 mV

1 kHz 168 mV

20 kHz 119 mV

Phono-input impedance

..... 46,000 ohms in parallel with 166 pF

RIAA phono-equalization error

20 Hz to 20 kHz +0, -0.35 dB

Frequency response (20 Hz to 20 kHz)

tone controls centered +0.8, -0.5 dB

tone controls off +0.08, -0.5 dB

Tone-control range

100 Hz ±9 dB

10 kHz +8.5, -10 dB

TUNER SECTION

All data for FM only except frequency response

Sensitivity (50-dB quieting)

mono 30 dBf

stereo 48 dBf

Signal-to-noise ratio (at 65 dBf)

mono 78 dB

stereo 67 dB

Distortion (THD+N at 65 dBf)

mono 0.37%

stereo 3% (mostly pilot leakage)

Capture ratio (at 65 dBf)

..... 1.8 dB

AM rejection

..... 80 dB

Image rejection

..... 48 dB

Selectivity

alternate-channel 58 dB

adjacent-channel 6 dB

Pilot-carrier leakage

19 kHz -35 dB

38 kHz -43 dB

Hum (120 Hz)

..... -82 dB

Channel separation

100 Hz 38 dB

1 kHz 40 dB

10 kHz 38 dB

Frequency response

FM 30 Hz to 15 kHz +1.1, -0.3 dB

AM 35 Hz to 3 kHz +1, -6 dB

DOLBY PRO LOGIC PERFORMANCE

Frequency response (tone controls centered)

left, right 20 Hz to 20 kHz +0.85, -0.83 dB

center 20 Hz to 20 kHz +0, -0.31 dB

surround 45.8 Hz to 5.6 kHz +0, -3.0 dB

Output at clipping (one channel driven)

left, right 112 watts

center 110 watts

surround 20 watts

Noise (re 1-watt output, A-wtd.)

left, right -76.2 dB

center -74.8 dB

surround -68.5 dB

Distortion (THD+N, 1 kHz, 1-watt output)

left, right 0.023%

center 0.03%

surround 0.07%

Surround decoder input-overload margins (at 1 kHz)

left, right (re 2-volt input) -0.6 dB

center (re 1.414-volt input) 2.3 dB

surround (re 1.414-volt input) 1.6 dB

Surround-channel noise-reduction calibration error

re Dolby level (247.5 mV) +1 dB

Channel separation (100 Hz to 7 kHz)

left output, right driven >36 dB

left output, center driven >28 dB

left output, surround driven >33 dB

center output, left driven >39 dB

center output, surround driven >44 dB

surround output, left driven >41 dB

surround output, center driven >44 dB

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loads generously exceeded Denon's specification and was enough for quite ample playback levels, though current limitations slightly restricted its maximum output into lower impedances. Like the last Denon A/V receiver we tested, the AVR-1500 had non-flat frequency response in the front left and right channels when the tone controls were set to their center detents. The deviations were small but extended over a large enough part of the audio band to be audible. Although the AVR-1500 does have a tone-control defeat button on both the front panel and the remote, it works only during stereo operation; the tone-control circuitry cannot be switched out in any of the surround modes. You can, however, virtually eliminate its errors by turning both the bass and treble controls to their half past one o'clock positions.

Tuner performance, apart from exceptionally good AM rejection in the FM section, was average overall, as was the measured performance in Dolby Pro Logic operation. In our listening tests, the surround-channel noise level with Pro Logic was poised on the edge of distracting audibility. It crossed over that line in the Matrix surround mode, thanks to a 3-dB decrease in measured signal-to-noise ratio (S/N) and an equally distracting boost of the surround-channel lower-treble response, which only emphasizes how valuable each decibel is when it comes to noise.

As usual with components providing multiple surround-processing modes, you should not try too hard to match musical genres to the names of the modes. All the modes, even the movie-oriented ones, can provide useful spatial enhancement depending on the music and your willingness to fine-tune the parameters. We found the "small" room-size setting of the Classical mode useful with some pop music, for example. The two modes besides straight Pro Logic intended specifically for soundtracks, Wide Screen and Live Surround, added delayed artificial reflections to the front channels, which, as always in our experience with such processing, greatly reduced the intelligibility of dialogue. I'd stick to Pro Logic for movies.

Fortunately, experimentation with



the processing modes is greatly simplified by the AVR-1500's second unusual feature: its remote control. What's unusual is its usability. It is the best remote control for an A/V receiver I've yet encountered, and that includes the super-fancy on-screen-menu "interactive" ones. That quality of usability emerges from the remote's basic design — not merely from its instant programmability to control laser-disc players, VCR's, and TV sets from numerous other manufacturers or from its ability to "learn" as many as twenty-six command codes from any other infrared remote. A glance at the buttons and their layout shows how good ergonomic design can produce a con-

trol array that is actually alluring, what with its well-spaced buttons strongly differentiated by size, shape, placement, and, most obviously, color. The handset is easy to use by feel alone in a darkened room.

Although I usually deplore flip-open doors to hide little-used controls, the idea works well in this case. The buttons hidden by a panel on the lower left of the remote are the ones that bring the surround system to vivid, interactive life. You can, for example, turn the surround processing on and off *without* distracting sound muting or changes to any of the settings. You can even separately turn off the main, center, or surround speakers to quickly isolate the sonic effects of the adjustments you've chosen. Those facilities combine to make it very easy to arrive at an appropriate surround setting, validating for once the inclusion of so many processing modes.

The audio performance of receivers in a given price class tends to be close enough, overall, to make other factors equally important in a buying decision. The superiority of its remote control should be enough to propel the Denon AVR-1500 onto everyone's short list of top \$750 A/V receivers. □



"... What the hell is multipath, and why would it cause this guy to knock himself off?"

N E W

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TEST REPORTS



Optimus PRO LX5 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The Optimus PRO LX5 (sold through Radio Shack stores) is a compact, inexpensive loudspeaker featuring a novel wide-dispersion tweeter that radiates to the front and rear in a dipolar pattern. Designed and manufactured by Linaeum Corporation, the tweeter crosses over at approximately 2.5 kHz to a nominally 5-inch cone woofer operating in a small vented enclosure.

The PRO LX5 enclosure is made of cast aluminum with a dark gray, leather-like textured finish. The black top cover unsnaps to reveal the woofer and two small ports (each about 1 inch in diameter). The tweeter, mounted on the top of the speaker, is shielded by a perforated metal grille held by four screws.

The externally visible portion of the

Linaeum tweeter consists of two sections of thin plastic about 1½ inches wide, each forming an oval loop extending about 3 inches along the speaker's front-to-back axis. Apparently the loops act as pulsating dia-

DIMENSIONS

6¼ INCHES WIDE, 10½ INCHES HIGH,
6½ INCHES DEEP

WEIGHT

7½ POUNDS

PRICE

\$130 EACH

MANUFACTURER

RADIO SHACK, DEPT. SR, 1500 ONE TANDY
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phragms, driven in a manner not readily visible from the outside (even with the perforated grille removed).

It was easy to verify by listening that the tweeter radiated two lobes to the front and rear and had virtually no radiation from the sides — the classic figure-eight pattern characteristic of a dipole radiator. The broad lobes of the pattern provide a wide angle of coverage to front and rear, with the portion of the rear output that is reflected from the wall behind the speaker enhancing the sound's spatiality.

The specifications furnished with the PRO LX5 state that its response extends from 85 Hz to 25 kHz, and a printed "typical" response curve indicates a reasonably uniform output from about 150 Hz to 35 kHz, with a sharp drop at higher frequencies and bass output decreasing at about 10 dB per octave below 150 Hz. The other specifications include a 50-watt power-handling capacity (with a maximum of 100 watts) and a nominal 8-ohm impedance rating.

We tested the Optimus PRO LX5 speakers on 30-inch stands, about 9 feet apart and 18 inches in front of a wall. The room response, averaged for the two speakers and corrected for high-frequency boundary absorption, was notably uniform from about 500 Hz to 20 kHz, with a variation of ±3 dB over that range. The close-miked woofer response closely resembled the printed curve, peaking to a maximum at 150 Hz and falling at 10 dB per octave from there to 20 Hz.

A composite response curve, created by splicing the bass and room-response curves, showed a smooth, flat output over most of the audio range, with a rise at the 20-kHz upper limit of our measurement that gave some credence to the manufacturer's curve. But although the woofer did indeed put out a useful level at 85 Hz, the maximum output at 150 Hz exceeded that level by some 10 dB.

The Linaeum tweeter's horizontal dispersion was excellent, with no significant change in output between on-axis and 45-degree off-axis measurements below 10 kHz and a drop of about 10 dB in the 15-kHz range. But because of the system's unusual radiation pattern at high frequencies, our

Sheryl Crow: Tuesday Night Music Club (A&M) 03061

Ace Of Base: The Sign (Arista) 02354

Toni Braxton (La Face) 00420

The Bonnie Raitt Collection (Warner Bros.) 00569

R.E.M.: Eponymous (I.R.S./MCA) 00701

Best Of Dire Straits: Money For Nothing (Warner Bros.) 00713

Fleetwood Mac: Greatest Hits (Warner Bros.) 00796

The Essential Charlie Parker (Verve) 00902

Stone Temple Pilots: Core (Atlantic) 00981

Tina Turner: Simply The Best (Capitol) 01195

James Brown: 20 All-Time Greatest Hits (Polydor) 01342

Creedence Clearwater Revival: Chronicle: 20 Greatest Hits (Fantasy) 01520

Jimi Hendrix: The Ultimate Experience (MCA) 01527

Salt-N-Pepa: Very Necessary (London) 01595

Snoop Doggy Dogg: Doggystyle (Interscope) 01692 #

Mazy Star: So Tonight That I Might See (Capitol) 01735

Black Sabbath: Master Of Reality (Warner Bros.) 01863

Counting Down: August And Everything After (DGC) 02409

Green Day: Dookie (Reprise) 02753 #

John Michael Montgomery: Kickin' It Up (Atlantic Nashville) 02402

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Sarah McLachlan: Fumbling Towards Ecstasy (Arista) 02536

Reality Bites/Sdtrk. (RCA) 02555

Crash Test Dummies: God Shuffled His Feet (Arista) 02593

Ray Lynch: Deep Breakfast (Windham Hill) 02634

Nine Inch Nails: The Downward Spiral (Interscope) 02767 #

Frank Sinatra: Duets (Capitol) 03039

The Neville Brothers: Live On Planet Earth (A&M) 03065

Elton John: Goodbye Yellow Brick Road (Polydor) 03076

Elton John: Greatest Hits (Polydor) 03077

Live: Throwing Copper (Radioactive/MCA) 03085 #

Above The Rim/Sdtrk. (Interscope) 03156 #

The Crow/Sdtrk. (Atlantic) 03173

The Tractors (Arista) 05721

Warren G: Regulate...G Funk Era (Violator/Rush) 05796 #

The Who: Tommy (MCA) 03223

Reba McEntire: Read My Mind (MCA) 03243

All-4-One (Atlantic) 03267

Norman Brown: After The Storm (MoJazz) 03282

Collective Soul: Hints, Allegations & Things Left Unsaid (Atlantic) 03309

Jon Secada: Heart, Soul & A Voice (SBK) 03323

Vince Gill: When Love Finds You (MCA) 03350

Louis Armstrong: All Time Greatest Hits (Arista) 03399

Carpenters: The Singles 1969-1973 (A&M) 04393

Dumb & Dumber/Sdtrk. (RCA) 04842

The Best Of Woodstock (Atlantic) 04908

BLACKstreet (Interscope) 04922

Boney James: Backbone (Warner Bros.) 04935

Dazed And Confused/Sdtrk. (Giant/Warner Bros.) 04944

Ella Fitzgerald: The Best Of The Songbooks: The Ballads (Verve) 05713

Ray Charles: The Best Of The Atlantic Years (Rhino) 05755

Everette Harp: Common Ground (Blue Note) 05768

David Ball: Thinkin' Problem (Warner Bros.) 05791

Joshua Redman: Mood Swing (Warner Bros.) 05845

Prince: Come (Warner Bros.) 05879 #

Brooks & Dunn: Waitin' On Sundown (Arista) 05888

George Howard: A Home Far Away (GRP) 05891

Changing Faces (Atlantic) 05892

Amy Grant: House Of Love (A&M) 05902

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Joe Sample And The Soul Committee: Did You Feel That? (Warner Bros.) 05984

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Eric Clapton: From The Cradle (Reprise) 06025

Anita Baker: Rhythm Of Love (Elektra) 05980

Barry Manilow: Singin' With The Big Bands (Arista) 05989

Warren Hill: Truth (Novus) 05992

Natural Born Killers/Sdtrk. (Interscope) 05994 #

Alabama: Greatest Hits, Vol. III (RCA) 05996

The Rippingtons: Sahara (GRP) 06008

Roberta Flack: Roberta (Atlantic) 06015

Tracy Lawrence: I See It Now (Atlantic) 06017

Aaron Tippin: Lookin' Back At Myself (RCA) 06020

Bon Jovi: Cross Road (Mercury) 06183

Barry White: The Icon Is Love (A&M) 06185

Hiroshima: L.A. (Reprise/Qwest) 06024

The Judds: The Essential Collection Of Number One Hits (RCA) 06137

Phil Perry: Pure Pleasure (MCA/GRP) 06152

Craig Mack: Project: Funk Da World (Bad Boy/Arista) 06156

Pete Rock and C.L. Smooth: The Main Ingredient (Elektra) 06157

The Notorious B.I.G.: Ready To Die (Bad Boy/Arista) 06160

The Cranberries: No Need To Argue (Island) 06258

Jason's Lyric/Sdtrk. (Mercury) 06268

Beverly Hills, 90210—The College Years/TV Sdtrk. (Giant) 06168

Jeff Foxworthy: You might Be A Redneck If... (Warner Bros.) 06173

Tom Jones: The Lead And How To Swing It (Interscope) 06178

Melrose Place—The Music (Giant) 06261

Brandy (Atlantic) 06266

Black Sheep: Non Fiction (Mercury) 06273

Mary J. Blige: My Life (MCA) 06362

Pulp Fiction/Sdtrk. (MCA) 06396 #

Red Hot Chili Peppers: Out In L.A. (EMI) 06276

Skynyrd Frinds (MCA) 06290

Barbra Streisand: In Hello Dolly (Philips) 06314

Billy Ray Cyrus: Storm In The Heartland (Mercury) 06328

Jeff Lorber: West Side Stories (Mercury) 06330

Vanessa Williams: The Sweetest Days (Mercury) 06335

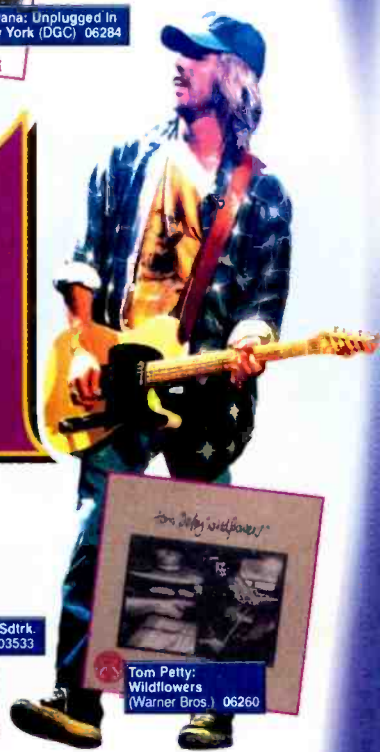
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The Lion King/Sdtrk. (Disney) 03533

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UB40: Labour Of Love (A&M) 00677

Don Henley: The End Of The Innocence (Geffen) 01064

Pavarotti And Friends (London) 01451

Tom Petty & The Heartbreakers: Greatest Hits (MCA) 02390

Soundgarden: Superunknown (A&M) 02515

James Lald (Mercury) 02565



R.E.M.: Monster (Warner Bros.) 06164

Phish: Moist (Elektra) 02724

Huey Lewis & The News: Four Chords & Several Years Ago (Elektra) 03274

John Mellencamp: Dance Naked (Mercury) 04906

L7: Hungry For Stink (Reprise/Slash) 05795 #

Neil Young & Crazy Horse: Sleeps With Angels (Reprise) 05880

Seal (1994) (Warner Bros./Sire) 05907

Big Head Todd & The Monsters: Strategem (Giant) 06161

Peter Gabriel: Shaking The Tree—16 Golden Greats (Geffen) 11089

Aerosmith: Get A Grip (Geffen) 20814 #



The Best Of Sting 1984-1994: Fields Of Gold (A&M) 06357

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Pretenders: The Singles (Sire) 33248

Bryan Adams: So Far So Good (A&M) 34771

Allman Brothers Band: A Decade Of Hits 1969-1979 (Polydor) 35031

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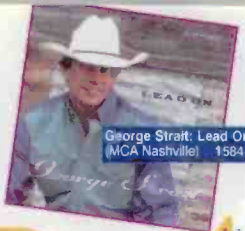
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TEST REPORTS

MLS quasi-anechoic response measurements tended to be more ragged than usual. The multiple reflected outputs from the rear radiation, which tended to smooth out the room measurements, created unavoidable interference patterns in the MLS tests. Group delay (a measure of phase linearity) was unusually low.

The speaker's impedance minimum was about 5 ohms at 70 and 250 Hz, with peaks of 35 ohms at 130 Hz and 20 ohms at 40 Hz and 1.6 kHz. The system sensitivity was 86 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts of random noise. We measured the woofer distortion with a 4.2-volt input, equivalent to a 90-dB SPL at 1 meter. Above about 150 Hz the distortion was between 0.6 and 1 percent, but it rose to almost 5 percent at 100 Hz and to 10 percent at 80 Hz.

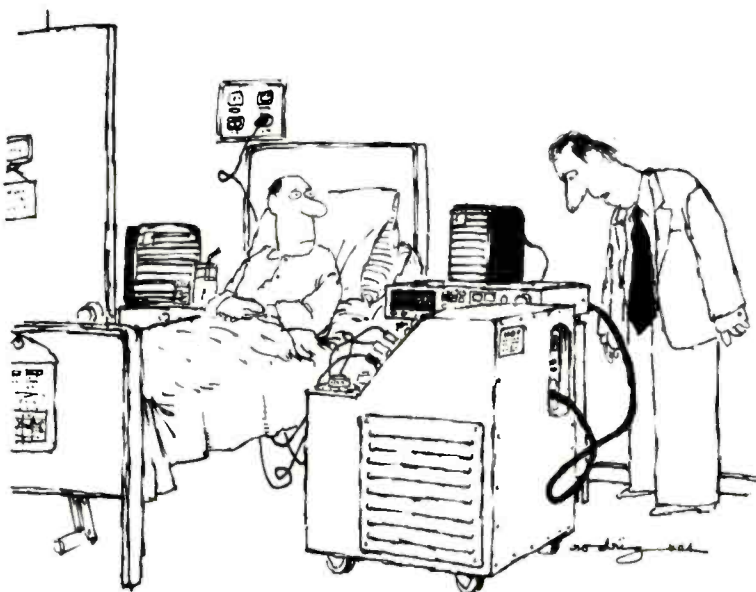
Despite its small woofer, the Optimus PRO LX5 was able to handle rather large inputs of single-cycle tone bursts without damage. At 100 Hz the woofer cone bottomed with an input of 95 watts, which is quite respectable for a 5-inch driver. At 1 kHz the woofer easily absorbed everything the amplifier could dish out, at 530 watts, and at 10 kHz the Linacum tweeter

had no trouble handling a 1,200-watt input.

The Optimus PRO LX5, despite its low-frequency limitations, produced a surprisingly balanced overall sound, with no obvious lack of bass. Undoubtedly this was because of its very healthy output between 100 and 500 Hz, which gives a good sense of the lower octaves without sounding boomy or unnatural. The speaker's wide, smooth, and well-dispersed middle- and high-frequency output distinguishes it from many others of similar size and price.

In A/B comparisons against other speakers of comparable size, the PRO LX5 easily held its own. When we teamed it with a good subwoofer, the combination was thoroughly satisfying, with the PRO LX5's own low-frequency rolloff nicely complementing the subwoofer's frequency range. Actually, the most interesting aspect of this combination was how *little* the subwoofer added to the system's sound. Only with programs containing strong, *deep* bass (under 50 Hz or so) was there any obvious difference in the sound when using the subwoofer.

The Optimus PRO LX5 is clearly an excellent value, and a lot of speaker for its size and price. □



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TEST REPORTS



Grado SR125 Headphones

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

Grado Laboratories of Brooklyn, New York, is one of the handful of audio manufacturers that have retained their original family ownership and quality standards for over forty years. Founder Joseph Grado, the inventor of the moving-coil stereo phono cartridge, later turned his talents to designing other audio products, including tonearms, turntables, and stereo headphones. Many Grado products, most notably the headphones and phono cartridges, have achieved wide recognition among serious audiophiles.

The current president and owner of Grado Laboratories, Joe's nephew John Grado, led the development of

the company's recently introduced Prestige Series of affordable, high-quality headphones, consisting of five models priced between \$69 and \$295. They share the same basic design and performance characteristics, differing

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slightly in their driver level matching and the specific materials that are used in their construction.

The Grado SR125's price places it in the middle of the Prestige Series. Its earpieces contain dynamic transducers whose voice coils are wound with ultra-high-purity long-crystal (UHPLC) oxygen-free copper wire. Grado says the use of UHPLC copper minimizes coloration and produces the finest sound quality. The transducers are of the open-air type, with light foam earcushions that rest comfortably on the wearer's ears but provide little isolation from ambient sound.

The low-mass polymer transducer diaphragm is formed to broaden its resonant modes and minimize their amplitude. The diaphragm is vented into a relatively large air chamber to reduce its resonance frequency and extend its bass response. The back of the chamber opens to the outside through a perforated plate. Grado rates the SR125's response as 20 Hz to 20 kHz (no tolerance specified). The levels of the two drivers are said to be matched to within 0.1 dB. Powerful neodymium magnets are used for maximum efficiency.

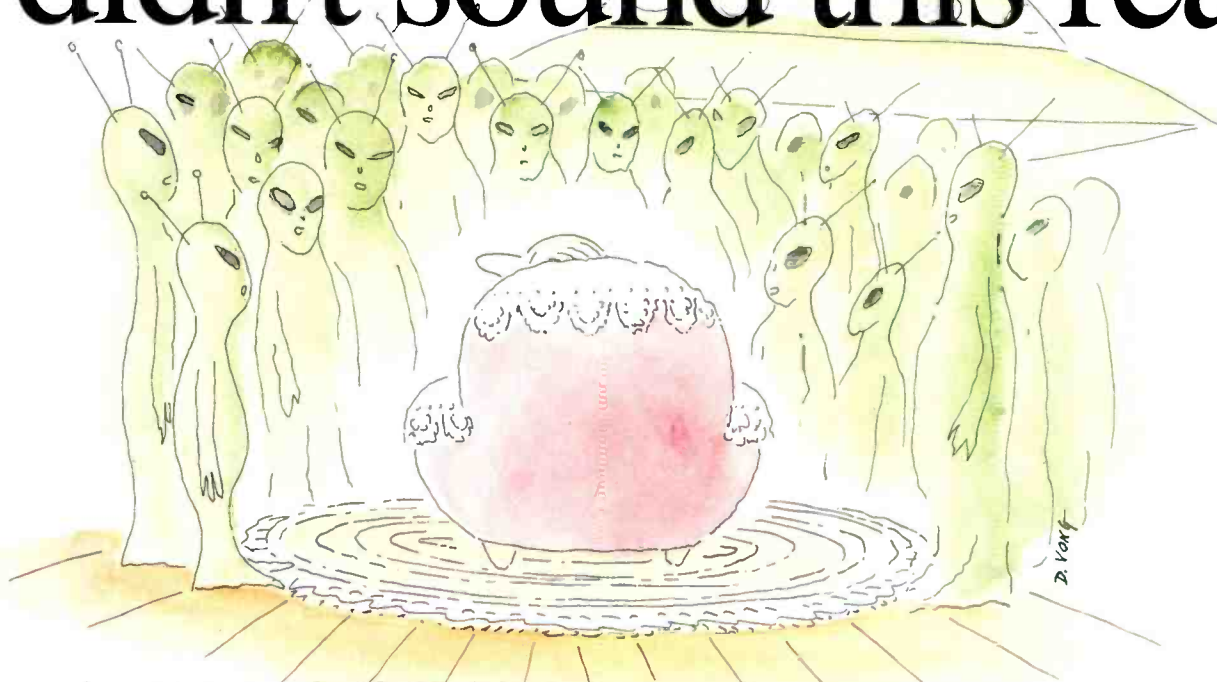
The headphones' foam-plastic earcushions are removable for cleaning. The comfortable spring-type headband is easy to adjust for size and is clearly marked to identify the left and right earpieces. The 6-foot connecting cable is fitted with a gold-plated standard quarter-inch stereo plug.

We measured the performance of the Grado SR125 phones mounted on a standard headphone coupler whose internal volume approximates that of the external human ear, with a Brüel & Kjaer 4133 microphone about 3/8 inch from the plane of the earcushion. The input signal was supplied by our Audio Precision System One, which also analyzed the microphone output.

The headphone's acoustic output, measured with a sweeping one-third-octave band of random noise, was greatest at the lowest frequencies, very flat through the midrange, and fell off above 20 kHz. The overall variation was only +4, -5 dB from 20 Hz to 10 kHz, falling to -10 dB at 16 kHz. Referred to the 1-kHz level, the output was about +4 dB from 30 to 150 Hz,

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TEST REPORTS

and between 350 Hz and 3 kHz the variation was less than 0.5 dB.

We measured the distortion in the SR125's acoustic output across its frequency range with a constant input level of 1 volt. Between 100 Hz and 20 kHz the total harmonic distortion plus noise (THD+N) was typically 0.8 percent, reaching its maximum of 1.5 percent at 100 Hz. A spectrum analysis of the distortion from a 1-volt, 1-kHz input showed only a single component at 3 kHz, 60 dB down (0.1 percent). Grado's impedance rating of 32 ohms was confirmed by our measurement, which showed only minor variation, between 31 and 36 ohms, from 20 Hz to 20 kHz.

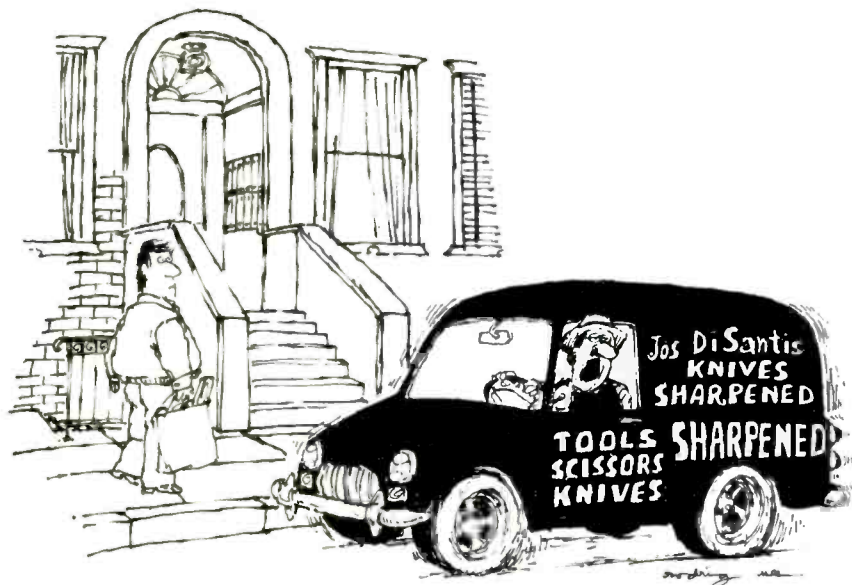
The sound character of the Grado SR125 phones was closer to that of a good speaker system than to that of a good headphones I have used in the past. The SR125 had a smoothness and balance across the audible range that I have rarely (if ever) experienced from headphones. Its reproduction of low-bass frequencies was strikingly good, far surpassing in clarity and dynamic range almost all speakers I have tested or heard (even test tones at 20 or 30 Hz sounded cleaner and better than I have heard from any but the best subwoofers).

Unfortunately, good as it is, neither

the Grado SR125 nor any other headphone provides the infrasonic body massage that can come from a good bass loudspeaker in a good listening room. Headphone and loudspeaker listening are two very different experiences, each with its advantages and disadvantages. That is particularly true in the deep bass (below about 40 Hz), which we experience as much by the overall "feel" as by the sound.

Still, in its own realm the Grado SR125 is a real winner and an excellent value. I cannot imagine a better sounding headphone at anywhere near its price. I do not, however, accept the premise that the use of UHPLC copper for the voice coil has the slightest bearing on the SR125's superb sound. My hunch is that Grado simply knows how to design and build a first-rate headphone — good enough that, in comparison with most other high-end phones, its performance might almost be interpreted as magical.

That conclusion was reinforced by my memory of my first meeting with Joe Grado some forty-odd years ago, when he demonstrated, to my amazement, his unique talent for creating some of the best-sounding phono cartridges of the time (or future times, for that matter). Apparently John Grado shares his uncle's talent. □



"Knives, scissors, speaker spikes sharpened! Knives, scissors, speaker spikes sharpened! . . ."

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Our extraordinary new PowerField™ 1500 features a 250-watt RMS amp, fully adjustable electronic crossover and massive 15-inch driver for only \$995

"Showstoppers" – Stereo Review

Definitive's PowerField 1500 has triumphed, winning Subwoofer of the Year in the Audio Video Grand Prix. We set out to build the world's finest sounding subwoofers, and we have done it. Experts agree that we have achieved the perfect synergy of powerful, earth-shaking bass for home theater and a refined and expressive musicality.

All three Definitive powered subwoofers feature our PowerField Technology, monocoque cabinets, high-power high-current amplifiers, fully adjustable electronic crossovers and massive 15" or 18" drivers. The result is the absolute ultimate in subwoofer performance, awesome bass which thunders down below 15 Hz, yet retains complete musical accuracy for your total enjoyment.



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To ensure optimum performance in your home, the PowerFields have high and low level inputs and outputs, adjustable high pass, low pass and volume controls (plus phase controls for the PF 1500 and 1800) to guarantee perfect blending with any system and superior bass response in any room.

Super Subwoofers from \$699

Three extraordinary Definitive powered subwoofers are now available: the PowerField 15 (185-watts RMS, 15-inch at \$699), PowerField 1500 (250-watts RMS, 15-inch at \$995) and PowerField 1800 (500-watts RMS, 18-inch at \$1599). Hear them today!

Definitive Technology®

11105 Valley Heights Drive • Baltimore, MD 21117
See our dealer list on facing page (410) 363-7148

TEST REPORTS



Klipsch Epic CF-1 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The new Epic Series of loudspeakers from Klipsch & Associates features what the company calls “controlled focus” design. Rather than referring to a single characteristic, this term represents a group of design features intended to make the Epic series equally suitable for home theater and conventional home audio applications.

The Epic Series consists of four models, differing in size and other specifics but sharing the same basic design. They are floor-standing speakers, with a pair of vertically aligned woofers surrounding a horn-loaded

tweeter (the well-known D’Appolito configuration) normally covered by a removable black cloth grille. The port of the vented enclosure is located at the bottom of the front panel.

Klipsch speakers have always been noted for their high efficiency, and the Epic series is true to its heritage with sensitivity ratings ranging from 96 to 102 dB sound-pressure level (SPL), substantially higher than most other speakers intended for the home market. The Epic Series drivers use powerful neodymium magnets located inside the voice-coil assembly, which Klipsch says not only improves per-

formance but also provides the “shielding” required for speakers that may be located close to a video display.

The CF-1, which we tested, is the smallest and lowest-priced of the Epic systems. Its 6½-inch woofers, which have blended polymer and graphite cones, hand off to the tweeter at 2.2 kHz with crossover slopes of 18 dB per octave. The high-frequency driver, which has an aluminum diaphragm, is coupled to a rectangular third-generation Tractrix horn, whose mouth measures approximately 5 x 9 inches. This horn, similar to the ones used in the company’s Home THX speakers, has a rated dispersion of 90 degrees horizontally and 60 degrees vertically. Klipsch says the speaker’s radiation pattern covers the intended listening area to provide stable imaging while minimizing reflections that could color the sound.

Klipsch notes that the crossover is set at the frequency where the woofer’s horizontal dispersion matches that of the horn tweeter and that the D’Appolito driver configuration places the acoustic center of the entire speaker’s output at the center of the horn, creating the effect of a 60-degree vertical pattern in the crossover region for the total system. The design aim was to create the aural illusion that all the sound radiates from one full-range driver.

The CF-1 enclosure is fitted with spiked feet, which is claimed to reduce low-frequency coloration and im-

DIMENSIONS

13 INCHES WIDE, 34 INCHES HIGH,
15 INCHES DEEP

WEIGHT

70 POUNDS

FINISH

WHITEWASH, LIGHT OAK, MEDIUM OAK,
CHERRY, WALNUT, BLACK SATIN, OR
UNFINISHED

PRICE

\$550 EACH

MANUFACTURER

KLIPSCH, DEPT. SR, 8900 KEYSTONE
CROSSING, SUITE 1200, INDIANAPOLIS,
IN 46240

prove overall detail. Removable spike caps are provided to protect the floor from damage and to simplify positioning the speaker on a carpet.

Klipsch recommends that the CF-1 speakers be spaced about two-thirds as far apart as their distance from the listener and points out that (as with any speaker) their bass performance will be affected by the proximity of the walls behind and beside them. The company also suggests that for best imaging the horn should be aimed at the listeners' ears, by toeing them in as necessary and possibly tilting them back slightly.

For measurement and listening, we placed the Klipsch CF-1 speakers approximately as recommended. The room response, averaged for the left and right speakers, was exceptionally flat, within ± 2 dB from 70 Hz to 10 kHz. The averaged output between 10 and 20 kHz was a couple of decibels higher than at lower frequencies and did not drop below the overall average up to our 20-kHz measurement limit. This measurement was consistent with a quasi-anechoic MLS response measurement at a 2-meter distance.

The close-miked woofer response, essentially flat from the crossover frequency down to about 70 Hz, reached a maximum of +6 dB at 50 Hz and fell off to -6 dB at 32 Hz. It spliced easily to the room response to produce a composite response of 32 Hz to 20 kHz ± 6 dB.

Measured sensitivity was 92 dB SPL at 1 meter with a 2.83-volt input of pink noise. Although that is short of the system's 96-dB rating, it was measured in a totally different environment than that used by the manufacturer and is still high by home loudspeaker standards.

At an input of 2.25 volts, corresponding to our 90-dB reference output level, the system's bass distortion remained between 0.6 and 1.5 percent from 50 Hz to 2 kHz, rising to 3 percent at 40 Hz and 6 percent at 30 Hz — excellent performance for a pair of 6½-inch drivers.

The system impedance was typically between 4 and 5 ohms from 90 Hz to 2.2 kHz, with high readings of 25 ohms at 22 Hz and 28.5 ohms at 6 kHz. With a single-cycle sine-wave in-

put signal our test amplifier clipped before the speaker cones audibly bottomed, although the acoustic output was visibly and audibly distorted at that point. Since this corresponded to a power input of between 1,200 and

sound that gives no hint of its driver configuration. Its bass capabilities are as substantial as our test results implied — the CF-1 is a speaker that can stand on its own without assistance from a subwoofer (except, as almost

The Klipsch Epic CF-1 speaker system was designed to create the aural illusion that all the sound radiates from a single full-range driver.

1,300 watts at 100 Hz and 1 kHz and 420 watts at 10 kHz, it should be obvious that the CF-1 will take just about anything one is likely to put into it without much risk of damage (to *itself*, that is — it can put out an enormous sound level!).

Listening to the CF-1 did not in the least diminish our respect for its performance. It has a full-range, balanced

always, for creating a room-shaking effect from *Jurassic Park* or the bottom octave in an organ recording).

In our use of the CF-1, we found no idiosyncrasies, sonic or otherwise, to mar an overwhelmingly positive reaction. There are a number of very good speakers in its price range, but before making a choice it would be wise to hear the Klipsch CF-1. □



"No question about it, Mister. Your amplifier's meters are definitely out of phase."

TEST REPORTS



Panasonic LX-H170 CD/Laserdisc Player

DAVID RANADA • TECHNICAL EDITOR

The picture and sound quality available from laserdisc far surpasses that from the best pre-recorded videotapes, making it the standard by which home theater performance is judged. And now you don't have to jump in with both halves of your wallet to explore laserdiscs: Recent combination CD/laserdisc players make enjoyment of the medium quite economical. A prime case in point is Panasonic's LX-H170, the company's "starter" combination player and one of the least expensive of all such products.

What you mainly give up for the low price are some of the zippy features available on deluxe models, such as a digital frame store (for freeze-framing on CLV discs) and automatic side change, but with the LX-H170 you still get some advanced circuitry. For example, there's a digital time-base corrector that reduces the medium's already low picture distortion and jitter. On the audio side, the player's 1-bit digital-to-analog (D/A) con-

verters are of parent Matsushita's well-regarded MASH variety.

The front panel, however, is very basic: buttons for the fundamental disc-transport functions (stop, pause, play, chapter/track-skip, drawer open/close), a numerical track-selection keypad for cueing (the type that requires pressing a +10 key for all track numbers greater than 9), a display window, and a quarter-inch headphone jack with its volume-control knob.

DIMENSIONS

17 INCHES WIDE, 5 INCHES HIGH,
16 INCHES DEEP

WEIGHT

16½ POUNDS

PRICE

\$450

MANUFACTURER

PANASONIC, DEPT. SR, ONE PANASONIC WAY,
SECAUCUS, NJ 07094

Most prominent is the shuttle dial, a multispeed fast-forward/reverse control; on the remote this feature is controlled by a pair of buttons.

The remote is the only means of operating the rest of the player's features, which, although limited in number compared with what you'd find on a top-of-the-line model, are sufficiently versatile for most users. When playing a CAV disc, for example, the remote enables activation of forward and reverse single-frame stepping. A numerical keypad enables cueing by laserdisc frame number (CAV discs) or by time from the beginning of the side (CLV discs). It does double duty as a track/chapter selector for the LX-H170's twenty-step programmed-playback function. The player can automatically program CD tracks or laserdisc chapters for recording on tapes of specified lengths. Special playback modes include random sequence and intro scan, which plays the first 10 seconds of every track or chapter. There are quite a few repeat modes, only some of which will be useful.

Hookup is more straightforward than usual for a laserdisc player, since the only connectors on the LX-H170's back panel are two sets of A/V outputs, both comprising composite video

PHOTO: LOOK P. LEUNG


Well,


now you

know

why you

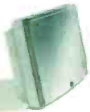
waited.

 You finally purchased the big screen TV. And while it sounds good, you know it could sound incredible if you added surround sound. But you've been holding off, because until now home theater has seemed just too complicated. Now you'll be glad you waited.


 Introducing Infinity COMPOSITIONS, a home theater system that's so simple to install – you just plug it in and listen.

It's engineered with the latest in speaker driver technology.

It requires a minimal amount of power to deliver an incredible sound experience. Its streamlined design

 enhances the decor of a room where others overpower it. And because we built in so much of our leading-edge Infinity technology, COMPOSITIONS is timeless.

So you'll be able to enjoy your favorite movies and CDs for a

 long time to come. To hear and feel a demonstration

visit your Infinity dealer. For more information call 1-800-508-5588.

 **Infinity**

CIRCLE NO. 25 ON READER SERVICE CARD

TEST REPORTS



and line-level audio. There are no digital-audio, S-video, or RF outputs.

Despite its relatively bare-bones feature set, the LX-H170 delivered anything but minimal performance on the test bench. Measured video performance was up there with the best we have tested, with outstanding figures for resolution and very low chroma errors. It doesn't show up in the measurements, but the comparative lack of bounciness on our lab's waveform monitor and vectorscope displays indicated that the digital time-base corrector was doing its job well (such jitteriness can show up as picture noise). As for sound, the LX-H170's digital-audio performance was good, if not outstanding. The main "problem" area, if you can call it that, was the higher than typical measured noise. Analog (AFM) audio performance, which we measured for the first time with the REF-EA1 test disc, was okay but, unsurprisingly, not nearly as good as that provided by the digital circuitry.

Direct-switched video comparisons with a couple of other recently tested players costing approximately two and more than five times as much as the LX-H170 showed essentially no differences on typical program material

and just barely visible differences on various test patterns. And with the test patterns, half the time it was the LX-H170 that looked "better" (sometimes it's hard to tell). Typical audio program material played at normal volumes also sounded identical once the players' output levels were matched. We could detect the LX-H170's slightly higher noise by really turning up the volume and sticking an ear right next to a speaker while playing a dither-noise test track — hardly typical operation. The only operational annoyance I found, and it will be of significance only to *Roger Rabbit*-type frame-by-frame viewers, is that repeatedly pressing still/step buttons is a poor substitute for the variable-speed playback and jog/shuttle features available on more expensive units.

Given its high level of audio and video performance, its useful, if modest, array of features, and its price, the Panasonic LX-H170 must be considered one of the best home theater bargains going. Jump in with both feet! □



"Dear Sir: You are one of eight remaining members of our record club. Would you consider a buyout of your membership contract for \$25 and a five-course Chinese dinner for two?..."

MEASUREMENTS

DIGITAL AUDIO

All figures for both CD and laserdisc playback except as noted

Maximum output level	1.89 volts
Dolby calibration error (re 2.0 volts)	-0.52 dB
Frequency response (20 Hz to 20 kHz)	
de-emphasis off	+0.45, -0.04 dB
de-emphasis on	+0.45, -0.12 dB
Channel separation	
125 Hz	91.4 dB
1 kHz	90.9 dB
16 kHz	84.7 dB
Channel imbalance (1 kHz)	0.06 dB
Signal-to-noise ratio (A-wtd.)	
de-emphasis off	111.5 dB
de-emphasis on	111.5 dB
Signal-to-dither ratio (A-wtd.)	91 dB
Dynamic range (EIAJ)	90.8 dB
Distortion (THD+N at 0 dB, 20 Hz to 20 kHz).....	<0.065%
Linearity error	
1-dB-error point	-94 dB
Defect tracking (CD only, Pierre Verany #2 test disc)	2,400 μ m
Impact resistance (CD, top and sides) ..	B+
Cueing accuracy (CD).....	A
Slewing time (CD)	3 seconds

AFM AUDIO

All figures for laserdisc only, measured with REF-EA1 test disc

Maximum output level	
left/right	0.42/0.45 volt
Frequency response	
..... 20 Hz to 20 kHz, +1.9, -3.9 dB	
Channel imbalance	0.6 dB
Signal-to-noise ratio (A-wtd.)	76.5 dB
Distortion (at 1 kHz)	0.79%
Channel separation (at 1 kHz).....	41.8 dB

VIDEO

All data measured with REF-EA1 test disc

Video output-level error	<1% high
Horizontal luminance	
resolution (wedge test pattern)	410 lines
bandwidth	-3 dB at 4.3 MHz
Chroma errors	
gain	\pm <2.5%
phase	\pm <2.5°
Chroma differential gain	12%
Chroma differential phase	3°



HOW YOU SPEND YOUR TIME

You're
taking it to the
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Aiming
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RELISHING
every second.
ESQ.
It's how
you spend your
TIME.



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The Critics Love Our You'll Love Our Fa

Audio Magazine once said that our Ensemble® speaker system may be "the best value in the world." And *Stereo Review* said "It's hard to imagine going wrong with Ensemble." Dozens of critics and thousands of customers have applauded our Ensemble, Ensemble II & Ensemble III speaker systems. Designed by Audio Hall of Fame member Henry Kloss, (founder of AR, KLH and Advent), these systems have become best sellers for two reasons.

1. They offer very high quality construction and accurate, wide-range music reproduction with precise stereo imaging.

2. We sell our Ensemble systems factory-direct to you, the consumer, with no expensive middlemen.



find that placement that gives you exactly the sound you want. This is one of the reasons *Esquire* described Ensemble by saying "you get 30 days to return the speakers or keep them, but you'll keep them."

New Tonal Controls & Woofer.

Ensemble maintains the tonal balance, frequency range and quality of construction of the original. There are two basic changes.

1. New "long throw" subwoofer speakers with built-in heat sinks.

Ensemble now uses the 8" long throw woofer designed for our Powered Subwoofer II. The woofer's extremely long "throw" (almost 1") provides for more linear cone excursion for more accurate bass. A unique integral heat sink provides improved power handling.

2. New frequency balance controls.

Ensemble's satellite speakers use the same high quality 1 3/4" tweeter, 4" midrange driver and crossover as the original, but with newly designed midrange and high-frequency balance control switches.

A two-position midrange switch on each satellite lets you choose the same output in the key 800-1600 Hz octave as in the original - or you can flip the switch to emphasize that octave by 2 dB. The original Ensemble's response was tailored to avoid the "boxy" characteristic typical of many speakers. This results in an "open" sound on large-scale musical works. For some music, switching to the higher output position provides a "warmer" sound that some listeners may prefer.

A second, high-frequency switch has three positions:

A) The same balance as original Ensemble.

B) A 2 dB high-frequency increase.

C) A 2 dB high-frequency decrease.

Rather than affecting tonal balance as does the midrange control, the high-frequency switch can subtly increase the system's "airiness" (Increase) or it can reduce any tendency towards "edginess" (Decrease).

Real Life Performance, Real Value.

In terms of "real life" performance (your music, your listening room), our Ensemble system competes with speakers selling for hundreds more. Available factory-direct with black vinyl-clad subwoofers, \$549, or with black laminate subwoofers, \$629.

Ensemble II.

Our Ensemble II is an improved version of our best-selling speaker system. It's more affordable than Ensemble because it uses one cabinet to house both subwoofer speakers. Its satellite speakers are identical in every way to those used in our Ensemble system, including the new high-frequency and midrange balance controls.



Ensemble

Our current Ensemble is an improved version of our original, dual-subwoofer/satellite speaker system. Ensemble maintains the dual subwoofer design of the original, which allows for maximum room placement flexibility. Placement of bass and high-frequency speakers in a room—and how those speakers interact with the acoustics of the room—has more influence on the overall sound quality of a stereo system than just about anything. Ensemble's two ultra-slim subwoofers give you more placement flexibility than any speaker system we know of, and are most likely to provide the performance you want *in the real world...in your room*. Having two, compact subwoofers lets you move them around, experiment, and

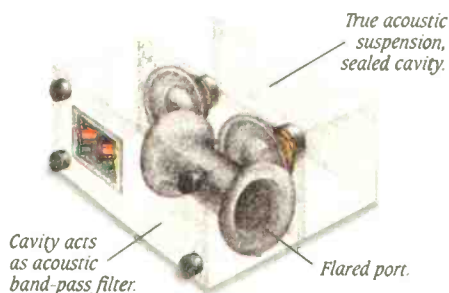


The current Ensemble II maintains the overall tonal balance, frequency range, power handling and quality of construction that made the original one of the country's most popular speaker systems. There are two basic differences from the original. The

Ensemble Speakers. Factory-Direct Prices.

first is that its satellite speakers use the same high-frequency and midrange balance controls as our improved Ensemble system (see previous description). The satellites use the same gold-plated 5-way connecting posts as Ensemble. The second difference involves a redesigned subwoofer cabinet.

Flared subwoofer port. Ensemble II's subwoofer cabinet encloses twin 6 1/2" long throw woofers mounted in a sealed "acoustic suspension" chamber. They project into a second chamber fitted with a single, flared port. The port provides smoother air flow, virtually eliminating the generation of any extraneous noise on strong, low bass notes.



"...Beyond Its Price And Size Class"

Stereo Review said that Ensemble II "performs so far beyond its price and size class that it can be compared only with much larger speakers at substantially higher prices." We believe Ensemble II clearly outperforms other speakers in its category, including well-known models that sell for about twice the price. Available factory-direct for only \$439.

Ensemble III

Now you can bring the clear, balanced wide-range sound of Ensemble speakers to a small room. Our Ensemble III speaker system is ultra-compact: a pair of two-way satellite speakers measuring 4 1/2" x 6 1/2" x 3" and a subwoofer cabinet measuring just 8" x 8" x 15".



What The Critics Say.

"Ensemble III sounded very good...first rate in every respect...it sounds like a lot more speaker than its unassuming appearance and very attractive price would suggest." *Stereo Review*

"Ensemble II performs so far beyond its price and size that it can be compared only with much larger speakers at substantially higher prices." *Stereo Review*

"A listening test left no doubt that this system ranks with the best in its price range." *New York Times*

"Longer term listening confirmed Ensemble's spacious, airy quality and accurate soundstage. The satellites have flat response and almost no distortion...and directivity is excellent. What Cambridge SoundWorks had in mind was the best value in the world, and they may have it...a winner." *Audio*

Surprising Accuracy and Musical Range at a Low Price.

Compared to our Ensemble II system, Ensemble III gives up a little in the way of power handling, low bass range, and efficiency. Unlike the "cube" satellite speakers you'd expect to find in similarly priced systems, Ensemble III's satellites are true two-way speakers with a 3 1/2" midrange driver, a 3/4" tweeter and a crossover. Ensemble III's 6 1/2" woofer uses two separate voice coils (one for each channel) in a cabinet using a special flared port for smooth air flow.

With most recordings Ensemble III will sound virtually identical to Ensemble II. It simply won't play quite as loudly. Its construction quality matches that of our other Ensemble speakers. Ensemble III is available factory-

direct, \$329. It is perhaps the best speaker value of all time.

Risk Free, Satisfaction Guaranteed.

All Cambridge SoundWorks speakers are backed by a 30-Day Total Satisfaction Guarantee. So you can audition your speaker the *right* way - in your home, with no salesman hovering nearby. If within 30 days you're not happy, return your system for a full refund. We even reimburse original UPS ground shipping charges in continental U.S.

The satellite speakers used in the New Ensemble and New Ensemble II include midrange and high-frequency tonal balance controls, and gold-plated 5-way binding posts.



All three Ensemble speaker systems come with 100 feet of speaker wire, a wire cutter/stripper, accessories, and our Guide To Surround Sound.

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CIRCLE NO. 6 ON READER SERVICE CARD



Lexicon CP-3 Plus Digital Surround Processor Upgrade

DAVID RANADA • TECHNICAL EDITOR

The power of a computer arises from its ability to redefine its operations according to the program it is running. Among audio components, this can be seen most clearly with digital signal-processing devices that provide multiple modes of ambience enhancement or surround-sound decoding. Each mode is a separate computer program. The Lexicon CP-3 Plus upgrade makes the point vividly: It's a small read-only-memory (ROM) chip containing improved programming for the highly regarded Lexicon CP-3 digital surround processor. Installing the chip is made easier by the supplied chip puller, which is used to extract the old ROM. Lexicon recommends, however, that the new chip be installed by a dealer. Regardless of who does the operation, the \$250 ROM chip upgrades a CP-3 to a CP-3 Plus, which is also available as a ready-built product (\$3,200).

Julian Hirsch reviewed the CP-3 back in the April 1992 issue and said that it produced "the finest surround sound and home-cinema sound that is currently available." We'll make a long story shorter by stating that the new features contained in the ROM chip reinforce that assessment. A few measurements made on our newly upgraded CP-3 (now Plus) suggest that its basic audio performance hasn't changed

from that indicated by the figures we published three years ago, all of which demonstrated good to excellent performance in such crucial characteristics as distortion and noise.

For those of you who have, heaven forbid, discarded your April 1992 issues, a résumé of what the CP-3 Plus can do is in order. It has four inputs — three A/V, one audio-only — and supplies outputs for as many as seven speakers (plus one or more subwoofers) placed around your listening room to provide spatial enhancement of music recordings and surround-sound reproduction of film soundtracks. You don't need that many speakers to get up and running, however; four will do: a main stereo pair and two side or rear auxiliaries. An all-out system would include three front speakers for left, center, and right, two side speakers, two rear speakers, and one or two subwoofers. All outputs are at line level, so you'll also need as many channels of amplification as you have speakers except possibly for multiple subwoofers; if these don't have their own built-in amplifiers, a pair could be driven in parallel from the same amplifier channel. Installing a full-bore CP-3 Plus system can thus mean spending the better part of a working day connecting amps and running cables.

The programming can be adjusted

for optimum performance with several possible speaker combinations. Speaker-setup and adjustment procedures have remained essentially unchanged from the original CP-3 except for extension of the center-delay setting to all processing modes that use a center speaker.

The two remote controls supplied with the CP-3 Plus remain the same. The eighteen-button "standard" remote enables quick access to only the most important processing modes and only limited adjustability of each mode. The "expanded" remote has twice as many buttons and provides the *only* access to many of the CP-3 Plus's functions (the front-panel controls are even less versatile than those on the standard remote).

Aside from the material covering new features, the manual is also little changed from the original CP-3 edition. It remains the *War and Peace* of audio-equipment manuals: sweeping in scope, fairly well organized, brilliantly written with lots of accurate and useful detail — and long. It does have illustrations and frequency-response plots, however, which Tolstoy thoughtlessly neglected. A supplementary *Cliff Notes*-type rewrite would still be most welcome. I'd include in it the recommendation that the processor's automatic signal-to-noise optimization be turned off for all inputs and operating modes, since it generates annoying low-level clicking sounds when it's working. In fact, off really ought to be the default setting for this feature.

The CP-3 Plus's processing modes, which are its core, still fall into four major groups: Panorama, Ambience,

In The Mid '70s We Created Home Theater. Now We've Created A New Way To Buy It.

The people who work at Cambridge SoundWorks - including our cofounder Henry Kloss (who also founded AR, KLH and Advent) - have been involved with the concept of home theater from the beginning. In 1969 (years before VCRs and cable TV), Henry Kloss founded Advent, the company that introduced the first home theater audio/video systems - complete with big-screen TVs and digital surround sound. We have had an ongoing relationship with the people at Dolby Laboratories, creators of Dolby Surround Sound, since Henry Kloss introduced the *first* consumer products with Dolby noise reduction over 20 years ago. And now at Cambridge SoundWorks we believe we have set a new price-to-performance standard for home theater components.

Because we sell carefully matched and tested home theater speaker systems factory-direct, with no expensive middlemen, you can save hundreds of dollars. We believe the products on these pages represent the country's best values in high performance home theater components. Audio critics, and thousands of satisfied customers, agree. *Stereo Review* said "Cambridge SoundWorks manufactures loudspeakers that provide exceptional sound quality at affordable prices." *Audio* suggested that we "may have the best value in the world."

Center Channel Speakers

Cambridge SoundWorks manufactures three speakers for use as center channel speakers in Dolby Pro Logic home theater systems. All three are magnetically shielded so they can be placed near a TV or computer monitor. *Model Ten-A* is a small, affordable two-way speaker. **\$80.** *Center Channel* is identical to a



Cambridge SoundWorks *Ensemble* satellite (but with magnetic shielding). **\$149.** *Center Channel Plus* uses an ultra-low, ultra-wide design that is ideal for placement above (or, with optional support stand, below) a TV monitor. **\$219.**

Surround Speakers

Cambridge SoundWorks makes two "dipole radiator" surround sound speakers. Dolby Laboratories recommends dipole radiator speakers for use as surround speakers.



The Surround has a very high power handling capacity and is often selected for "high end" surround sound systems. *Audio*, describing a system that included *The*

Surround said, "In many ways the surround sensation was every bit as good as far more expensive installations." **\$399 pr.** The smaller *The Surround II* is arguably the country's best value in a dipole radiator speaker. **\$249 pr.**

Powered Subwoofers

The original *Powered Subwoofer* by Cambridge SoundWorks consists of a heavy-



duty 12" woofer housed in an acoustic suspension cabinet with a 140-watt amplifier and a built-in electronic crossover. *Stereo Review* said it provides "deep powerful bass...31.5 Hz bass output was obtainable at a room-shaking level... they open the

way to having a 'killer' system for an affordable price." **\$699.** Our *Slave Subwoofer* uses the same woofer driver and cabinet, but does not include the amplifier or crossover. It can only be used in conjunction with the *Powered Subwoofer*. **\$299.** The new *Powered Subwoofer II* uses a 120-watt amplifier with an 8" woofer. **\$399.**

Our *EXO-1* electronic crossover can be used with either of our powered subwoofer systems,

or with powered subwoofers made by other companies. Its high pass filters keep strong, low bass signals out of the main stereo speakers, and directs them to the powered subwoofer. **\$299.**

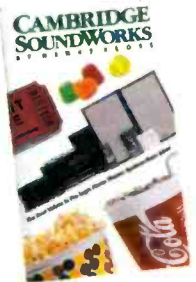
Home Theater Speaker Systems

We have assembled a number of home theater speaker systems that consist of center channel, surround and main stereo speakers. The



combination we show here is our best seller. It includes our critically acclaimed *Ensemble* subwoofer satellite speaker system (with dual subwoofers), our *Center Channel Plus* and a pair of our best surround speakers, *The Surround*. You could spend hundreds more than its **\$1,167** price without improving performance.

For information on other home theater speaker systems - or on any of the products we make and sell - call 1-800-FOR-HIFI for your free color catalog. Thanks.



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Reverb, and Surround, as they are labeled on the expanded remote. Panorama is one of the few well-executed examples of a process called interaural-crosstalk cancellation, which can extend the stereo image well past the angle subtended by a pair of speakers. When you are sitting at the right location, the digital processing cancels at each ear the sound arriving from the opposite speaker to create headphone-like binaural imaging effects outside your head. It's a fascinating technique that can produce some pretty spectacular results, but I've never found this CP-3 mode to be as appealing or as realistic-sounding as the others.

Ambience processing simulates the diversity of the earliest-arriving sound reflections that hit your ears when listening to music indoors. Three basic modes are available, corresponding to small, medium, and large concert halls. All of the CP-3 Plus's artificial reflections are assigned specific directions, levels, and spectral shapes (otherwise known as filtering) and are fed out through the side and rear speakers to preserve a correct frontal image from the main speakers. Reverb processing feeds the side and rear speakers with the dense echo pattern characteristic of the later-arriving reverberation of, again, a small, medium, or large hall.

The Ambience modes would typically be used to increase the sense of immediacy and space around program material that already contains a moderate and appropriate amount of reverberation (such as many simply miked classical recordings). Reverb processing is best used to enhance music recorded in spaces that have a large amount of natural reverberation relative to their size, such as a cathedral.

Each of the hall settings in the Ambience and Reverb modes has several user-adjustable parameters that can substantially change the sonic characteristics of the simulated space. Each Ambience-mode “hall” can have its acoustical settings adjusted to simulate a different shape (rectangular or fan-shaped), size, liveness (simulating wall reflectivity), and high-frequency rolloff of reflections. Adjustments in the Reverb modes include mid- and low-frequency reverberation times, room size, the delay between the direct sound and the onset of reverberation, and high-frequency rolloff. In all of the Ambience and Reverb modes you can also switch in Panorama proc-

essing (especially useful if you have no side speakers) and “speech detect,” which removes monaural signals — such as pop and rap vocals — from the processing so as not to decrease their immediacy by the inappropriate addition of sonic space to them.

There are six surround-sound modes: TV, Music, Full, Mono, Dolby Pro Logic, and THX Cinema. All employ the center speaker, which is not used in any of the other modes. Dolby Pro Logic and Home THX processing should be familiar to most readers, but the Lexicon processor provides an unusual amount of control over these modes. In Dolby Pro Logic, for example, you can change the level of the front and surround speakers relative to



the center speaker; in THX Cinema mode you can switch out the THX “re-equalizer” filter, which may excessively dull some soundtracks and TV broadcasts.

The four Lexicon-specific surround modes deserve some explanation. Full, as it is called on the remote, is short for Full Range, the simplest of the surround modes. A feed of an unprocessed stereo signal through all the speakers in the system, it is intended for background music or, as the manual puts it, “maximum acoustical output.” Clearly, it's the CP-3 Plus's party setting. Mono (short for Mono Logic) “takes a monaural soundtrack and sends music and sound effects to the sides and rear through a room simulator mode, while keeping dialogue in the center.” An “academy filter” can be switched in to restore the proper



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tonal balance of old monaural soundtracks. The Music mode is called a "7-channel ambience extraction mode," which Lexicon describes as suitable for any type of music. We found it to be the CP-3 Plus's best mode for non-classical music. Although the hall parameters are fixed in Music Surround processing (unlike in the Ambience modes discussed above), user adjustments provide independent control of center and side levels, among other things.

Last, but certainly not least, the TV mode could very well have been called the CP-3 Plus's "universal" decoding mode, even though the instructions modestly state only that it provides surround effects "for television viewing of monaural, stereo, and stereo-synthesized programs." In this mode, and in no other, you can control the amount of directional enhancement, from full Dolby Pro Logic steering to none at all.

The main differences between the original CP-3 and the updated CP-3 Plus lie in the Surround modes, and the most important difference — the one that by itself makes the upgrade both newsworthy and enticing — is the feeding of stereo signals to the surround speakers in the TV and THX Cinema modes. Formerly, not only with the original CP-3 but also with every previous Home THX decoder and all standard Dolby Pro Logic decoders, the surrounds have received what is essentially a monaural signal. Because it is monaural, the surround signal can "image" in the head (especially if the surround speakers are placed to the sides of the listening position), contravening the whole purpose of surround speakers, which is literally to surround or envelop the listener with sound, much as happens with a movie theater's array of multiple surround speakers. In the original CP-3, both the TV and THX Cinema modes would normally be set to add "decorrelation" processing to the surround signal to prevent in-the-head imaging and to reduce the listener's ability to localize the surrounds.

But with the CP-3 Plus's stereo surround processing, in-the-head imaging doesn't occur. The stereo fed to the surrounds is essentially a "bleed" of the front-left and front-right signals during those times when there is no "hard steering" of a prominent effect fully into the surrounds. A hard-steered special effect, such as the first

instant of a forward-moving spaceship flyby, does remain in uncorrelated mono in the surrounds. But such effects usually change very quickly into less specifically steered signals, and the stereo-surround effect will dominate the overall directional impression.

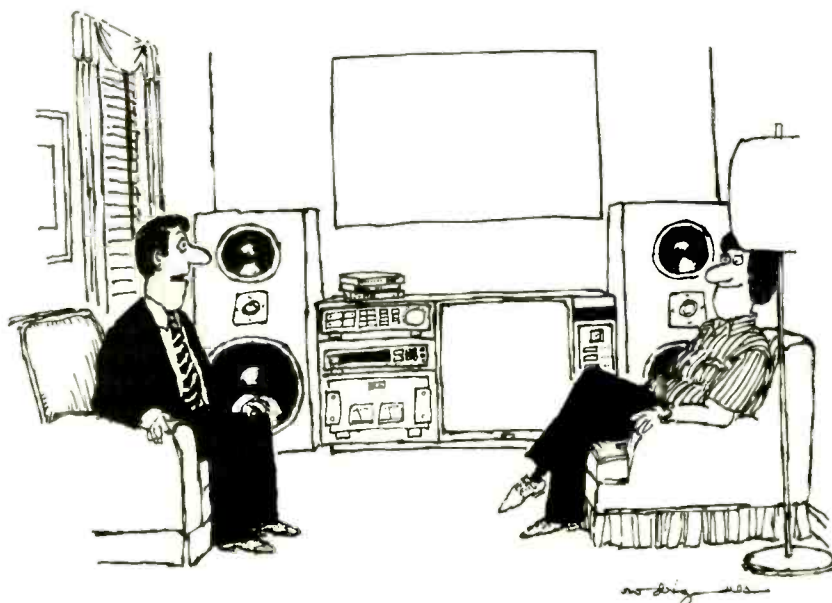
I was unable to find a soundtrack that produced a super-obvious left-surround or right-surround effect — for example, sounds circling through all five speakers — such as can be produced in a movie theater by a Dolby Stereo Digital soundtrack with its discretely encoded left and right surround channels. That doesn't mean that the CP-3 Plus's stereo surround processing cannot produce such effects, just that none of our standard surround program material does. Left-surround to left-front effects (as well as similar right-side movements) were obtained with a couple of space adventures.

There are two definite benefits to the CP-3 Plus's stereo surround processing, however: It succeeds in preventing in-the-head imaging of surround signals, and, unlike standard decorrelation, it introduces no colorations. The original CP-3's decorrelation, which can still be switched on in place of the stereo surround processing in the CP-3 Plus, actually performs quite well in this regard — better than any other decorrelation processing I've heard, in fact. It has less of a "swimmy" quality and produces less of the kind of coloration that turns the surround-steered grand piano in the

Van Gogh segment of Kurosawa's *Dreams* into an clangy saloon upright. But the CP-3 Plus's stereo surround processing had *no* significant side effects and was at all times superior to decorrelation. This was particularly apparent with stereo music, whether embedded in a movie soundtrack or on a music CD, and can be made even more obvious by moving the CP-3 Plus's front/surround balance all the way to the rear. Michael Nesmith's surround-encoded CD "... tropical campfire's ..." (on Pacific Arts Audio) can be recommended as suitable demonstration material.

If you have a CP-3, you should audition the CP-3 Plus to see whether the benefits of the new chip are worth \$250. Considering the cost of a new CP-3 Plus, I think they are. Those still seeking a separate-component surround-sound processor need look no further than the CP-3 Plus. With its Panorama processing, and even more with its Ambience and Reverberation modes, it can enormously increase the sonic realism of music recordings; the CP-3 was always one of the top ambience and reverberation processors. With the addition of stereo surround processing to its clean and accurate surround modes, the CP-3 Plus again defines the state of the art in home theater Dolby Surround decoding. □

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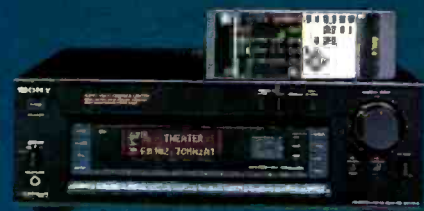
REVIEW

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Car Stereo Review



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SPOTLIGHT



ON



RECEIVERS



New stars of home theater. By Rich

In the world of consumer electronics, the receiver gets star billing because of the leading role it plays in audio and home theater systems. Technically speaking, a receiver combines a preamplifier, power amplifiers, and a tuner in a single control unit. In practical terms, an A/V receiver houses the sonic thrills of your local movie theater. And this main-attraction box, as ubiquitous as Tommy Lee Jones or

Kevin Costner, crowds out supporting electronics. The best receivers can rival separate components in basic performance, and often surpass them in terms of features, usually at lower total cost.

The receiver's current popularity grew out of the reliable, inexpensive Japanese receivers that arrived here in the late 1960's and made stereo hi-fi affordable. Then, in 1967, Marantz —

perhaps the best-known American audiophile company at the time — introduced its first receiver, the Model 18, at \$595 a pricey but auspicious entrance to the category. Marantz did for receivers what IBM did for personal computers: It gave them credibility.

Today's receivers range from the credible to the nearly incredible, at prices from just over \$100 to \$2,000. Many incorporate sophisticated digital

signal-processing (DSP) circuits that alone would have cost \$2,000 a decade ago. The A/V receiver of the Nineties represents a refinement of the four-channel, quadrasonic receiver of two decades ago. Whereas quad was an audio-only system, today's A/V receiver opens the doors to home theater.

Nearly all A/V receivers priced above \$300 now include Dolby Pro Logic, the standard system for decoding movie surround sound. In many receivers, the same circuits used to decode and embellish movie soundtracks can also enliven music reproduction. The Dolby Pro Logic circuit, for example, extracts pleasing ambience from many two-channel music recordings — especially those made live in large, reverberant spaces. A number of receivers also offer “sound-field” modes that add reverberation to the surround channels to simulate various acoustic environments such as a jazz club, a cathedral, or even a stadium. (I’ve never understood why anyone would want to simulate the ear-aching acoustics of a stadium, but you have the option.)

To reproduce movie sound that’ll make you flinch, a Pro Logic receiver should provide the same power to all three front channels and at least a quarter as much to each surround. Equal front power balances the on-screen action, while a little oomph in the surrounds fosters convincing effects.

A growing number of today’s receivers also incorporate tricks from the computer world. On most Technics receivers, for example, touching a single key returns all settings to normal — it’s sort of like hitting the “escape” key on a computer keyboard. And many models are operated via a Windows-like graphical interface that appears on a TV screen. You view menus and make selections by pressing a button on the remote. Sony went so far as to create a one-button, wireless controller similar to a computer “mouse.”

Receiver Revelations

From the mountains of models to choose from, here are a few of the latest A/V receivers that can help transform your basement into the Bijou or your living room into Lincoln Center.



Denon's five-channel AVR-2500 receiver (\$1,000) offers Dolby Pro Logic as well as other user-adjustable surround modes. Its tuner section has Radio Data System (RDS) capabilities, including display of station call letters and format, artist names, and song titles. Power is rated at 85 watts each to the left, right, and center front speakers, 25 watts each to the surrounds.



The Sony STR-D715 (\$430) lets you create labels for all external inputs, and its supplied remote operates just about any brand of component you might plug in. A Theater mode adds reverberation to the standard Dolby Pro Logic surround setting. Power for the five outputs is rated as 80 watts each for the front channels, 25 watts each for the surrounds.



In designing the AV716 receiver (\$749), NAD concentrated more on performance and ease of use than a multitude of special features. The AV716 provides plenty of audio and video inputs, Dolby Pro Logic as well as a few alternative surround modes, and ample power, with ratings of 55 watts per channel across the front and 20 watts for each surround.



Yamaha's RX-V2090 (\$1,499) offers an "enhanced" Dolby Pro Logic mode, 70mm Cinema DSP, and other Digital Sound Field modes based on measurements of actual performing locales; there's even a connection for a future outboard Dolby AC-3 decoder. Power? Try 100 watts each for the main front speakers, 35 watts each for two front effects speakers and two surrounds.

Not only will they bring pleasure to your senses of sight and sound, but many of them will also appease and please your psyche when it comes to operating them.

The Sherwood RV-4050R (\$279) surrounds you for a pittance. One of the least expensive Dolby Pro Logic receivers, it provides a full 50 watts to each of the three front channels and 20 watts to the surround speakers. Sherwood offers all of the necessary features, including a universal remote control with center and surround level controls, automatic input balancing, and test tones for optimizing Pro Logic performance. You can even adjust the digital surround delay. All that *and* a blissfully simple front panel with a camcorder input.



The Marantz SR-92mk2 (\$1,149) is rated to deliver 110 watts to the front left and right speakers, 75 watts to the center, and 35 watts each to the surrounds. Two remote controls are supplied, a full-featured "learning" remote (shown) and a simpler "EZ" remote, and there is a clock-timer that can be set to make unattended recordings.

The Sony STR-D715 (\$430) solves an old problem of receivers: too few properly labeled inputs. With the exception of the tuner input, which Sony takes for granted, the front-panel cursor pad lets you step through the alphabet and create a label for each input; when one is selected, its label appears in the front-panel LCD window. What's more, the supplied universal remote will operate just about any brand or type of component you plug into the STR-D715, from TV's to laserdisc players. The receiver supplies 80 watts per channel across the front and 25 watts to the surround outputs. Going one step beyond Pro Logic, the Theater setting adds reverberation to the decoded Pro Logic sound, creating the illusion of a larger space.

If the dozens of buttons on the STR-D715's remote intimidate you, consider Sony's STR-G1ES (\$1,700). The receiver's egg-shaped VisionTouch remote has only one button and communicates via radio waves instead of the more conventional infrared. In much the same way that you operate a computer's mouse, you simply point the egg toward the TV screen and click on the icon representing the function you want. You can also assign "macros" to menu selections so that several functions can be activated with one command, like starting a chain reaction of dominoes. The simplicity of the remote extends to the STR-G1ES's clean front panel.

Many receivers employ DSP in one form or another, usually implemented



At \$279, Sherwood's RV-4050R is one of the least expensive Dolby Pro Logic receivers available, but it has all the features most people will need. The uncluttered front panel has a camcorder input, the universal remote has surround-level controls, and the amp section is rated to deliver 50 watts each to the front channels and 20 watts to a pair of surrounds.



Onkyo's TX-SV525DSP (\$580) incorporates an all-in-one, 24-bit DSP circuit chip designed in collaboration with Motorola to enhance versatility and performance. There are eight surround modes besides standard Dolby Pro Logic, and power is rated as 60 watts per channel across the front, 25 watts for each of the surrounds.

in several integrated-circuit chips. To keep costs down, some manufacturers use chips that operate with only 8 bits of data at a time, or at most 16 bits, which limits the range and quality of DSP effects. Onkyo teamed up with Motorola to design a single advanced chip to handle all DSP functions, the 24-bit 56004 DSP. Incorporating Dolby Pro Logic along with eight surround modes, the chip supercharges Onkyo's older TX-SV515PRO receiver into the new TX-SV525DSP (\$580), giving it a versatility and level of performance comparable to those of much more expensive models. The TX-SV525DSP delivers 60 watts per channel across the front and 25 watts each to the surrounds.

NAD could easily borrow a phrase from President Clinton's campaign book, with one slight change: "It's the sound, stupid." After watching the competition wrap itself in multitudes of modes and the controls to go with them, NAD went in the opposite direction with the AV716 (\$749), a refreshingly simple-to-operate A/V receiver that focuses on performance rather than features (a.k.a. "bells and whistles"). It provides enough audio and video inputs and outputs to satisfy people who find their entertainment in music and movies, rather than in receivers. NAD builds in Dolby Pro Logic and a few audio surround alternatives, along with 55 watts for each front channel and 20 watts for each surround. It leaves out complexity and confusion.

The Marantz SR-92mk2 (\$1,149) allows you to have your movies and

your Beethoven, too. With a couple of optional accessories, you can watch a movie with a Dolby Pro Logic soundtrack in one room while an audio program plays in another room. In Pro Logic mode the SR-92mk2 pumps out a hefty 110 watts to the front left and right speakers and 75 watts to the center channel. Each surround channel receives 35 watts. Realizing that some people may not have the fortitude to operate the sixty-nine-key, three-switch learning remote that comes with the SR92-mk2, Marantz also supplies the EZ remote, a simple device that gets the job done. Moreover, Marantz gives you more video for the money by including two S-type video connectors for switching video gear. And thanks to its built-in clock-timer, you can even use the SR-92mk2 as an extravagant clock radio or to make recordings while you are away. Plug your tape deck into its switched AC outlet and take off. This Marantz receiver is far superior in performance and versatility to the original Marantz Model 18 at a fraction of the price (adjusted for inflation), making it a most credible value.

Some receivers allow you to manually preset your favorite radio stations by category, such as rock, jazz, talk, and so on. The Denon AVR-2500 (\$1,000) does it for you — provided the stations in your area broadcast Radio Data System (RDS) signals. The inaudible RDS signal sends a station's call letters and format ID to the receiver's front-panel display, so you can scan the radio band by programming category (there are twenty-two categories to choose from), and it can also display emergency warnings and a wealth of other information. Not many

radio stations transmit RDS signals at the moment, but the AVR-2500 is ready for them. Of course, when you want to watch a movie rather than the RDS display, the AVR-2500 provides Dolby Pro Logic, an ample 85 watts for each of the front channels, and 25 watts for each of the surrounds. In addition to the standard, drab, all-business instruction manual for the AVR-2500, Denon includes a forty-page "guide book," humorously illustrated but in somewhat fractured English.

The graphical user interface (GUI) and Intelligent Control System used in Pioneer's new VSX-704S (\$980) go beyond simple on-screen menus. You select and initiate receiver functions by using five action keys on the remote control to move an on-screen finger. Turn off the TV and the same buttons serve as conventional remote keys. The system also provides a one-touch macro function that initiates a whole sequence of events: Touching the VCR button, for example, also turns the TV on, selects the appropriate input on the TV and receiver, and powers up the VCR, which immediately goes into play mode. The entire operation graphically unfolds on your TV screen. The control system works with any brand of component, and a small infrared receiver/repeater unit sprays the infrared commands around the room so that they reach all components, wherever they're placed. The same system is also used to operate Pioneer's forthcoming flagship receiver, the VSX-D3S (\$1,925), the first with onboard Dolby Surround AC-3 decoding for six discrete channels; the VSX-D3S is scheduled to arrive on dealer shelves in August.

Supercharged Pro Logic

Lucasfilm attempts to improve Dolby Pro Logic sound with its Home THX enhancements, which help translate soundtracks mixed for a large movie theater to the smaller home environment. THX-certified receivers must meet stringent power and distortion specifications, deliver a frequency response more closely approaching what you'd hear in a theater, and "de-correlate" the outputs from the mono surround channel to enhance the sense of envelopment.

Technics introduced the first complete Home THX system five years ago at a price of \$12,000. Now the company has achieved another THX

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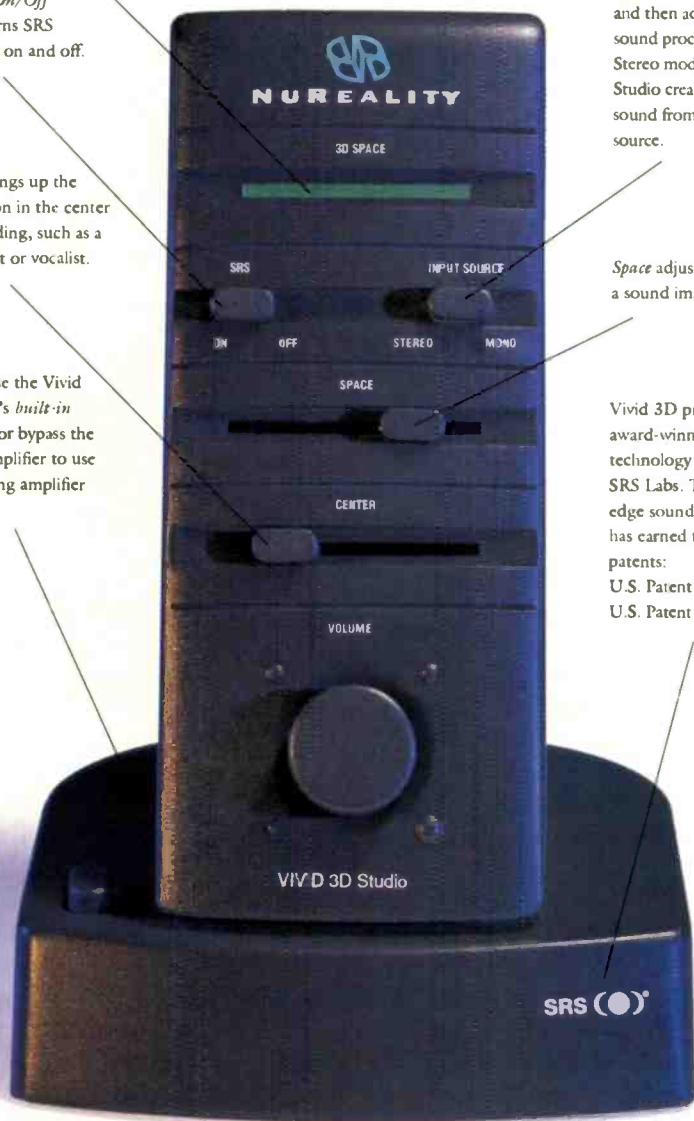
You can use the Vivid 3D Studio's *built-in amplifier*, or bypass the internal amplifier to use your existing amplifier system.



The *Input Source* control lets you select Mono when using mono audio source material, and Stereo for stereo source material. In Mono mode, the Vivid 3D Studio synthesizes a stereo signal from a mono source, and then adds SRS 3D sound processing. In Stereo mode, the Vivid 3D Studio creates SRS 3D sound from a stereo source.

Space adjusts the width of a sound image.

Vivid 3D products employ award-winning SRS technology licensed from SRS Labs. This leading-edge sound technology has earned the following patents:
U.S. Patent No. 4,748,669
U.S. Patent No. 4,841,572



*This specially recorded CD recreates the experience of 3D sound from any CD player. The demo CD is available for a \$5.95 shipping and handling charge which can be fully credited toward the purchase of a Vivid 3D system. This offer applies only to Vivid 3D products purchased directly from NuReality. International orders do not include freight charges, duty or VAT.

** Quote excerpted from a review of the **SRS** (●) technology from the April 1992 issue of *Audio Magazine*. The Vivid 3D sound enhancement system won the Retail Vision "Best Product" award in May 1994, and the Innovations award from the International Consumer Electronics Show in June 1994. © 1995 NuReality. All rights reserved. SRS is a registered trademark of SRS Labs. All product names are trademarks or registered trademarks of their respective holders. SR3

feat. the SA-TX1010 receiver, which is slated to sell for only \$999 when it ships to stores this summer. Technics managed to keep the SA-TX1010's quality and power high, without inflating its size or price, by using a proprietary Class H+ power module assembled by robots under clean-room conditions in its Sendai factory in Japan. The module delivers a volcanic 120 watts to each of the front channels and 120 watts total to the surrounds. There won't be any doubt about when Vesuvius erupts in *The Last Days of Pompeii*. The Technics Sound Stage Imaging System includes a "live" mode for music that directs vocals through the center channel for more lifelike imaging. And along with its on-screen operating displays, the SA-TX1010 also provides on-screen help, so when you're stumped you won't have to retrieve the manual from the bottom of the bird cage. In case you don't have the TV on, some of the help messages also appear on the receiver's fluorescent display. Technics includes S-video jacks on the rear panel so that the

video can look as exemplary as the audio sounds.

The Force is with Kenwood's new KR-X1000 (\$999) THX receiver, too — 100 watts of force to each of the front channels and 50 watts apiece to the surrounds. For proper THX levels, and to keep you from jumping out of your seat every time you change sources, the KR-X1000 memorizes the desired level for each input. And to help sharpen vocal clarity, often desirable with movie soundtracks, Kenwood adds a "presence" control. The unit has a full complement of audio and video jacks, including S-video.



Cecil B. de Mille would be proud of the \$1,499 Yamaha RX-V2090. It's a spectacle among receivers, a production so impressive that it requires seven channels of sound to tell its story. Why settle for just Dolby Pro Logic (which the RX-V2090 includes) when you can have enhanced

Pro Logic in the form of Yamaha's 70mm Cinema DSP mode, the audio equivalent of Super Panavision? While many receivers offer generic "club" or "stadium" sound-field settings, Yamaha offers settings based on actual measurements of such spaces as the Roxy Theater in Los Angeles, the Village Gate in New York City, and Anaheim Stadium. Complementing the three front channels rated at 100 watts each and the surround channels at 35 watts each are a pair of front effects channels at 35 watts each. There's even a provision for connecting an outboard Dolby AC-3 surround-sound decoder, and, of course, S-video jacks and on-screen displays.

In 1968 a first-run movie cost \$3 and a good two-channel stereo receiver cost \$300. Today a first-run movie costs \$8 and a good surround-sound receiver costs about \$500. For the cost of a \$3 video rental or a satellite pay-per-view, those same movies can sound as good at home as at a theater. B-movies still abound, but today's star A/V receivers rate two thumbs up. □

The Traditional Receiver

Some people prefer to keep their movies and music apart, or perhaps have no interest in video at all. Receiver manufacturers have not forgotten musical separatists. Most of them offer at least one two-channel receiver, usually at the bottom of the line, but several continue making state-of-the-art two-channel models. Some companies, among them Denon, Nakamichi, Radio Shack (through its



JVC's RX-315TN (\$260) is a two-channel receiver rated for 105 watts per channel. It features forty radio presets and the Enhanced CompuLink control system, which enables it to communicate with other JVC components.

Optimus brand), and Yamaha, field a range of models. Traditional stereo receivers, whether budget or extravagant, come well stocked with features and ample power. By our rough count about fifty two-channel audio receivers remain, accounting for some 15 percent of the models on the market.

One example is JVC's RX-315TN (\$260), which delivers 105 watts per channel, an unheard-of amount of power in this price range just a few years ago. The RX-315TN lets you assign presets to forty of your favorite radio stations and select them from the full-featured remote control. The receiver also incorporates JVC's Enhanced CompuLink control system, which allows it to "talk to" other JVC compo-

nents. When the RX-315TN is connected to a JVC compact disc player, for example, all you have to do is hit the play button on the CD unit and the receiver will automatically turn on and select the proper input.

Harman Kardon stresses the sound quality of the HK3550 (\$529) receiver, specifying total harmonic distortion as a mere 0.09 percent at its rated output of 50 watts

per channel into 8 ohms. There aren't many fancy features, but you do get thirty AM/FM presets, two tape loops, and several inputs.

Nothing else matches the pure elegance of the B&O Beomaster 7000 (\$2,000) receiver. Although designed to be used as part of a system with other B&O components, it can also be connected to other brands. No visible switches mar the sleek front panel, as the receiver is operated by the equally elegant and unusual Beolink 7000 touch-screen remote control. In addition to displaying the receiver's operating status, the remote also shows RDS information.

So if two channels content you, sit back and relax. There are still plenty of good stereo receivers to choose from. — R.W.

The all-weather Boston® Voyager thrives in the toughest environments (including the critic's listening room).

When it comes to the ruggedness necessary for indoor/outdoor use, most loudspeakers are about as helpless as a kitten up a tree. But not the Voyager speaker from Boston Acoustics. It brings impressive sound to your living



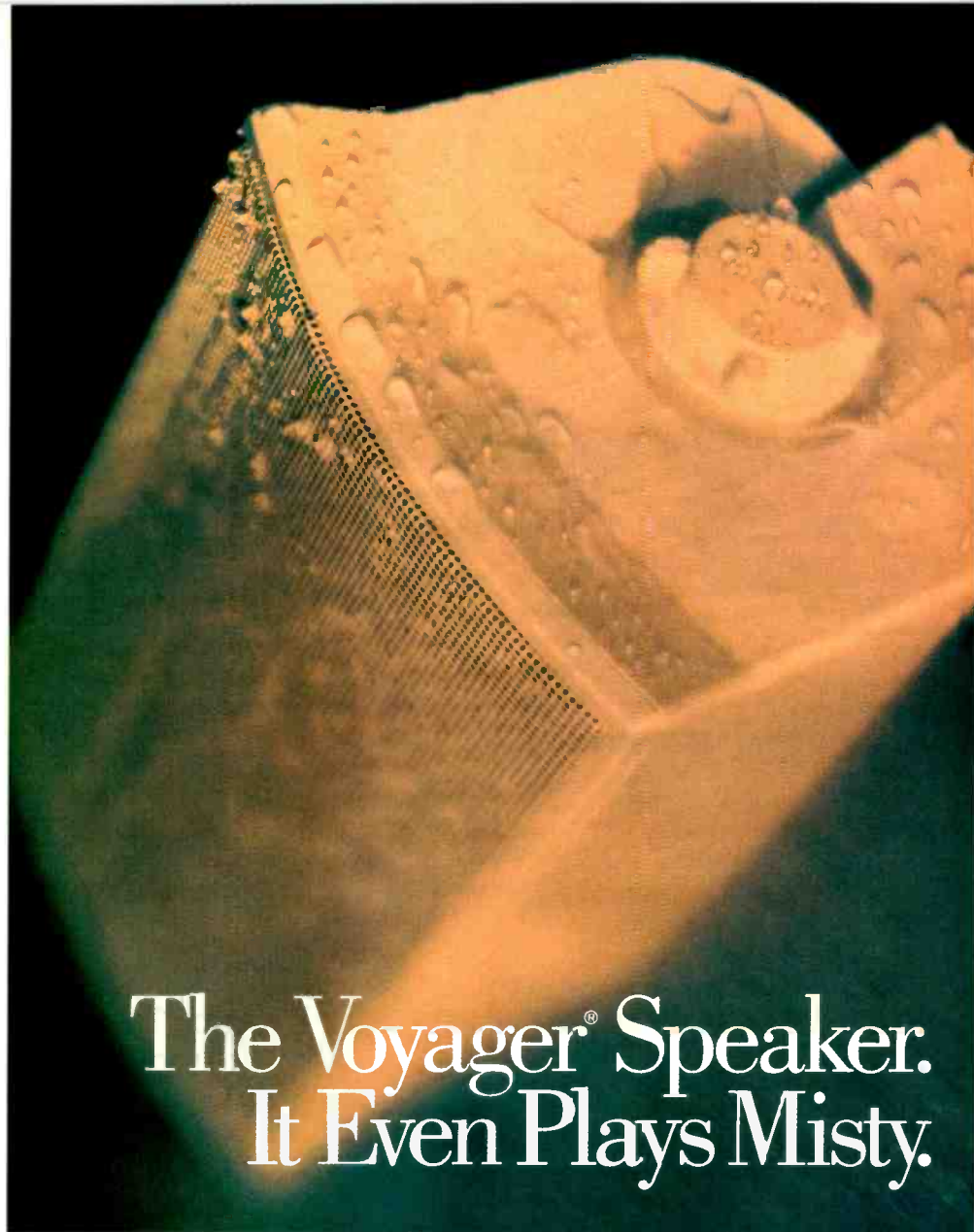
One Voyager owner told us his speakers were A-OK after being thrown several hundred feet by hurricane Andrew (oh, it was attached to its owner's porch at the time).

room, patio or your Swan-53 custom-built sloop. In fact, *Stereo Review* says that Voyager "...sounds better than many highly regarded home speakers." Not an easy feat. Here's how we did it. First, the housing of the Voyager is made of Lexan® resin—the same stuff used to make bulletproof glass. So

Voyager is tough enough to withstand anything this side of a small meteor shower. In front, the Voyager's grille is a highly resilient grade of stainless steel. So are its mounting bracket,



Its ability to put the kibosh on corrosion makes Voyager perfect for marine use. Plus, we're reasonably sure it can withstand most great white shark attacks.



The Voyager® Speaker. It Even Plays Misty.

hardware and screws. Its cone and tweeter dome are made of moisture-, heat- and cold-resistant copolymer. Even the speaker terminals are plated with 14K gold—a material that resists corrosion, and looks pretty darn snappy, too. Finally, to ensure that moisture on the outside of the Voyager stays there, we use specially designed gaskets to create a watertight seal. As a result, the Voyager



The Voyager is not only a rugged individualist. It's also part of a family, including Runabout I and Runabout II speakers.

actually floats. And there's more; the Voyager is part of a family of indoor/outdoor speakers, including the Runabout™ I and Runabout II. Both Runabouts feature the resiliency of a tough polypropylene enclosure, plus

corrosion-resistant grilles, brackets and hardware. More importantly, they feature the Boston Sound—a sound that is tight, clean and smooth. But don't take our word for it. Check out the entire line of indoor/outdoor speakers at your local Boston dealer. But, please, bring your own Johnny Mathis records.

Boston Acoustics
Just what's important

Digital Surround Comes

Dolby's new 5.1-channel digital surround system is making the move from movie theaters to home theaters.

On January 31, *Clear and Present Danger* became the first movie released on laserdisc with a Dolby Surround AC-3 Digital discrete 5.1-channel soundtrack in addition to the usual matrix Dolby Surround-encoded stereo soundtrack. That disc, others following it, and the equipment now becoming available to play back their AC-3 soundtracks represent an important leap forward in the evolution of home surround-sound reproduction — an advance that will eventually pervade home video media. But to understand this development and its significance, we first need to understand the history behind it, what it does that is new, and a little bit about how it works. That story takes us back twenty years, to the introduction of Dolby Stereo in movie theaters.

When Dolby Stereo first came on the scene, probably no one anticipated how profound its influence would be. Dolby's original goal was to improve the quality of 35mm film sound by means of its A-type noise-reduction system, which by then was well established in professional music recording. Benefits would include lower noise and distortion, wider bandwidth, and stereo, yet the new soundtracks would still be easy to manufacture and compatible with the mono theater playback systems prevalent at the time, so that studios and distributors would not be saddled with the costly and confusing burden of maintaining dual print inventories.

Two-channel stereo is problematical in a theater, however, since people seated to the far right or left of the auditorium would tend to hear sounds that should be centered on the screen as coming from the speaker nearer to them. Dolby's solution was to adapt the matrix encoding technology that had been developed for quadraphonic phonograph records to the needs of cinema sound, creating what it called the MP (motion-picture)

matrix. Instead of front left and right and rear left and right, there would be three front channels — left, center, and right — and a surround channel, all packed down into two channels during recording and then unpacked back to four on playback in theaters equipped with the decoders and other equipment necessary for Dolby Stereo reproduction. The center channel serves to keep things like dialogue and most sound effects locked to the middle of the screen, where they belong, while the left and right speakers provide stereo spread for music

By Michael Riggs

and some effects. The surround channel, which in theaters is reproduced by multiple speakers arrayed along the sides and rear of the auditorium, supplies ambience and the occasional effect involving placement of sounds away from the screen or motion from front to back or back to front.

Although the very first movie to use the full Dolby Stereo system was *A Star is Born* in 1976, it was with the release of *Star Wars* in 1977 that Dolby Stereo roared over audiences' heads and into the public consciousness. Today, many thousands of movie theaters are equipped for Dolby Stereo, and feature films, almost

PHOTO BY DAN WAGNER

At right, a dynamic duo from Pioneer. The CLD-D704 CD/laserdisc player (top, \$1,235) boasts automatic side change and an AC-3 output. The VSX-D3S A/V receiver (bottom, \$1,925), available in August, provides both Dolby Pro Logic and AC-3 decoding and is rated at 90 watts each to all five channels.

round Home



without exception, are released with Dolby Stereo soundtracks as a matter of course.

But the impact of Dolby Stereo did not end there. Because of the matrix encoding scheme, a Dolby Stereo recording can be conveyed by any two-channel audio medium. When stereo hi-fi VCR's came along in the 1980's, hi-fi video releases wound up carrying Dolby Stereo soundtracks without anyone having to do anything special to make it happen. Similarly for laser videodiscs and stereo TV. From that point it was just a short step to the realization that with an appropriate decoder, a few extra speakers, and amplifiers to drive them one could have Dolby Stereo at home. Thus was born home theater.

Dolby Pro Logic

What's known as Dolby Stereo in theaters goes by other names at home. Dolby Surround is the name for the matrix-encoding scheme itself. When you see the Dolby Surround logo on a videotape or laserdisc or in TV program credits, it means that the soundtrack is two-channel stereo with Dolby four-channel matrix-surround encoding, just like on film. The Dolby Surround logo on a receiver or surround processor indicates that it performs very basic, passive decoding to extract the surround channel from a matrix-encoded soundtrack and send it to speakers at the sides or back of the room. The incoming left and right channels go to the front left and right speakers unaltered, and that's it. Center-channel sounds, which the encoding matrix places identically in the left and right channels, are localized as phantom images midway between the two front speakers, just



as in conventional two-channel stereo.

Much more common these days, however, is the Dolby Pro Logic logo, which indicates a more sophisticated decoder that fully emulates the de-



Runco LJR II CD/laserdisc player with AC-3 output (top, \$4,995 with D/A converter, \$3,995 without), EAD TheaterMaster preamplifier with AC-3 decoder (above, \$5,950), and Perreaux AVP-6 A/V preamp with AC-3 decoder (below, \$4,995).

coders in theaters, extracting the center channel as well as the surround and, when appropriate, actively canceling that information from the signals going to the left and right speakers. In other words, the decoder tries to "steer" signals to the correct channels, and thus is said to incorporate steering logic — hence, Dolby Pro Logic. That



the result can be very satisfying is evident from the enormous popularity of home theater and the near-ubiquity of Dolby Pro Logic decoding in current A/V receivers.

As good as Pro Logic is, however, it cannot fully overcome the fundamental limitations of matrix encoding. In the Dolby Surround matrix, channel separation between left and right and between center and surround is inherently high, but between center and left

or right and between surround and left or right it is quite low (about 3 dB) without signal steering. Precise sound localization requires reasonably high channel separation, on the order of 15 to 20 dB. Steering (or directional enhancement, as Dolby calls it) can provide the necessary subjective improvement; unless applied carefully, however, it can also cause disturbing side effects.

What it boils down to is that the decoder is trying to create high separation based on low-separation directional information. When a sound in some direction is much stronger than other sounds, the decoder will steer in that direction, relying on the strong sound to mask the change in directionality of others that get pulled along with it. As the difference in level between the strongest sound and others diminishes, the decoder will reduce the amount of steering applied to minimize the chance that you will notice how it is shuffling them around. But certain situations can still cause trouble. Trying to track a loud, fast-moving sound against a constant, lower-level background might cause the background to seem as though it were sloshing around in pursuit of the foreground, for example.

Engineers creating Dolby Surround soundtracks listen through a Pro Logic type decoder so that they can hear such problems and adjust the mix to prevent them. They also know in advance that there are certain things they simply can't do. They cannot, for example, put any sound critical to the story solely in the surround channel. The reason is that the matrix encodes the surround channel as signals of equal amplitude in the left and right channels but opposite in phase. So any time the two matrix-encoded channels are mixed together to mono, their surround-channel components cancel and disappear from the output — no good for mono theaters or video setups. All such limitations would vanish in a surround system that replaced matrix-encoded stereo with four (or more) completely separate, discrete channels, unleashing filmmakers to create more exciting and realistic sound fields for their productions.

The AC-3 Solution

The basic problem is where to get the room for the extra channels a fully discrete system would require. Audio/video media, whether tape, disc, or broadcast, must necessarily allocate the bulk of their signal bandwidth to the video portion of the program. For both existing and currently anticipated formats, that means the bandwidth budget for audio is fairly limited.

Fortunately, the transition from analog to digital audio has opened up avenues for attacking the problem by means of what are known as perceptual coders — systems that reduce the data rate necessary for full fidelity by taking account of the way we hear. They work by dividing a conventional digital audio signal into narrow frequency bands and analyzing the contents to determine which bands are sonically essential and how many bits out of the total available should be allocated to each one. Some of the decisions are obvious. A band with no energy in it can be dispensed with — no need to waste a lot of bits on silence. Other choices are not so easy, involving subtle evaluations of how one signal is masked by others adjacent to it in frequency or time.

People are often suspicious of perceptual coding on the grounds that any

loss of signal information *must* degrade perceived sound quality at least a little. In fact, however, perceptual coders are modeled on the way the human ear works, and though a bad one can indeed make a mess of things, a good one can be almost, or even completely, transparent, delivering an output difficult or impossible to distinguish by ear from the uncompressed input. The reason is that we are physiologically incapable of discriminating every component of a complex array of sounds striking our eardrums. Some sounds are simply too soft for us to hear, while others are masked by louder ones in the same spectral/temporal neighborhood. The consequences of audibility thresholds and masking are so deeply embedded in everyday life

AC-3's fully discrete channels and stereo surrounds enable creation of much more realistic and engaging sound fields.

— the inability to hear a whisper from a distance, the need to speak up to be heard in a noisy environment — that we take them for granted. It's only in the context of high-fidelity audio reproduction, with its traditional ideal of waveform accuracy, that the ideas seem foreign initially.

It is true that departing from the goal of waveform replication also involves giving up a degree of certainty in the results. Carried far enough, high waveform fidelity guarantees high audible fidelity. Perceptual coding involves not only careful application of psychoacoustic theory, but also plenty of careful listening to arrive at what will always be a somewhat more tentative conclusion about performance. Worries and prejudices notwithstanding, however, the performance *can* be superb.

Perceptual coding made its debut in consumer audio with the introduction of the Digital Compact Cassette (DCC) and MiniDisc (MD) recording formats, which are based on the Philips PASC and Sony ATRAC coding systems, respectively. But at about the same time another such system was making its debut in movie theaters as part of a new, fully digital, discrete-

multichannel film-soundtrack format from Dolby Laboratories called Dolby Stereo Digital. Introduced in very limited release with *Star Trek VI* and in full release with *Batman Returns*, Dolby Stereo Digital has now been used in well over a hundred feature films.

Dolby Stereo Digital is referred to as a 5.1-channel system, by virtue of its use of five full-range channels plus a sixth, optional subwoofer-only channel, limited to frequencies below 120 Hz, for productions in which extra-strong low-bass effects are desired. Three of the five main channels are allocated the same way as in ordinary Dolby Stereo across the front, with left, center, and right speakers behind the screen, but the system allows for a true stereo surround feed, with separate signals going to the surround speakers on the left and right sides of the theater.

The core of Dolby Stereo Digital is AC-3. Originally conceived to squeeze discrete-channel surround sound into the tight signal confines of the U.S. HDTV (high-definition television) system now under development, AC-3 is an extraordinarily efficient multichannel extension of Dolby's established AC-2 perceptual-coding scheme, which is used extensively in such applications as broadcast studio-to-transmitter links.

It comes as a surprise to many people that a company so strongly associated with analog noise reduction is also deeply involved in digital audio technology. But the underlying issues of perceptual coding in digital audio are similar to those addressed in Dolby's more familiar analog systems — manipulating the signal to mask the noise in a recording or transmission medium. When you reduce the number of bits used in a digital coding system, the inherent noise will rise. The trick is thus to reduce the number of bits used while allocating the ones remaining to the signal in such a way as to achieve the greatest possible masking of the increased total noise.

Working in the digital domain affords many advantages, however. For one thing, the signal can be divided up into much narrower frequency bands, enabling large gains in masking efficiency. The encoder can also look not only at the signal's past history, but at

its immediate future as well, so that it knows what *will* happen to the signal as well as what already has. And the encoder can embed in the bit stream explicit instructions to the decoder about how the audio data should be handled, instead of the decoder's having to base its actions entirely on the characteristics of the audio signal itself. Accurate decoding is thus insured while maintaining a significant degree of flexibility and facilitating improvement of the encoding system without need for changes to the decoder hardware.

AC-3 differs from AC-2 and most other perceptual-coding systems in that it is designed specifically for multichannel applications. That is, it is not simply a stack of AC-2 channels. The encoder takes account of what is happening in all channels simultaneously, exploiting opportunities for masking between channels as well as within them and allocating bits to the various channels dynamically according to their requirements. That enables the channels with the greatest signal demands at any given moment to draw a larger proportion of the total bits available in the collective bit pool, which itself is filled and emptied at a fixed rate. The result is greater coding efficiency with better overall sound quality than could be obtained using multiple single-channel encoders and decoders.

Dolby Stereo Digital crams its six (or five and a fraction) channels of high-grade audio into a data stream running at 320 kilobits per second (kbps), a little less than a quarter of the approximately 1.4-megabit-per-second (Mbps) data rate of an ordinary two-channel CD. Dolby Surround AC-3 Digital, the consumer version being used for laserdisc, HDTV, and other media, runs at a 20 percent higher data rate, 384 kbps, for the same number of channels, which should enable it to achieve slightly better quality sound with very difficult signals.

Bringing It All Back Home

Conceived for HDTV and first used in the movies, AC-3 is finding its initial home application on laserdisc. A conventional laserdisc has four audio channels: two CD-type digital audio channels, usually with matrix Dolby

Surround encoding, and two AFM (audio frequency modulation) analog channels. Although sometimes used for a second-language soundtrack or for commentary tracks, the analog channels most often carry the same soundtrack as the digital channels, compressed when necessary to fit into the analog channels' more restricted dynamic range. Pioneer and Dolby developed a technique for replacing the right analog channel with a full Dolby Surround AC-3 soundtrack. That

A speaker setup put together for Dolby Pro Logic playback should work just fine for Dolby Surround AC-3 reproduction as well.

means that laserdiscs can now be released with an AC-3 soundtrack while retaining both the main digital channels for a standard Dolby Surround encoded stereo soundtrack and the left analog channel, which can be used for a mono version of the soundtrack or a commentary track. The availability of all those soundtracks on the same disc is important, since it eliminates any need for separate inventories of AC-3 and non-AC-3 discs. AC-3 releases remain fully compatible with ordinary stereo and Pro Logic surround-sound equipment as well as with AC-3-capable components, which means that collectors can buy and enjoy the discs without immediately upgrading their systems for AC-3 playback.

Taking advantage of the AC-3 soundtrack does require some new hardware. Foremost is the need for a Dolby Surround AC-3 decoder, whose primary task is to demultiplex the data from the AC-3 composite bit stream into the five or six individual channels and prepare them for the digital-to-analog (D/A) converters that will feed the final analog outputs to the system's power amplifiers. The actual decoder chip (which will usually handle Dolby Pro Logic decoding as well) can be built into a completely stand-alone decoder unit designed to add AC-3 capability to an existing surround-sound system, into a full-fledged surround processor or preamp, or even into an A/V receiver. All three types of prod-

uct will be coming on the market this year, particularly in the latter half. In the beginning, prices will probably not go below \$500 or so for the most basic add-on decoders and will range up into the thousands of dollars for high-end processors. The first receiver with AC-3 capability, Pioneer's VSX-D3S, is slated to come in this fall at a little under \$2,000.

You will also need an AC-3 program source, which at the moment means a laserdisc player with an AC-3 output. The first such players, which start at prices just a little over \$500, have outputs pulled directly off the laser pickup, requiring an external demodulator to extract the AC-3 bit stream for input to a decoder. (It is actually pretty easy for someone who knows what he is doing to add such an

output to an existing laserdisc player, though no manufacturer we know of is yet planning a formal upgrade program.) The demodulator can be a completely separate unit that in turn feeds a standard digital input on a decoder, or it can be built into the decoding component, as it is, for example, in the Pioneer receiver. Future sources built around AC-3 audio, such as HDTV sets and DVD players (see "Digital Videodisc," page 68), will plug directly into the digital inputs on decoding equipment; for compatibility with non-AC-3 systems, they will also have the ability to provide conventional analog Dolby Surround-encoded stereo outputs, or even straight stereo or mono outputs, generated internally from the full 5.1-channel AC-3 soundtrack.

Upgrading an existing surround-sound system for AC-3 will usually be easiest when it is built around a separate processor. It will be complicated for those with A/V receivers or integrated amplifiers that lack preamp-out/main-amp-in loops for all five channels (or other dedicated means of hooking in an external AC-3 decoder) — possibly to the point of requiring a new receiver or amp. What you shouldn't have to worry about are the speakers: A setup that works for Pro Logic should also work for Dolby Surround AC-3, only better. You won't, as you may have heard, need full-range surround speakers, for example. AC-3

TFM-35x



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CIRCLE NO. 17 ON READER SERVICE CARD



decoders provide great flexibility in how bass is handled. You can route the low frequencies for all or selected channels to one or more subwoofers, or you can put all the bass into the front left and right speakers. As long as the crossover is below 100 Hz or so, there will be no ill effects in terms of imaging or spatial impression. Nor will there be any necessity to abandon bipole or THX-style dipole surround speakers, as some have suggested. They, too, will deliver the goods.

The Payoff

So what are the goods? The benefits of Dolby Surround AC-3 over Dolby Pro Logic are basically four: fully discrete channels, stereo surrounds, potentially wider dynamic range, and control of dynamic range. The most important, in terms of performance, are the first two. Together they enable significantly more engaging and realistic sound fields than are possible with matrix surround. The compromises and limitations of conventional Dolby Surround fall away. The engineers mixing the soundtracks will have more fun, and so will you.

AC-3 also enables wider dynamic range if you want it, and less if you don't. The input to a Dolby Surround AC-3 encoder is typically a six-track, 18- or 20-bit, 48-kHz digital feed, and the signal normally will stay digital until it hits the D/A converters at the output of the AC-3 decoder in the playback system — no intervening analog processing or cycles of analog-to-digital and digital-to-analog conversion. But when you want to keep the sound at a more even level than heard in theaters (a common desire, especially among those who live in apartments or who sometimes watch late at night), AC-3 provides means for compressing the dynamic range in the decoder. It is even possible for a director to program how the compression will be applied as you crank it up.

Like most advances in audio, Dolby Surround AC-3 is starting off small and relatively expensive, but all that should change over time, especially after digital videodisc and HDTV are available. It would not be surprising to find AC-3 decoders in the majority of A/V receivers a few years from now, following in the footsteps of Pro Logic, which is now practically a standard feature. AC-3 may not be as revolutionary an advance as Dolby Stereo was two decades ago, but it is another big step forward. □

Digital Videodisc

AC-3's most important home in the near future may turn out to be not laserdisc, or even HDTV, but digital videodisc. Whereas laserdisc delivers as much as an hour of analog video per 12-inch side, DVD promises more than 2 hours of near-master-quality digital video per side on discs the size of an ordinary CD. If all goes as expected, you should be able to go out next year and buy, for as little as \$500, a component that will play not only these new discs but also CD's, and in some cases laserdiscs or other optical discs as well.

DVD should not be confused with the current Video CD format, which uses existing CD technology and MPEG-1 audio and video compression. The resulting discs offer only 74 minutes of playing time, two-channel audio, and much lower video quality. DVD is based instead on new high-density discs — with five to fourteen times the total data-storage capacity of an ordinary CD — and uses the superior MPEG-2 compression system for the video.

Two competing DVD systems have been announced. The front-runner is a system developed by Toshiba and Time Warner, which has already gained backing from Thomson (RCA, GE, ProScan), Matsushita (Panasonic, Technics, Quasar), Pioneer, Hitachi, JVC, Denon, Mitsubishi, MCA (Universal), MGM/UA, and Turner Home Entertainment. It uses a dual-sided disc with the same total thickness as an ordinary CD. Each side offers 5 gigabytes of storage and a maximum playing time of approximately 135 minutes, so a single disc could easily hold two complete movies, one on each side. Video coding is variable-rate MPEG-2, with an average data rate of approximately 4 megabits per second (Mbps). AC-3 has been indicated (and demonstrated) as the audio coding system, with mono to full 5.1-channel capability, depending on the soundtrack.

The dark horse in the race is the Sony/Philips entry, which employs a single-sided disc that can be made with single or dual data layers. Single-layer discs will have a data capacity of 3.7 gigabytes; dual-layer discs double the capacity to 7.4 giga-

bytes. Playing time is approximately 135 minutes per layer. Video coding is again variable-rate MPEG-2, in this case at an average rate of approximately 3 megabits per second. Sony and Philips are mum so far on audio coding, except to say that it will support low-bit-rate 5.1- and two-channel soundtracks. The prime contender would seem to be AC-3, however.

In other respects, particularly with regard to functionality, the two systems are much more similar than different. Users will be able to select from the player whether they want full-screen 4:3, letterbox 4:3, or 16:9 playback (on widescreen sets), all from the same data on the same disc. The pan-and-scan directions for full-screen playback of widescreen movies can be programmed into the data stream, and 16:9 playback will be at full vertical resolution rather than the 4:3 letterbox formatted for 16:9. Multiple-language capability is also built-in. Toshiba and Time Warner, for example, say that they will be able to provide at least three soundtracks and four subtitle channels on a full 135-minute side, with a maximum of eight soundtracks and thirty-two subtitle channels. And there will be a parental-lockout feature.

In the very limited demonstrations we've seen so far, DVD has looked superior to laserdisc and very close to the original digital master tapes. And the kicker is that DVD's will cost only slightly more to manufacture than regular CD's — which is to say, less than videocassettes and a lot less than laserdiscs. The key to the higher-density discs is the use of red lasers in place of the longer-wavelength infrared lasers that have been employed up to now for CD. DVD will acquire HDTV capability in a few years when blue-laser technology is ready, boosting disc capacity still further while maintaining the ability to play standard DVD's and other disc formats.

Amazingly, that's not the end of the good news. What else could be done with these discs? Well, in the absence of video, even a single-layer Sony/Philips disc could hold almost 2 hours of uncompressed 20-bit five-channel audio. I can hardly wait. — M.R.

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Bass Haven

It pays to know how to handle a hammer when the home theater bug bites. Take Dr. Jon Preston, a forty-year-old anesthesiologist from Dublin, Ohio, a suburb of Columbus. The first time he set eyes on the 30 x 40-foot great room in the home he and his family settled into three years ago, the audiophile/carpenter inside of him went nuts. "I knew it had a lot of potential as an audio/video room, in particular because of its size and the lack of par-



allel boundaries," he recalls. So he drew up plans for a grand entertainment center that would house his projection TV, a dozen or so A/V components, and hundreds of discs and tapes.

The project began with building a wood frame of 2x4's and wiring into it three 20-amp circuits — two for the system and one for lighting. The closet-like triangular structure was designed to have six large storage drawers, ten shelves, three cubbyholes across the top, and a back door that provides access to all system wiring. Once the framing was complete, Preston meticulously finished the cabinet with hand-rubbed solid-oak panels to give it a built-in look. "I glued 3/4-inch strips of oak together to make 18 1/2-inch sheets,

Above, two of the four 18-inch subwoofers Jon Preston built into an enclosure beneath the stairway. Below, the wood frame he built for his A/V center.



which I then planed, cut, and sanded in my workshop to form the shelving," he explains.

Preston loaded the cabinet with an impressive lineup of A/V gear. The system is controlled with a Kenwood KC-X1 THX-certified A/V preamp, which switches four source components: a Sony CDP-X707ES CD player, a Pioneer CLD-2090 CD/laserdisc combi-player, and two VCR's — a Sony EV-S3000 8mm deck for playing home movies and collecting favorite TV shows on tape, and a JVC HR-S6900U Super VHS unit for playing the occasional rented tape.

The next stop on the signal path is an Ashly XR1001 electronic crossover, which provides 24 dB per octave of filtering for a quartet of subwoofers, and an Electro-Voice EQ-215 two-third-octave stereo equalizer used to tweak the main speakers. Preston turned to pro gear because he wanted to run balanced lines to the power amplifiers but found that very few consumer devices have balanced outputs, and the ones that do tend to be "very expensive."

The power chain is three parts NAD, one part QSC — yet another pro-audio name. An NAD Model 208THX amp, a THX-certified power block with balanced inputs that is rated to deliver 250 watts per channel, drives the main speakers, a pair of B&W DM 2000's. Two NAD 150-watt-per-channel Model 2700THX amplifiers fuel the center and surround speakers: one, operating in bridged-mono mode, powers a Polk Audio CS350-LS center speaker, the other a pair of Paradigm two-way in-wall speakers.

Finally, a QSC EX 4000 amplifier literally shocks four Electro-Voice EVX-180 18-inch subwoofers into action. The dual-mono amp is rated to deliver 720 watts per channel into 8 ohms, but since two subs are wired in parallel to each chan-



nel, impedance dips to 4 ohms and power output climbs to a beastly 1,100 watts! "I was looking for a power amp that could handle a 4-ohm load, so I started looking at pro gear," Preston recalls. "I found the EX 4000 to be very quiet except for a noisy fan, so I removed the fan and put it in a separate box that I connected to the amp with a piece of 4-inch tubing."

Why E-V subs? "I wanted subwoofers that I could pump a couple of thousand watts into and not worry about



it," Preston says. The drivers are in a 93-cubic-foot sealed enclosure built into the wall below the stairway leading into the great room. "I checked to see if I could improve performance by adding a vent." Preston notes, "but I discovered that short of using a vent large enough for my three-year-old to climb through, there wasn't much to be gained." Remarkably, nothing vibrates, not even the stair railing.

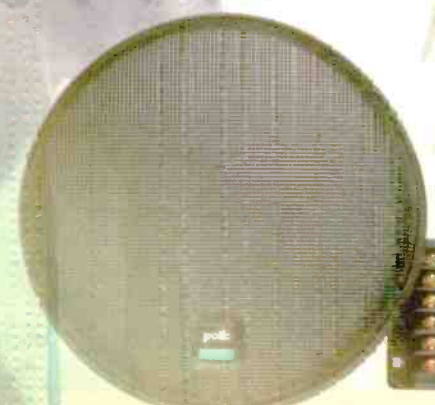
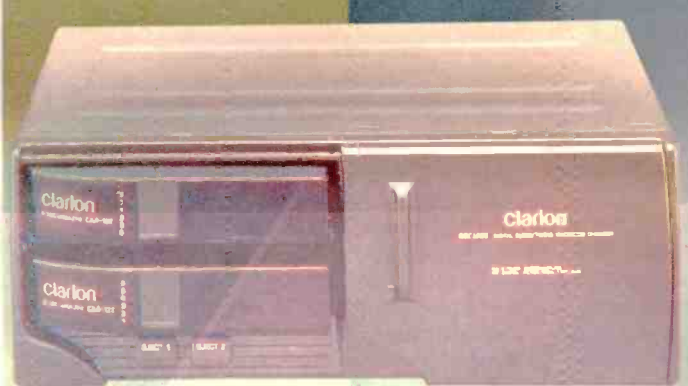
The Preston family theater is centered on a Mitsubishi VS-6017R 60-

inch rear-projection TV, fed by an RCA Digital Satellite System receiver, which delivers some 150 channels via its chimney-mounted 18-inch dish. "DSS represents a marked improvement in audio quality compared to my cable TV," Preston says. "The noise is very low and the bandwidth adequate, though it does seem to have less dynamic range than a CD or laserdisc. And picture quality is very good except for the occasional artifact."

Add it all up, and the components

alone represent an \$18,000 investment, Preston estimates. He intends to upgrade to the new Dolby Surround AC-3 format eventually, but for now the Prestons are satisfied with movie sound that outperforms the local theater. "I recently had some guests over to watch *Jurassic Park*, and they were quite impressed," Preston says, "particularly when the tyrannosaurus is nearby. With four 18-inch subs it feels like she's in the next room!"

— Bob Ankosko



Whether you drive a Porsche 911 or a Dodge minivan and listen to Bruce Springsteen or Leonard Bernstein, music can make your trips less tedious, especially those soul-deadening commutes that bedevil so many working Americans. We're not talking ground-pounding boom-fi, competition-grade custom jobs, or cost-no-object systems here — just affordable, listenable music in the 6 x 10-foot space where you probably spend a good part of your life: your car.

Standard car audio systems have improved over the years, but you can almost certainly do better than the system that came with your car — unless you have high-end rolling stock with a “super-premium” factory-installed sound system designed (or co-designed) by a well-known audio company like Bose, Nakamichi, JBL, or Infinity. The best of such top-shelf built-ins are truly excellent, and usually

system options, this “head unit” is probably your first upgrade target. Good reasons for replacing it include a desire for somewhat higher power and cleaner, brighter sound, especially from the FM radio. You won't necessarily get better *reception* because many built-in head units are designed to maximize reception at the expense of hi-fi qualities like treble extension and stereo separation, while the tuners in many add-on head units take the opposite design approach.

But the No. 1 rationale for a “head-pop,” as a dashboard upgrade is called in the trade, is the desire to take CD on the road. CD receivers — integrated CD player/radios with on-board power — are now widely available at prices as low as \$300 (or even less at blowout-sale prices). Unless you already have an extremely large collection of cassettes, or (God forbid) haven't yet made the jump

A Guide to Upgrading • By Daniel Kumin

Car Stereo Building

difficult to improve without a multikilobuck, ground-up refit.

From a more modest starting point, though, there are several upgrade steps you can take to get better sound when you're behind the wheel or riding along. We suggest upgrading in stages, following an order that should be practical and cost-effective for most car owners. But that doesn't mean you have to take all of the steps we suggest or that you need to follow exactly the same order to achieve a noticeable improvement in the sound of your car system. The upgrade path that's best for you depends on the type of car you drive, the level of performance you want from the sound system, and how much time and money you're willing to invest to get it.

The Head-Pop: Unless you bought a Yugo or a HumVee, it's likely that your car came with a radio or radio/cassette player in the dash. And if you passed up the carmaker's “premium” sound-

to CD's at home, the digital disc is the way to go. The CD's excellent sound quality, instant/random-access convenience, and freedom from motion-induced wow-and-flutter make it a natural for the mobile environment. And if you're worried about the effects of potholes on CD playback, don't be. As long as they're properly installed, today's in-dash CD players are remarkably resilient.

While there are lots of variations in features and controls, most name-brand CD receivers deliver fine audio performance when you pop in a disc — it's the radio you have to keep an ear on. Reception and noise-rejection abilities, particularly on weak or distant stations, vary considerably between entry-level models (\$300 or less) and top-ranking units costing \$500 or more. While there are plenty of heads that deliver good FM performance, AM reception tends to get short shrift almost across the board. So if AM really matters to you, pay close attention to tuner performance and specs.

Unfortunately, the only way to really gauge re-

ception accurately is to take the receiver for a test drive — not exactly a practical option — so make sure the store you buy from has a liberal return/exchange policy. Magazine reviews and word-of-mouth recommendations from satisfied owners are probably the next best indicators of tuner performance, followed by an in-store demo, which may shed some light on reception capabilities.

Of course, there's no law that says you can't replace your head unit with a good aftermarket cassette receiver, if tapes are how you want to go. Good cassette heads offering a broad range of features are abundant in the \$200 to \$400 price range, and many of them are equipped with controls for an outboard CD changer (see "The Shrinking CD Changer") so that you can play tapes or CD's as the fancy strikes you. The beauty of buying a head with CD control capability is that you can add a changer to the system at any time. As for tuner performance, it's the same story as with CD receivers — you get what you pay for.

The other big head-unit variable is on-board power. Assuming you intend to connect speakers directly to your new cassette or CD receiver, you'll encounter a two-tiered set of choices. Inexpensive heads typically contain an amplifier rated to deliver about 12 watts into each of four outputs (to power front and rear stereo speaker pairs). But when you read the fine print, you find that these "maximum" power ratings usually carry a hefty distortion spec, which means that 8 watts or so per channel of clean power (at, say, 0.3 percent distortion) is about all you can reasonably expect. The second tier covers so-called "high-power" heads rated to deliver 25 or 30 watts "maximum" per channel, which usually translates into a legitimate 12 or so watts per channel.

As modest as they seem, such power ratings can actually produce decent results in a car because 1) car speakers tend to deliver more volume per watt than most home speakers, and 2) you're at least twice as close to the speakers as you would be at home. But — there's always a but — the downside is noise. Even the quietest car is orders of magnitude noisier than your living room on average, which leaves you no choice

but to crank up the volume if you're trying to recreate the dynamic range and impact of your home system. And that brings us to the power amplifier.

Amping Up: Many bare-bones built-ins can sound pretty decent while you're idling in the driveway, but on the interstate at 75 . . . er, 55 mph, music reproduction falls to its knees with mushy, thwacking bass, harsh treble, and inadequate volume. Swamped by road, wind, and engine noise, the paltry amplifiers used in such heads wind up panting for breath just to reach (let alone surpass) the noise floor, which can easily register 70 dB. The solution is more power. While a "high-power" head that delivers a legitimate 20-plus

watts to each speaker will improve overall performance, an even better solution is to add an outboard power amplifier to your system. (If you decide to pursue this path from the get-go, you may want to consider a preamp-only head, although the few that are available tend to be expensive. On the other hand, if you plan to start with a receiver but think a future amp upgrade is possible, make sure the receiver you choose has line-level outputs — not all do.)

Power amps come in dizzying variety, but cost- and music-conscious system builders will probably find the four-channel configuration most appealing because, in addition to providing excellent value, it simplifies the installation. High-quality amplifiers that deliver, say, 25 to 40 watts or so per channel cost anywhere from \$200 to \$600 and will go a long way toward transforming your road-going system from "car-radio" to "car-fi" status. (Most good amplifiers are honestly rated; the kind of full-disclosure spec to look for is one along the lines of "four channels at 30 watts each, all channels driven into 4 ohms, 20 Hz to 20 kHz at less than 0.5% THD.") While an increase from, say, a receiver's 8 watts per channel to 32 watts from an outboard amp may not sound like much, that's a fourfold improvement, and the resulting 6-dB increase in headroom will make a dramatic difference: Music that was barely audible at highway speeds will come alive with detail and even pack some punch.

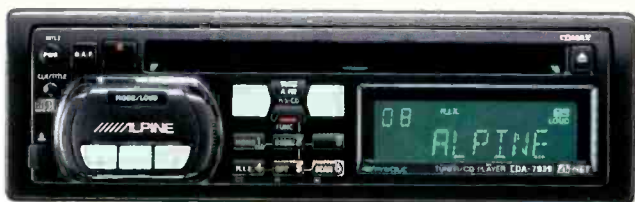
Many of the four-channel

Sherwood's XA-5400 amplifier (\$350) is rated at 4 ohms to deliver 75 watts to each of four channels or 150 watts to each of two channels in bridged mode. It boasts fan cooling and a two-way crossover.

MTX's Thunder 280 two-channel amp (\$219) has a defeatable subwoofer crossover and is rated to deliver 40 watts per channel into 4 ohms or 80 watts each into 2 ohms. Bridged mono output is 160 watts into 4 ohms.

Adcom's GFA-4304 four-channel amp (\$500) accepts balanced inputs (an optional RCA-to-balanced interface is \$120). Fan-cooled, it's rated for 30 watts per channel into 4 ohms, 60 watts into 2 ohms.





Alpine's flagship CDA-7939 CD tuner (\$670) features a computer-like Ai-NET bus processor that enables it to control several components, including a CD changer, car navigation system, and digital processor.

For those who want the best of both worlds, Blaupunkt's San Diego cassette receiver (\$230) has controls for a CD changer. It also has a detachable faceplate and a four-channel amp with a line-level output.

power amps on the market now include some practical extras. The most common is an active crossover that can be used to limit one or both of the amp's output pairs to high-pass (midrange/treble only) or low-pass (deep bass only) content. The crossover is primarily intended for use in systems that include a subwoofer or two (more on those later), but it can also serve a purpose in systems with modest-size woofers. Another common extra is a "Bass EQ" control, usually set to around 40 Hz, that lets you dial in a boost (or cut) at the bottom end.

When shopping for an amplifier, more power is always better, within rational limits, even if you don't know the power-handling ability of your built-in speakers. Of course, that assumes you will use your new, high-power amp to play music at comfortable listening levels and not crank rap or hip-hop all the way up and leave it there, which no doubt will blow the speakers sooner rather than later. Even when used judiciously, an amplifier that puts 40 watts where 6 watts from the original radio used to be may eventually toast a speaker or two. So on to the speaker upgrade.

Pioneer's DEH-515 CD receiver (\$460) can control the company's new six- or twelve-disc CD changer and comes with a wireless remote control. Continuous power output is 10 watts to each of four channels.

Besides playing MiniDiscs, Sony's new MDX-C150 MD receiver (\$549) has controls for a ten-disc CD changer. It features a 3-second antishock buffer memory and an amp that delivers 8 watts each to four channels.

The Speaker Drop: The speakers that come in most cars run the gamut from lousy to mediocre — occasionally even just-okay. They also come in a bewildering variety of sizes and shapes, including 3½-, 4-, 5¼-, and 6½-inch rounds and 4 x 6-, 5 x 7-, 4 x 10-, and 6 x 9-inch ovals. Happily, most car-speaker companies supply dozens of reasonably priced direct-replacement, or "drop-in," models in those standard sizes and more, so you'll have no trouble finding speakers that fit your car's factory cutouts.

Most cars provide locations for front and rear speaker pairs. Typically, you'll find smaller, 3½- to 5¼-inch round speakers in the dash or front doors and larger, bass-producing oval or round models in the rear deck, doors, or side panels. Replacing all four speakers is the surest path to noticeably improved sound quality. In a pinch, replace the rears first if better bass and higher power handling are your primary goals; if enhanced clarity, imaging, and treble detail are more important to you, swap the fronts first. Since a car's original speakers are usually designed more for high sensitivity and low cost than for sound quality, a speaker upgrade

Wiring Up

Can you do it yourself? Do you *want* to? Installing car audio gear can be simple; it can also be very tricky and frustrating, and you could damage your car or your new equipment. It all depends on the car and, to a lesser extent, the gear being installed, but the best advice here is that if you have *any* doubt about what you're doing, don't do it.

Installing speakers can be a reasonable do-it-yourself project. Head-unit replacement can also be fairly straightforward, provided you can get a wiring "kit" that's compatible with the make and model of your car *and* your new head unit. These kits are available

from car stereo shops for about \$20. Car stereo shops also sell the trim kits needed to fit a standard-size ("DIN") head unit into dashboards that have oversized openings (notably those in vehicles from Chrysler and many GM lines).

Just the same, head-unit installation is not a job to be taken lightly. Nor is adding a power amp to your system, which requires wiring a high-current 12-volt feed directly from the battery. When you do need an installer? Where do you look?

Most audio-specialty chains have large installation departments; usually the salesperson can set up an appointment and give you a fairly accurate price estimate. (A

simple head installation might run \$40 to \$60, while it might cost three times that much to install a modest four-speaker system with an outboard amp.) And, of course, car-stereo specialists almost always have on-site installation services. Ask to see a portfolio of the installer's work — most will have pictures and layouts of some very elaborate and impressive jobs they have done. The work of a good installer will be tidy and leave your car looking like new, with no exposed wires and no jagged edges or gaps around a newly installed head unit. If you have any doubts, or are dealing with an outfit whose reputation is unknown, asking for references is sensible and perfectly reasonable. —D.K.



Rockford Fosgate's Punch woofer lineup includes 8-, 10-, 12-, 15-, and 18-inch drivers ranging in price from \$110 to \$286. Shown is the RFP-412 (\$183), which is rated down to 32 Hz and handles 100 watts.

To improve imaging from low mounting locations, the tweeter in JBL's two-way 504GTi (\$580 a pair) is suspended at an angle over the 5¼-inch woofer. An external crossover network (shown) is supplied.

For rear-deck "drop-in" speaker upgrades, Boston Acoustics offers two coaxial models: the 5 x 7-inch RX87 (shown, \$159 a pair) and the 6 x 9-inch RX97 (\$219 a pair). Both feature a ¾-inch tweeter.

Polk Audio's EX1565 component speaker system (\$240) comprises pairs of 6½-inch woofers, ½-inch tweeters, and crossover modules. The tweeters can be either surface- or flush-mounted.

often reaps a dramatic harvest in sound quality, but rarely in loudness per watt: Good replacement speakers typically require more power than the stock models, but will almost always handle it better.

Begin your search by looking at two-way "coaxial" speakers, which create a full-range sound reproducer by suspending a tweeter over a round or oval woofer. (Three-way "triaxial" designs, while readily available, don't make a lot of sense — except to the marketing guys. You simply don't need three drivers in a 6-inch-woofer system to cover the full audio band effectively; that's why three-way *home* speakers with 6-inch woofers are virtually nonexistent.) Car-speaker specs aren't terribly useful, so an in-store listening session, the manufacturer's reputation, and possibly word-of-mouth recommendations are about all you can go on — unless the dealer has a demo car that happens to use the speakers you're interested in. Power-handling specs, if taken with a grain of salt, are worth a quick glance: The typical "100 watt max" rating of an average 6 x 9-inch speaker, for example, probably translates to about 35 watts of continuous power-handling capability. The main thing to keep in mind while auditioning speakers in a

showroom is that each and every one of them will sound dramatically different in a car.

Compared with other installation procedures, like replacing a head unit or mounting an amplifier, the "speaker-drop" (as installers like to call it) is one chore that handy types should be able to tackle successfully. Usually, you unscrew and remove the original driver, unclip the speaker leads, and simply reverse the procedure with the replacement speaker; just be sure to connect the plus and minus leads to the correct terminals so that the new speaker is wired in phase. Stock car speakers are either top-loaded into a cutout, which means you must first remove a grille, then the speaker, or bottom-loaded up into a fixed grille like most rear-deck speakers (which must be removed from the trunk).

Not all "drop-in" speaker installations are a piece of cake, though. Some cars have hard-to-remove grilles that require the use of Torx drivers and other unusual tools, and in other vehicles removing a door speaker means taking off an entire trim panel. If you encounter installation hurdles that you're not comfortable with, take the car to a pro from the start! Installers don't like fixing someone else's basket-case, and they tend to charge accordingly.

Enclosure not required: Cooustic's DR-330 BassPump subwoofer system is designed to be bolted underneath the rear deck of most vehicles. It's rated down to 25 Hz and can handle 150 watts of continuous power.



A more sophisticated (and expensive) speaker option involves the use of component drivers, or "separates," which are commonly sold as woofer/tweeter combos. Good two-way speaker packages, which usually include passive crossovers and a tweeter mounting kit, run anywhere from \$200 to \$600, depending on the size and type of drivers used. Installation is a bit more complicated because you need two cutouts per location (the tweeter can usually be surface-mounted, but you still need to make a hole for its cable). Autosound enthusiasts tend to prefer component-speaker combos — especially up front — because they're more flexible (you can "perfect" the imaging by moving the tweeters around) and usually sound better than coaxials.

Nevertheless, judiciously selected drop-in coaxials can deliver remarkably good sound when teamed with a high-quality CD or cassette receiver that delivers modest yet clean power. There will always be those for whom such an arrangement still lacks sufficient impact or bottom-octave grunt, but that's where subwoofers come into play.

Sub Topics: Subwoofers get a bum rap because of those "boom-mobiles" that cruise the streets in the wee hours of the morning, but they are still *de rigueur* in high-end car audio. Why? Because they can make the difference between a good system and one that's outstanding. In a typical sub setup, one or more 8-, 10-, 12-, or 15-inch drivers are powered by a dedicated amp that pumps out 50 to 200 watts. The drivers may be loaded into a sedan's rear deck (an "infinite-baffle" arrangement that uses the trunk as the enclosure) or into a prefabricated or custom-built sealed or ported enclosure sized to fit (more or less) conveniently in the trunk or hatch. Upstream of the sub amp — either as a discrete component or within the power amp itself — will be an electronic crossover that sends deep-bass signals to the subwoofers and signals above 100 Hz or so to front and rear full-range speakers or speaker sets.

Do you need a subwoofer? Yes and no. Yes if you demand full low-bass impact at highway speeds or crave Saturday-night cruising rumble — or if your car cannot accommodate reasonably sized rear speakers. No if none of the above apply and you're satisfied with a system that produces a reasonable facsimile of musical bass. Let's not forget that a top-notch pair of 6 x 9-inch full-range speakers loaded into the rear deck of a sedan can deliver solid response down to 40 Hz or lower.

If you're handy, it's possible to assemble a very capable subwoofer system for as little as \$400 using a prefab enclosure (available from some car stereo shops), a 10- or 12-inch driver or two, and a modest 25- to 50-watt power amp with an on-board crossover. The whole package can be reasonably compact, with the amp screwed to the side of the enclosure, and reside in the trunk or hatch. You can even wire it to the main system with a special connector so that it can be quickly disconnected when you need to make room for groceries or golf clubs. Or you could simply buy a finished box or tube-type subwoofer system from any one of a number of manufacturers. Some systems (mostly the tube designs) even include a built-in amplifier and crossover. In almost all cases, a subwoofer set to operate below about 120 Hz will work just fine even if there is a rear seat or trunk wall separating it from the passenger compartment.

When it comes to subwoofers, the bottom line is simply this: If high performance is your goal, a good subwoofer system is essential. But be prepared to pay for it in trunk space, equipment cost, and installation time or dollars. □



At 9 $\frac{3}{4}$ x 6 $\frac{1}{4}$ x 3 $\frac{1}{8}$ inches, Sanyo's MAX-9000 is one of the smallest ten-disc CD changers (\$570) on the market.

The Shrinking CD Changer

What if you want to play tapes *and* CD's in the car? Or want access to more than the one CD in your CD receiver? Up until fairly recently, your best option was to install a lunchbox-size CD changer that accepts six, ten, twelve, or eighteen discs in your trunk (or hatch) and operate it via a small handheld controller or the head unit. But changing the discs loaded into the changer is a hassle: You have to stop the car, walk around back, and pop the trunk.

Now there's a new generation of changers that are small enough to fit under the seat or in the glovebox of many vehicles, putting six or more discs within arm's reach. All major changer manufacturers now also offer CD changers with RF (radio-frequency) connections. Instead of hard-wiring the changer to your system, which can be a bother, you send its signal through an RF modulator that essentially broadcasts music from the selected CD to the head unit's FM radio; the radio must be tuned to an empty channel at either end of the dial to receive the signal. Hookup is simple: You attach a T-connector to the head's antenna.

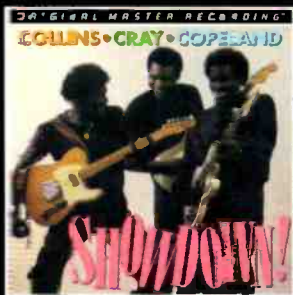
RF-modulator systems are certainly convenient, and they will let you hear your CD's under otherwise-impossible circumstances — such as in a company car with a system you can't upgrade. But the RF connection does compromise CD sound quality somewhat, limiting it to FM's frequency response and dynamic range. If you're stuck with a head unit that has no auxiliary inputs and a system that has no outboard amplifiers, an RF connection is your only option. But wherever possible, opt for a "hard-wired" CD changer installation that will put hours of music at your disposal without sonic limitations.

—D.K.



Clarion's RDC1205 CD changer (\$390) accepts two six-disc magazines and has a circuit that mutes hiss between tracks.

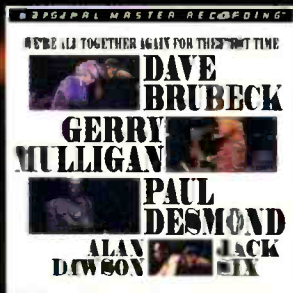
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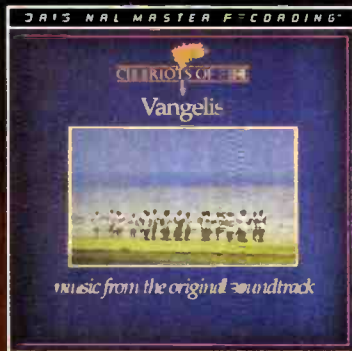
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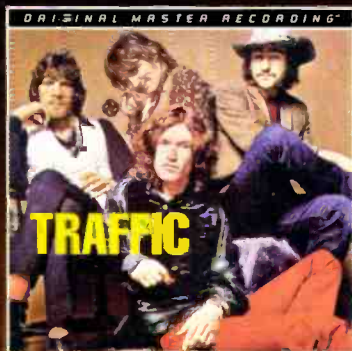
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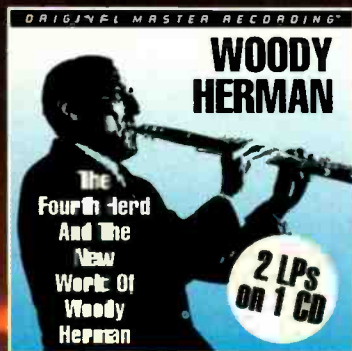
UDCD 627



NEW RELEASE UDCD 622



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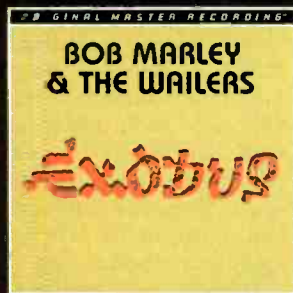
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BEST OF THE MONTH

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Juliana Hatfield: This Time It's Personal

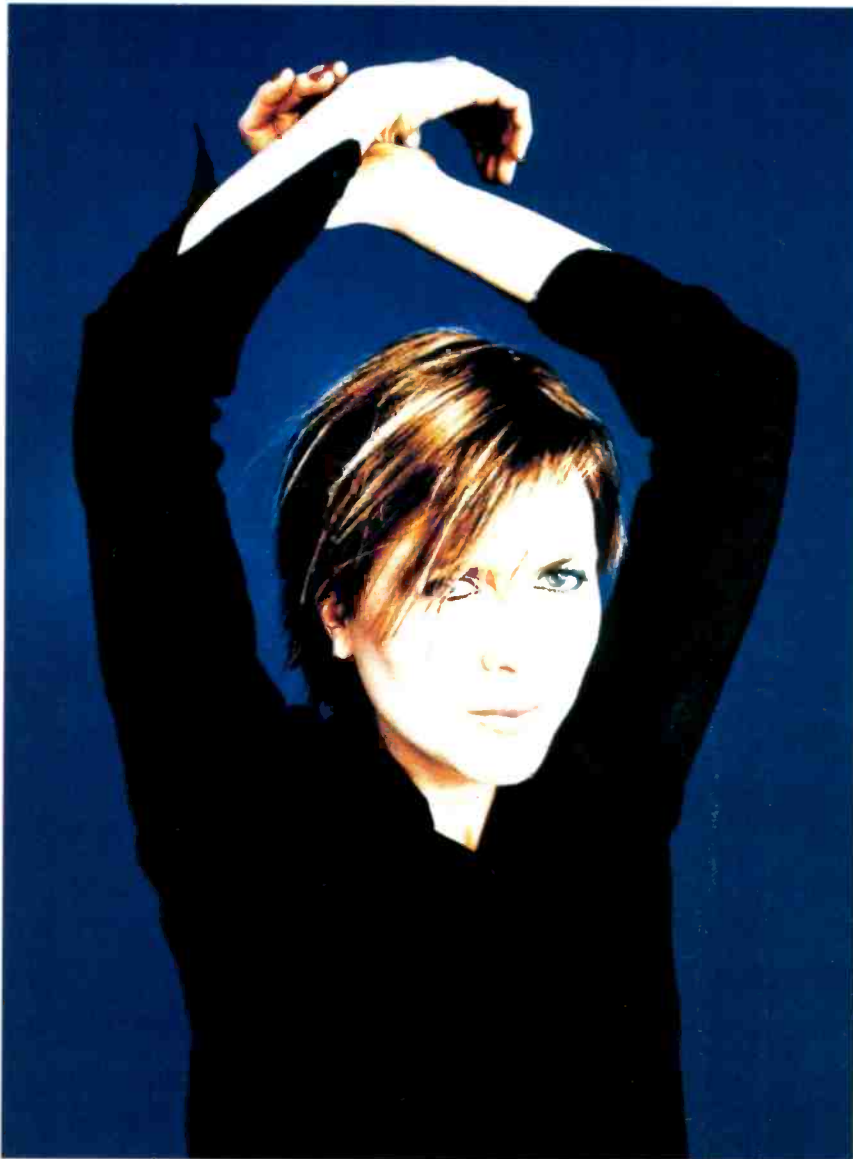
Belly, the Breeders, Veruca Salt, Throwing Muses — the leading lights in the alternative arena are female-led bands, and Juliana Hatfield might just be the brightest light of them all. Certainly she's intriguing: a Berklee-schooled musician slumming in alterna-land, a doe-eyed naif who's defiantly wary, suspended between innocence and experience.

On her latest album, "Only Everything," Hatfield walks life's experiential tightrope with delicacy and determination. The moments of brashness — the full-force gales of feedback and dissonance, the bratty tough-talking — serve to keep the hurtful world at bay, while the sweeter, more unguarded tunes offer glimpses of the naked vulnerability at her core. It's a combination of sweetness and fire that makes for a piquant listening experience.

"Only Everything" opens with Hatfield in full fuzztone pique, pouring moral Clorox around the dirty flannel collar of someone's low-rent lifestyle: "Dirty, sweaty, smelly, faithless, grungy, wretched," she chants in *What a Life*. "It doesn't have to be like this." She sounds a bit like Joan Jett here, as her guitar builds a deliciously retro, Seventies-style head of steam. She engages in some intricate French vocal gymnastics on *Flew de Lys*, which a percussive splatter links to *Universal Heartbeat*, hooked around a jazzy electric-piano figure and an unarguable bit of lyrical wisdom: "A heart that hurts is a heart that hurts."

Hatfield gets more personal in *Live On Tomorrow*, the album's most affecting performance. In a sibilant voice she sings of her indomitable spirit against a shimmering folk-pop backdrop ("Feed me to the vultures / Throw me to the wolves / I'll live on tomorrow in purity of soul"). Elsewhere she pitches pointed bratty fits ("Life ain't no party, it's not like a video," she grouches in *Congratulations*; "Shut up, shut up," she crows in *OK, OK*) that she bolsters with sneaky overlays of distorted guitar.

The album closes with some of Hatfield's most unabashedly personal lyrics and pretty melodies. In the alternative world, where irony trumps honesty and



real feelings are all too often buried in an avalanche of boisterous sarcasm, Hatfield's openness and candor on such songs as *My Darling* and *You Blues* are a refreshing change. In this sense, "Only Everything" is both old-fashioned and on the edge — and not to be missed.

Parke Puterbaugh

JULIANA HATFIELD *Only Everything*

What a Life; *Flew de Lys*; *Universal Heartbeat*; *Dumb Fun*; *Live On Tomorrow*; *Dying Proof*; *Bottles and Flowers*; *Outsider*; *OK, OK*; *Congratulations*; *Hang Down from Heaven*; *My Darling*; *Simplicity Is Beautiful*; *You Blues*
MAMMOTH/ATLANTIC 92540 (51 min)

BEST OF THE MONTH REVIEWS

Kissin's Poetic Chopin

It has taken RCA a long time to drop the other shoe, releasing the second of the two discs of stunning Chopin it recorded when Evgeny Kissin performed at Carnegie Hall in February 1993, but the second volume is possibly even more wondrous than its predecessor. The first, reviewed here last August, includes the Second Sonata, the Fantasy in F Minor, a few waltzes and nocturnes, and the Op. 44 Polonaise; the new one initially looks a bit less varied, with only the big B Minor Sonata and a dozen mazurkas, but there's a world of incredible variety in the latter. The three Op. 63 mazurkas are the only set presented in full, though they're scattered through the program, which ends with the exuberant Mazurka in B Major, Op. 63, No. 1. In that piece, and in the assertive Op. 30, No. 3, the balletic Op. 33, No. 2, and Op. 24, No. 4, and the truly microcosmic Op. 17, No. 4, Kissin's playing provokes not merely admiration for his tasteful rubato and subtle shading, but also a new sense of wonder over the range of feeling Chopin conveys within these miniature structures.

If there is not a bar in the twelve mazurkas in which Kissin fails to rise to the highest level of poetry, the B Minor Sonata is an out-and-out miracle of sym-

Pianist Evgeny Kissin



pathetic response. This is one of those rare performances in which boundaries between the ideas of creator and interpreter seem to be erased and the performer simply surrenders utterly to the music. Kissin's instinctive elegance, which gives us majesty without posturing in the opening section, insures as well that the succeeding lyrical passage glows with purity and conviction. Every trill and run, every wash of color throughout the work is integrated into an overall expressive purposefulness that never misses its mark; the final movement, as free of the slightest hint of barnstorming as the preceding sections are of sentimentality or indulgence, is an exalting culmination of a grand design.

The sound of the piano is reproduced with all the richness, detail, and overall realism one would expect from the best studio recording, and the audience is heard from only twice, after the sonata and again after the last of the mazurkas. Is it really too early to pick a piano recording of the year? *Richard Freed*

CHOPIN:

Sonata No. 3; Twelve Mazurkas

Evgeny Kissin (piano)
RCA VICTOR 62542 (64 min)

Kieran Kane's Town and Country

If Jamie O'Hara brought a sunny optimism to his half of the O'Kanes, the ground-breaking duo that helped usher in Nashville's New Traditionalism in the Eighties, his partner, Kieran Kane, supplied the fatalism. That fatalism is particularly apparent on Kane's second solo album, "Dead Reckoning." A jewel of a record, it mostly casts aside the rock sensibility that Kane employed with O'Hara, but retains the minimalist arrangements, the old-world instrumentation, and the country/folk/blues vocal styling that made the O'Kanes a hit with country's more urbane audience.

Harking back to both Kane's American and Celtic roots, "Dead Reckoning" begins with *This Dirty Little Town*, a song about scheming to escape a place where the trees are dying, the water and air are fouled, and people "pack heat" on the streets. That better describes New York City, Kane's home town, than a small rur-



Kane: fatal attractions

al community, but in this day and age it's a universal cry. Later, in *He Never Knew What Hit Him*, a woman literally gets away with murder, the menace coming from Kane's pure, unadorned tenor and a spare, minor-key melody that calls up the bluegrass ghost of Bill Monroe.

Most of the album has a distinctly bleak, rural British Isles flavor, although Kane's not without his romantic and spiritual sides. In the sweet ballad *If It's Not Love* he learns that kindness and romantic bonding may matter above all else, just as in *So Many Miles* he cherishes a love that endures despite the separation of an ocean and the years. And in *Cool Me Down*, where a fuzztone electric guitar plays off a high-capoed, finger-picked acoustic guitar, he rubs silk on steel for a song of sexual tension and longing.

Still, Kane is most effective in songs of humanism and spiritual quest. In *Je Suis Tres Contendre*, where Emnylou Harris supplies a gorgeous duet harmony, he relishes a complete union with another human being. And he closes with a rave-up cover of Buck Owens's 1963 hit, *Love's Gonna Live Here*, a tune as buoyant and celebratory as they come. Passion, Kane seems to say, may bring the strong to their knees, but love finally makes the world go 'round. *Alanna Nash*

KIERAN KANE

Dead Reckoning

This Dirty Little Town; He Never Knew What Hit Him; Cool Me Down; Bell Ringing in an Empty Sky; Je Suis Tres Contendre; Rambling Man; Eight More Miles; If It's Not Love; Find Somebody New; So Many Miles; Love's Gonna Live Here Again

DEAD RECKONING 001 (36 min)

[Available direct from Dead Reckoning, 1-800-442-DEAD.]

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Sonic Blockbusters From Cleveland

Charles Ives once called *The Unanswered Question*, his 6-minute masterpiece from 1906, "a cosmic landscape." That phrase could serve as title for both of the larger works that precede *The Unanswered Question* on Christoph von Dohnanyi's remarkable new CD with the Cleveland Orchestra, as both the Ives Fourth Symphony and Edgard Varèse's *Amérique*s amount to enormous cosmic soundscapes. Varèse spoke of *Amérique*s, composed in 1920-1921, shortly after he took up permanent residence in New York City, as "... symbolic of discoveries — new worlds on earth, in the sky, or in the minds of men." And Ives thought of his Fourth Symphony (1910-1916) as evoking "... the searching questions of What? and Why? which the spirit of man asks of life."

*Amérique*s consists of layered blocks of sonorities built up from a calm flute statement to ferocious climaxes for a huge orchestra augmented by a battalion of percussion, including a fire siren and a



Conductor Christoph von Dohnanyi

string drum (which produces a lionlike roar). *The Unanswered Question* also uses entirely original thematic material, but Ives's Fourth Symphony grows out of hymn tunes the composer heard as a boy. His treatment of them ranges from the straightforward, as in the fugal third movement, to the incredibly complex, as in the second movement, where hymns and popular tunes of the day are intertwined and juxtaposed. The questions posed in the opening "Prelude," with cho-

rus, are resolved in the apotheosis of the final movement, again with chorus.

All three works on this disc pose tremendous production and engineering challenges; their full sonic realization could only be achieved in some nonexistent ideal concert hall, and faithful reproduction would need some kind of ultimate audio system. *The Unanswered Question*, with its offstage strings, distant solo trumpet, and up-front woodwinds, needs to be heard in both the horizontal and vertical planes. Grasping the huge sonorities of Varèse's *Amérique*s or the vast expanses of the Ives Fourth — vast in terms of both melodic and rhythmical complexity and dynamic range — requires some degree of aural imagination.

The meticulous musicianship of Dohnanyi and the Cleveland Orchestra and the London label's impressive engineering takes us about as far as it's possible to go with today's technology. The performance of *Amérique*s is a stunner both musically and sonically. At the other end of the dynamic spectrum, the distance differentials in *The Unanswered Question* are set forth to exceptionally good effect, notably with respect to the cool, impersonal pronouncements of Michael Sachs's solo trumpet. Dohnanyi and his assistant conductor, Jahja Ling, do a noble job of sorting out the tangled textures and rhythms of the second movement of the Ives Fourth as well as the subtle superimposed metrics of its awesomely solemn finale. The choral passages are balanced so as to keep the essential words intelligible without disrupting the overall dreamlike atmosphere.

There have been other fine recordings of all three works, including Pierre Boulez's brilliant 1977 *Amérique*s (now available on an all-Varèse Sony CD), Michael Tilson Thomas's handsome 1989 Ives Fourth with the Chicago Symphony (also on Sony), and the Orpheus Chamber Orchestra's *The Unanswered Question* (in a 1994 all-Ives program on Deutsche Grammophon). Although I wouldn't discard any of those discs for this newcomer, I'd certainly put it right up there alongside them. *David Hall*

IVES: *Symphony No. 4; The Unanswered Question*

VARÈSE: *Amérique*s

Cleveland Orchestra and Chorus, Dohnanyi cond. LONDON 443 172 (61 min)

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John Lee Hooker: hard-won wisdom

FAITH NO MORE
King for a Day, Fool for a Lifetime
 SLASH/REPRISE 45723 (57 min)
Performance: Mixed
Recording: Very good

Faith No More sounds somewhat confused on "King for a Day, Fool for a Lifetime." Are they a slamming-noise outfit in the Rollins Band vein? Or do they intend to be a bit more melodic and song-oriented (albeit no less bilious) in conveying their black-humored visions of a world gone wrong? The answer is mixed, although the new album seems a de-evolution from the band's previous two records, particularly the excellent "Angel Dust." Singer Mike Patton can sure shred those vocal cords, screaming so loud that he sounds like he's choking to death. But Faith No More's regressive return to noisy origins — ground-glass vocals, leaden, riff-driven drum-guitar chases — starts to wear thin, especially five albums deep into a career. This is not progress.

To be fair, there are some good songs here. *Ricochet* sounds like this album's *Epic*, with the disarming hook line "It's always funny until someone gets hurt / And

then it's just hilarious." When they break the loud-fast mold, as on *Evidence*, with jazzy, accomplished guitar licks, and *Take This Bottle*, a dark country-flavored lament, Faith No More can be captivating. Certainly, there are moments when the energy level is galvanizing. But too much of the album is just undifferentiated, amelodic ranting. There's a lot of that going around right now, but these guys know too much to pull it off very convincingly. *P.P.*

MERLE HAGGARD
Same Train, A Different Time
 KOCH 4051 (67 min)
Performance: Lyrical
Recording: Good

In 1968 Merle Haggard recorded a two-record acoustic tribute album to Jimmie Rodgers, country music's seminal star. The first of Haggard's several concept albums, it was probably his best — full of honest love for the man and the music, with Haggard's laid-back style beautifully suited to Rodgers's happy-sad country-blues, and James Burton hauling out a Dobro to replicate the Hawaiian guitar sound on the Singing Brakeman's original discs.

"Same Train, A Different Time" was more an art record than a commercial venture, and when the single of *Okie from Muskogee* appeared about the same time, the Rodgers tribute was all but ignored in the melee that erupted over *Muskogee*'s controversial lyrics. Now re-released on CD, the album not only holds up well after twenty-seven years, but proves to be the gem Haggard envisioned. The between-

song narrations get in the way and sound like what they are — someone else's words that Haggard merely read. But even if Haggard first came to this music through a tribute record himself — that of his idol, Lefty Frizzell — you can hear his own personal history all through it, especially on *California Blues*, which mirrors the Haggard family's migration from Oklahoma to the West Coast's promised land, and on *Jimmie Rodgers' Last Blue Yodel (The Women Made a Fool Out of Me)*, which says it all for the much-married star.

"Same Train, A Different Time" reminds the listener of two music giants at the top of their form — Rodgers, as a writer, and Haggard as an artist working in a medium that didn't always recognize artistry, especially in 1968. In light of Haggard's spotty catalogue in the years since, there's something ghostly about this record, something at once wonderful, noble, and poignant. For fans of either performer, this is essential listening. *A.N.*

JOHN LEE HOOKER
Chill Out
 POINT BLANK 724 364 010 (54 min)
Performance: Solid
Recording: Excellent

Don't expect to find any new wrinkles in John Lee Hooker's latest album. At seventy-five, he travels the same familiar roads he's taken before, stumbling into a rut or two but striding purposefully forward with an admirable sense of calm and authority. It is his graceful, unhurried bearing that makes the album a worthwhile docu-

IRISH SPRING

There's a big noise coming from the country that's already given us Van Morrison, Bono, Sinéad O'Connor, and Morton Downey, Jr. (hey, nobody's perfect). We're talking about Celtic Heartbeat, a new record label (distributed by Atlantic) specializing in authentic Irish music. Co-founded by U2's manager, Paul McGuinness, the label's initial batch of albums includes new efforts by the already familiar folk



band Clannad (who did the music for the otherwise lamentable *Patriot Games*), as well as Patrick Cassidy (one of Ireland's most successful young classical composers) and Alec Finn (formerly of well-regarded and oft-recorded traditionalists DeDan-nan). The curious can sample all that and more

on "The Celtic Heartbeat Collection," a compilation featuring all of the label's artists. *S.S.*



Loose Diamonds: across the country-rock divide

ment of a still-vital performer. Hooker takes his own sweet time on "Chill Out." He's laid back but not lazy: there's a lot of hard-won wisdom in the slow, certain way he tells a story. He lets life come to him, refusing to submit to the fretful ministrations of life in the fast lane.

What's most revealing about "Chill Out" is the close-miking technique used by producer and accompanist Roy Rogers in recording Hooker's vocals, particularly on the quieter, quasi-improvised blues numbers. Such cuts as *Deep Blue Sea*, *Tupelo*, and *Talkin' the Blues* are up close and personal, Hooker's boomy, guttural voice highlighted to reveal every crack, crevice, and cranny. As with Hooker's recent albums, "Chill Out" is about evenly divided between uptempo, guest-filled boogies and lowdown acoustic blues. Van Morrison returns for a fine, simpatico duet on a medley of *Serves Me Right to Suffer* and *Syndicator*. Carlos Santana casts an elegant Latinate glow on the opening *We'll Meet Again*, into which Hooker inserts himself with customary resourcefulness. Hooker also serves up a hot, rocking remake of one of his signature songs, *One Bourbon, One Scotch, One Beer*. It's not so much a great record as a very solid one — a strong shot of musical medicine that's good for the soul. *P.P.*

KATE JACOBS

What About Regret

BAR/NONE 051 (45 min)

Performance: Waif on the lam

Recording: Good

Much lauded for her 1994 debut, "The Calm Comes After." Hoboken, New Jersey, folk-pop songstress Kate Jacobs returns with a similarly left-field collection of original tunes, sung in a wide-eyed whisper that suggests Victoria Williams via Nanci Griffith. Many of Jacobs's songs are conversations with friends or loved ones. In *See the Moon*, for example, she does a sophisticated Mickey Rooney ("We'll put on a show!"), trying to cheer herself up as well as a pal ("Let's have a dinner party . . . we could even go outside and see the moon").

And in *Be Brave* she tries to reawaken a young man disoriented by romance after years of living alone.

Jacobs rarely drones on about details that set a scene or lay out a landscape other than that of the heart. She's almost unflinchingly optimistic (*In the Country* paints the Great Outdoors as a kind of panacea), even in the face of death and disappointment. But while there's great warmth in Jacobs's songs, and a nice homemade quality, many of her offerings have an off-putting vagueness and an eccentricity-for-eccentricity's-sake quality about them. She's most effec-



tive on a song like *No Question*, in which a woman writes a book and delivers a chapter a day to the man she's dreamed of for years, who turns out (say the biographical notes) to be the author of *The Story of O*. Even without that information, in this song you get inside a character's head in a way you never do in others. Then again, maybe this is just a more interesting head. *A.N.*

LOOSE DIAMONDS

New Location

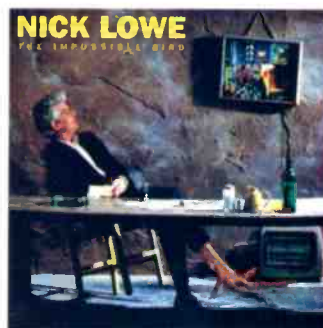
DOS 7010 (46 min)

Performance: Loose, but still collected

Recording: Suitably rough

Loose Diamonds, the Austin, Texas, country-folk-rock-R&B fusion band whose debut won last year's NAIRD Rock Album of the Year award, blasts forth with

a raging follow-up that should find impassioned fans on both sides of the country-rock divide. This offbeat quartet has three things going for it: Jud Newcombe's ingratiating sandpaper vocals (imagine the offspring of John Prine and Randy Newman impersonating Bob Dylan), his voodoo guitar style, and his inspired songwriting with Troy Campbell, by turns gritty and quirkily reflective. Whether invoking the spirit of the Rolling Stones (*Luck Runs Out, Gone*), Bruce Springsteen (*New Location*), or any number of obscure Texas country acts (*Enough to Know*), Loose Diamonds is always instrumentally and melodically inventive, as exhilarating as a high-speed joy ride with a tattooed stranger. *A.N.*



NICK LOWE

The Impossible Bird

UPSTART 013 (41 min)

Performance: A change of pace

Recording: Very good

Iknew the guy when he used to rock-and-roll. And Nick Lowe was good. Damned good. This album, however, is an entirely different animal. The general style here is country, and it's none of that neotraditional stuff. Nope, we're talking plain old traditional here, with the emphasis on *plain*.

And he's still damned good. Maybe even damned better. Nearly all of the stark, straightforward tunes on this album come from the pen of Lowe himself — and it's a far cry from the days of *Cruel to Be Kind*. He may still have angst in his pants, but it's not making him dance anymore. *The Beast in Me* and *Withered on the Vine*, as their titles imply, have the quality of despairing confession. Life has not been kind to the people in these songs. Even *12 Step Program (To Quit You Babe)*, for all its cleverness, is pretty bleak. And while that one cranks it up a bit, very little else here even comes close to rocking out. Lowe has played it straight this time — his trademark smirk nowhere in evidence — and the results are devastating. *R.G.*

LIZ MEYER

Womanly Arts

STRICTLY COUNTRY 37 (35 min)

Performance: Memorable

Recording: Very good

Liz Meyer was an integral part of the Washington, D.C. area acoustic music scene before moving to Holland several years ago, turning out a terrific country-folk record. Her absence from these shores has

done nothing to diminish the high regard in which her cohorts in country, bluegrass, and newgrass hold her, however, and on visits back to America Meyer managed to corral her old pals into the recording studio. And what a list it is, a Who's Who of stellar singers and pickers: Emmylou Harris, Jonathan Edwards, Mark O'Connor, Jerry Douglas, the various members of the Seldom Scene, the now-disbanded Newgrass Revival, and on and on.

Meyer possesses a haunting alto unlike that of any other performer in her field, and when it graces a number of well-wrought original songs about faded love and regret she can stir up a powerful emotional response. On the jazzy *Living in the Past*, for example, where she's joined by Edwards on duet vocal, she perfectly captures the heart-racing exhilaration of running into an old love and finding that by-gones aren't by-gones after all. As a producer Meyer pretty much lets everybody do whatever they think is right, which means the record isn't always as spirited as it could be — somebody needed to say, "This could use more energy" at times. But from bluegrass romps (Fred Norman and Eugene Novello's *No Curb Service*) to bittersweet love ballads (the singer's own *Nothing to Lose*), Meyer

knows how to get to the core of her lyrics. "There's no work of art like the human heart," she sings in *Footlights*. That's something she apparently knows firsthand. *A.N.*

DOUG SAHM

The Last Real Texas Blues Band

ANTONES 0036 (57 min)

Performance: Throw a party!

Recording: Good

One of the architects of the Texas sound, Doug Sahn, whose longtime career spans the Sir Douglas Quintet and the Texas Tornados, shows up here with a passel of old friends to revel in the blues. Covering material as wide-ranging as Lowell Fulson (*Reconsider Baby*), Fats Domino (*My Girl Josephine*), Ted Daffan (*I'm a Fool to Care*), and T-Bone Walker (*T-Bone Shuffle*), Sahn and company (mostly obscure Texas blues guys) play it rough as a border roadhouse, washing it all down with vocals as jagged-edged as tequila from a broken bottle. A rowdy delight. *A.N.*

SHENANDOAH

In the Vicinity of the Heart

LIBERTY 31109 (34 min)

Performance: Losing ground

Recording: Good

At the outset of their career, the group Shenandoah built a considerable following on a catchy repertoire that romanticized the small-town Southern way of life (*Mama Knows*, *Church on the Cumberland Road*, *Sunday in the South*). Lately they've strayed from that formula in favor of more generic country fare, and in doing so they've lost most of their distinctive spark. Here, it's pretty much a mixed bag: a duet with bluegrass star Alison Krauss that never catches fire (*Somewhere in the Vicinity of the Heart*); a ridiculous, gospelish attempt to link the five o'clock factory whistle with the afterlife (*Heaven Bound*); two sweet love ballads (*Always Have, Always Will*, *Every Fire*); and a couple of forgettable rhythm numbers. That leaves lead singer Marty Rabon's soulful baritone to carry the day. And the day's getting shorter. *A.N.*

SLASH'S SNAKEPIT

It's Five O'clock Somewhere

GEFFEN 24730 (70 min)

Performance: Keep away

Recording: Grating

Enter Slash's Snakepit at your own risk. For the scraggly, hirsute guitarist, it is a stopgap project while Guns n' Roses is on hiatus. The bassist is different and there's no Axl to grind, but Slash's Snakepit is full of noisy musical vipers who bare their fangs and turn the amps up to eleven. Unfortunately, "It's Five O'clock Somewhere" adds up to a lot of sound and fury signifying nothing very interesting. Most of the songs sound like they were stamped from the same mold: massive, swaggering riff-work from Slash, hoarse, wretched vocals from singer Eric Dover, and bruising bombast from the rest of the crew. Verging between bluesy "Exile on Main St." envy and riff-driven Hollywood glam-metal, Slash and the boys kick butt in their wearying way for 70 long, drawn-out minutes. Which



Shenandoah: generic country

just goes to prove that some snakes are better left in their cages. *P.P.*

BRYAN WHITE

ASYLUM 61642 (36 min)

Performance: Bright new talent, but . . .

Recording: Very good

As part of Nashville's current talent stampede, here comes twenty-one-year-old Bryan White, an Oklahoma native who sounds as if he grew up listening more to Seventies singer-songwriters like Bob Seger than to Bob Wills. On his debut album White demonstrates surprising poise and self-confidence, sending his songs out via an especially elastic, expressive tenor. From the opening dance tune *Eugene You Genius* (a Chuck Berry pastiche) to the romantic *Me and the Moon*, he conveys an intense and winning earnestness. Yet too much of this collection floats around weightless in space, a disappointment considering White's charming live-wire presence on stage. Maybe next time. *A.N.*

Slash: no Axl to grind



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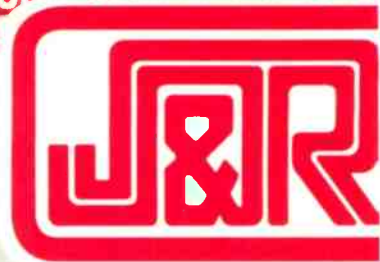
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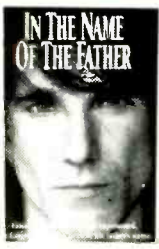
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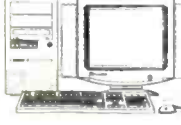
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CIRCLE NO. 27 ON READER SERVICE CARD

it captures the maestro. Cootie Williams, Lawrence Brown, Johnny Hodges, Jimmy Hamilton, and Paul Gonslaves still at their peak. The spirited program ranges from the seminal *East St. Louis Toodleo* to *Ad Lib on Nippon* from the then-new *Far East Suite*. Best of all, the condensed *Black*,



Brown & Beige included here rivals any other recorded version and goes a long way in establishing the durability of a work dismissed by many as a miscalculation on its premiere at Carnegie Hall in 1943.

"Togo Brava," a reissue of a British concert originally released by United Artists, is from 1971, three years before Ellington's death and one year after Hodges's. It is a mix of old and new, with the African-influenced title suite coming across as rather minor compared with the earlier undulant *La Plus Belle Africaine*. The items featuring the flute solos of Norris Turney, Hodges's replacement, also seem extremely minor, though Turney fares better on alto—especially on a piece of his own called *Checked Hat*, a homage to Hodges that captures his inflections exactly. There's no such thing as subpar Ellington but there are better examples than this of his genius, even from his final years. *F.D.*

LEE KONITZ

Leewise

STORYVILLE 4181 (61 min)

Performance: Frosty

Recording: Very good

The Danish enthusiasm for jazz has recently manifested itself in the establishment of the JAZZPAR award. Each year this joint venture between the Danish Jazz Center and the Scandinavian Tobacco Company (where there's smoke, there's jazz, it seems) invites a foreign musician of international renown to come over and play with the locals. Muhal Richard Abrams and David Murray accepted the invitation in 1990 and 1991, respectively, and Tommy Flanagan took the spotlight in 1993.

The 1992 honor went to Lee Konitz, whose new Storyville album, "Leewise," captures some of the musical highlights of that visit. We hear the venerable pioneer of cool with the JAZZPAR All Star Nonet, a group that seems very much in tune with his frosty approach, and in a series of duets with Allan Botschinsky, Jesper Lundgaard, and the All Star group's leader, Jens Søndergaard. No stranger to Scandinavia, Konitz sounds quite at home throughout this release. It was some forty-seven years ago that I first heard Konitz—I was a Danish teenager searching for jazz in the American Music section of the U.S. Information Service library in Copenhagen, and he was an integral part of the library's only jazz offering, a Lennie Tristano Keynote album. I still like what I hear. *C.A.*

DIANA KRALL

Only Trust Your Heart

GRP 9810 (47 min)

Performance: Silken

Recording: Excellent

Canadian-born Diana Krall began her career at age fifteen, as a Fats Waller-inspired pianist. Today there is not a trace of that influence in her performances, but Ms.



Charlie Parker: ballad masterpieces

Krall still has a lot in common with Waller: She plays the piano and sings, doing both with impeccable taste and musicality. On "Only Trust Your Heart," she navigates effortlessly through a repertory of standards, rendering lyrics in the urbane manner of Roberta Flack and Peggy Lee. Her general approach, both vocally and instrumentally, is eclectic, and the amalgam of influences works well. The smooth accompaniments on three selections are by tenor saxophonist Stanley Turrentine, bassist Ray Brown, and drummer Lewis Nash, all excellent choices. Nash also propels the remaining five selections, but here it is bassist Christian McBride who expertly fluffs the rhythmic pillow. An excellent album. *C.A.*

CHARLIE PARKER

Charlie Parker with Strings

VERVE 3984 (76 min)

Performance: Stroking Bird

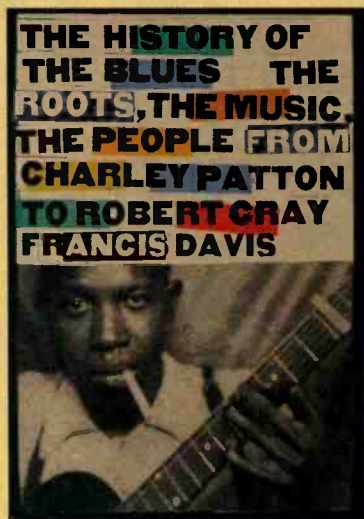
Recording: Quite good

When Charlie Parker recorded with strings, some jazz purists cried "foul!" (or was it "fowl!"). Blatant commercialism, they said. Actually, the idea of improvising against a lush string background was a fulfillment of Parker's own wishes, which he had expressed as early as 1941. Bird with *anything* is still Bird, and these recordings, made by Norman Granz between 1947 and 1952 and collected on one disc for the first time, are as high-soaring as anything Parker ever did—absolute masterpieces of ballad interpretation. As annotator Joe Goldberg points out, the symphonic backdrop is not the only thing that separates these performances from Parker's small group recordings. Here there is no

ROBERT PARENTE/VERVE RECORDS

THE BLUES IN BLACK AND WHITE

We don't regularly plug outside efforts by our contributors, but a new book by critic Francis Davis, *The History of the Blues* (Hyperion), is just too good not to. In fact, this companion volume to a three-part PBS series airing in the fall is probably the best thing of its kind we've ever read. Davis knows the genre cold from its origins to the present, he's full of interesting, original ideas, and completely avoids the sort of how-great-thou-art gush that even the best critics tend to indulge in when the subject is, say, Robert Johnson. Be warned, though: Davis's enthusiasm for the music is so infectious that you'll probably spend a small fortune buying the CD's he cites in the book's closing discography. A smashing read. *S.S.*



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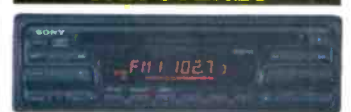
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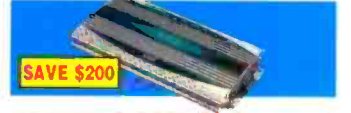
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QUICK FIXES

THE BRADY BUNCH MOVIE (Original Motion-Picture Soundtrack)

MILAN 35698 (40 min)

Really, really dumb — a new song by Monkee Davy Jones, soundtrack stuff from the original show — and thus a perfect reflection of the state of the nation circa 1995, as well as of our obviously impending doom. At least the grunge version of the TV theme is good for a couple of laughs while we wait. **S.S.**

DAVID BUDWAY

Brief Encounter to Last a Lifetime

ALANNA 5557 (49 min)

This is the kind of lush, superromantic piano music you want playing in the next room while you enjoy candlelight and wine with someone you've just fallen in love with. Budway's own six songs hold their own with selections by the likes of Mancini, McKuen, and Previn, and the standouts are his *Aspen* and the title tune.

William Livingstone

CREEDENCE CLEARWATER REVIVAL Willy and the Poor Boys

DCC 1070 (35 min)

A gold-disc remastered edition of one of this great American band's best albums, and as per usual with DCC a splendid job, with more (natural-sounding) bottom end and an increased sense of air around the instruments. A classic improved. **S.S.**

THE VERY BEST OF YVONNE ELLIMAN

TARAGON 1003 (36 min)

Yvonne Elliman is best remembered for a sappy version of *I Don't Know How to Love Him* from the execrable *Jesus Christ Superstar* (included here along with lots of other sappy Seventies ephemera). But the real reason to grab this reissue is an out-of-left-field version of the Who's *Can't Explain* featuring truly spectacular guitar by Pete Townshend himself. **S.S.**

LUCKY 7

One Way Track

DELUGE 3008 (46 min)

New York's foremost alternative zydeco band returns with "One Way Track," another excellent album in which their early punk sensibility meshes neatly with formative Cajun influences. Verdict: Fans of both the Clash and Clifton Chenier should dig this the most. **S.S.**

JULIA MIGENES

Smile

ERATO 4509-9638 (53 min)

In this tribute to film music Julia Migenes proves once again that she is one of only a few opera singers who can also sing popular songs idiomatically and convincingly. With very lush arrangements here

she gives an occasional echo of Ethel Waters or Yma Sumac. Mostly, however, she comes too close to Barbra Streisand for my taste, but that will probably win her many new fans. **W.L.**



NOBODY'S FOOL

(Original Motion-Picture Soundtrack)

MILAN 35689 (40 min)

Howard Shore's Americana-drenched score for this Paul Newman vehicle is rustic sounding, melodic, and charmingly discursive, much like the film itself. Shore, meanwhile, seems to be turning in to Mister Versatile—it's hard to believe this is the same guy who did the wickedly kitsch score for last year's *Ed Wood*. **S.S.**

YOKO ONO

New York Rock

CAPITOL 29843 (68 min)

Ms. Ono, I worked with Courtney Love. Courtney Love was a friend of mine. Ms. Ono, you're no Courtney Love. **S.S.**

THE STONE ROSES

Second Coming

Geffen 24503 (76 min)

More like "Barely Breathing." **S.S.**



THREADWAXING SPACE LIVE:

THE PRESIDENTIAL COMPILATION, '93-'94

ZERO HOUR 1060 (47 min)

A nicely eclectic anthology of (mostly) live tracks by various underground faves at a Lower Manhattan performance space where basic black will always be the fashion statement of choice. Pick hit: the amiably grungy *Low-Fi Video* by current critics' darlings Guided By Voices. **S.S.**

THE BEST OF THE TRENIERS

LEGACY/EPIC 66800 (44 min)

Long-out-of-print, frankly epochal stuff by a band that was one of the crucial links between Forties swing and Fifties rock-and-roll. Pick hit: the astonishing *Poontang*, which is about exactly what you think it is and features a saxophone solo that sounds piped in from an alternate universe. Celebrity cameo: a vocal turn by baseball great Willie Mays. **S.S.**

Dizzy Gillespie or Red Rodney to react to, no instrumental surprises that might change the direction of his improvisation; the orchestral accompaniment is etched in stone and Parker must breathe life into it. He does. Parker's string sessions started a trend that yielded many superb ballad performances by musicians such as Coleman Hawkins and Howard McGhee. But no one has ever equaled what we hear on "Charlie Parker with Strings." **C.A.**

KERMIT RUFFINS

The Big Butter and Egg Man

JUSTICE 1102 (39 min)

Performance: Rough Ruffins
Recording: Good

New Orleans trumpeter-singer Kermit Ruffins's last album struck me as overly derivative of Louis Armstrong, and there was a rowdy club edge that put me off. There is less Louis this time out, but I still feel like I'm listening to a club act without the benefit of a club atmosphere. Only one selection here, Duke Ellington's *West Indies Jazz Dance*, is rendered with flair. The rest of the arrangements are dull, if not downright pedestrian, and nobody seems to be having any fun, which is a prerequisite for this kind of music. Still, Ruffins is not without talent; perhaps he just needs a more imaginative producer. **C.A.**

HAL RUSSELL NRG ENSEMBLE

The Hal Russell Story

ECM 1498 (67 min)

Performance: Hal's-a-poppin!
Recording: Excellent

"The Hal Russell Story" is exactly what it says it is: Hal Russell's musical autobiography, replete with the somewhat obscure Chicago multi-instrumentalist's own William Burroughs-like narration and bursts of everything he held dear, including Albert Ayler's glossal clamor, Gene Krupa's tomtom showmanship on *Sing, Sing, Sing*, and the moony songs introduced by the saronged Dorothy Lamour in the Bing-and-Bob Road pictures. Russell, who died of a heart attack in 1992 at the age of sixty-four, was one of the great postbop eccentrics. To their credit, he and the members of his

Joe Lovano: genre-bending



NRG Ensemble (to whom he was something of a father figure) never let their superb musicianship stop them from rocking out as hard as your typical adolescent grunge band. Russell's music, most playful at its most assaultive, can be recommended to fans of Captain Beelheart as well as to fans of Anthony Braxton, and it's represented in all its variety here. Years from now, people are going to be "discovering" Russell the way listeners of the Seventies and Eighties "discovered" Herbie Nichols. My suggestion is to beat the rush. *F.D.*

**GUNTHER SCHULLER
AND THE EBONY BAND**

City of Glass

CHANNEL CROSSINGS 6394 (63 min)

Performance: Interesting
Recording: Excellent

JOE LOVANO

Rush Hour

BLUE NOTE 29269 (64 min)

Performance: Mixed bag
Recording: Fine

A bona fide Renaissance Man, Gunther Schuller is an educator, a conductor, a Pulitzer Prize-winning composer, and the author of at least two indispensable books of jazz criticism. It was Schuller who coined the phrase "Third Stream" to describe the coming together of jazz and classical music in the Sixties; his own works in this vein, on an out-of-print Atlantic album called "Jazz Abstraction," practically defined Third Stream as a genre.

Two new CD's give an idea of the breadth of Schuller's talents. On "City of Glass" he conducts the sprawling, Amsterdam-based Ebony Band in live performances of Third Stream works (from the late Forties/early Fifties) by Pete Rugolo, Franklyn Marks, and Robert Graettinger. Not all of them pass the test of time. Rugolo's *Conflict* and *Mirage* sound dated rather than visionary presented as postwar concert music. And Marks's *Trajectories* is a pleasant but exceedingly minor orchestra exercise. The reason to seek out "City of Glass" is its two versions of Graettinger's title track, one more or less faithful to Stan Kenton's 1951 recording, the other based on a compressed, never previously recorded concert version from four years earlier. Its screeching brass and incongruously sweet saxophones are evocative of a danceband caught in a bad dream, and "City of Glass" is a major work regardless of genre — a breakthrough for American music mocked in its own day and subsequently ignored.

"Rush Hour" is a more typical jazz album of Schuller's orchestral settings for the tenor and soprano saxophonist Joe Lovano. At its best, which is to say on three lengthy and hectic original works by Schuller, "Rush Hour" ranks with Gil Evans's scores for Miles Davis or even George Russell's "Living Time" for Bill Evans, to which this album bears a closer resemblance. But Schuller's arrangements of ballads by Duke Ellington, Matt Dennis, Charles Mingus, Ornette Coleman, Thelonious Monk, and Vernon Duke are less imaginative. Still, a violin or pizzicato viola is always breaking from the ensemble to join Lovano or one of

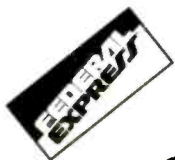
the other horns, and these are generally the moments worth waiting for. *F.D.*

JACKY TERRASSON

BLUE NOTE 829351 (55 min)

Performance: Glib
Recording: Very good

Still in his twenties, pianist Jacky Terrasson is the latest newcomer to receive The Big Push from his record company and a compliant mainstream press. A musician friend of mine dismisses Terrasson's treatments of standards as "cute," which comes close to describing my own reservations, although the word I would use is glib. Attention to texture and dynamics is a wonderful thing to hear in a young pianist, but in the absence of rhythmic or harmonic development in Terrasson's overformatted interpretations of songs such as *I Love Paris* and *My Funny Valentine*, texture and dynamics is all there is to hear (his similarity to Ahmad Jamal is obvious, although he lacks Jamal's lyrical elan). On the other hand, the four Terrasson originals here have a cheekiness to them that's difficult to resist, and his ensemble conception is such that he never relegates bassist Ugonna Okegwa and drummer Leon Parker to backup. So the jury is still out. *F.D.*



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BEETHOVEN: Piano Trios No. 4 and No. 7 ("Archduke")

Chung Trio
 EMI 55187 (61 min)
Performance: Excellent
Recording: Likewise

The violinist Kyung-Wha Chung, her pianist-conductor brother Myung-Whun Chung, and their cellist sister Myung-Wha Chung have made time to perform as a trio for years, but I believe this is only their third recording together. It is easily their finest to date — and surely the most distinguished recent account of the "Archduke," the greatest piano trio in the literature, which has had no lack of first-rate recordings. The playing in both works is consistently beautiful from all hands, with a lovely bloom on the strings, and the sense of proportion evident throughout is as exceptional as the level of intimacy.

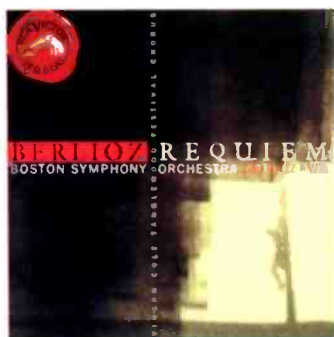
The Chungs never seek to monumentalize the "Archduke," but rather celebrate their patent respect and affection for the work and joy in their musical partnership. The opening gesture, warm and embracing rather than assertive, sets the tone for the entire performance; the subsequent movements really seem to develop out of one another instead of merely parading a series of intriguing contrasts. The scherzo yields a depth all too often glossed over on the way to the more apparent profundities of the



slow movement, which itself fairly glows in the uncluttered simplicity and clarity of the individual lines and their all but magical commingling. The final movement sums it all up as an "Archduke" as noble as its name.

The "Little B-flat" Trio No. 4 (sensibly placed first on the disc) is a winner here as well. While I've always favored Beethoven's original scoring of it, with clarinet instead of violin, I don't think I've ever come

across an account of the violin version quite as persuasive as this one. This whole marvelous hour-long CD is a glorious reminder of what chamber music is all about, and the recorded sound itself is virtually ideal, showing the performances and the music in the very best light. *R.F.*



BERLIOZ: Requiem

Cole; Tanglewood Festival Chorus; Boston Symphony, Ozawa
 RCA VICTOR 62544 (76 min)

Performance: Brisk
Recording: Orchestra lacks presence

The monumental Berlioz Requiem performed by the Tanglewood Festival Chorus and Boston Symphony Orchestra and packaged on a single CD would seem to be a best buy, but this particular reading doesn't quite measure up to its promise. The playing time itself suggests the problem: Seiji Ozawa clips a good 8 minutes from the total of most other recordings I'm familiar with. As a result, the hushed opening pages of the *Kyrie* and the *a cappella* "Quaerens me" lack genuine solemnity. Further into the work, the Tanglewood Festival Chorus is in splendid form, abetted by full-blooded sonics, but the orchestra seems a bit out of focus and is also hampered by a rather low recording level. The mighty blasts of the four brass choirs backed by timpani in the *Dies Irae* make a fine generalized noise, but they could stand to have more of an edge, particularly at the culminating blaze of cymbals. The slashing strings in the repeated opening phrase of the scaring "Lachrymose" should evoke a shudder; that doesn't happen here, and the brisk pace does nothing to help.

On the plus side, Vinson Cole handles creditably the exacting tenor solo in the *Sanctus*. Overall, though, this is the first recording of the Berlioz Requiem in years to leave me unmoved. *D.H.*

BRUCKNER: Symphony No. 5

London Philharmonic, Welser-Möst
 EMI 51252 (70 min)

Performance: Supercharged
Recording: You are there!

In view of the hype accompanying Franz Welser-Möst's first recordings, I have tended to be a bit standoffish in my reactions to the Austrian whiz kid. His 1991 Bruckner Seventh with the London Philharmonic, recorded at a Proms concert, was good but not quite at the top of the heap in terms of gutsiness and drive. This blood-tingling new Bruckner Fifth, however, recorded live in Vienna with his Londoners in peak form, shows what all the hoo-hah was about.

The slow opening is properly reverential, though imbued with a certain element of expectation. Then comes a ferocious outburst as the full orchestra makes its first pronouncement, and it's go for broke from there to the end of the movement, with every phrase and linear element etched with indelible sharpness and vitality. The slow movement tends to sound a bit neutral in some hands, but the intensity of utterance here, heightened by the Brucknerian pauses, made me think that this is how Toscanini in his prime might have conducted it.

In the scherzo, Welser-Möst stresses the contrast between the stormy main section and the country-waltz trio. He keeps an iron grip on the finale — no sprawling or longueurs here! The entrance of the great brass chorale is blunt and straightforward. The fabulous fugue, anticipated by a wonderful bit for solo clarinet, sweeps over everything in its path, and only at the end is the chorale allowed to expand to its ultimate glory. The live sound has extraordinary presence, with wonderfully vibrant upper string tone, gut-shaking basses and timpani, and blazing brass. In short, an exhilarating performance. *D.H.*

DONIZETTI: Don Pasquale

Soloists: Chorus of the Bavarian Radio; Munich Radio Orchestra, R. Abbado
 RCA VICTOR 61924 (two CD's, 120 min)

Performance: Lively
Recording: Fine

Roberto Abbado's crisp direction of the Munich Radio Orchestra enhances this beguiling performance, heightening the comic passages while giving Donizetti's graceful melodies their due. The recording is based on the composer's autograph score, so vocal display for its own sake is at a minimum, allowing the listener to concentrate on the action and its melodic unfolding.

The venerable baritone Renato Bruson makes a delightful fuddy-duddy of Pasquale. While his voice shows the wear of a long and distinguished career, it is certainly equal to the requirements of this role, which he sings with relish and admirable diction. Baritone Thomas Allen creates an urbane and attractive Malatesta, singing the schemer's role with becoming polish. A high point of the recording is the Act III patter duet between doctor and dupe, which is taken at remarkable speed and enunciated with astonishing clarity.

As the young lovers, Norina and Ernesto, soprano Eva Mei and tenor Frank Lopardo acquit themselves commendably. Mei sings with verve, accuracy, and fluidity, although not — sadly — without an occasional steely high note. Ernesto, a nice lad who becomes infatuated, is removed from being a stock figure largely by virtue of his lovely aria "Com'è gentil," perhaps the most famous passage of the opera. *R.A.*

FRANCK: Symphony in D Minor; Symphonic Variations

Vienna Philharmonic, Giulini
SONY 58968 (63 min)

Performance: Symphony ponderous
Recording: Variations brighter

If Carlo Maria Giulini's two earlier recordings of the Franck Symphony in D Minor were characterized by an excessive expansiveness and gratuitous underscoring of dramatic points that seemed hopelessly at odds with the music's natural momentum, this new one, taped in concert in Vienna in June 1993, is almost certainly the most distended version ever recorded. It is devitalized by a lack of the tension that might have sustained such broad pacing, and the somewhat murky sound quality is not very helpful, either.

Curiously, everything works just fine in the stylish and enlivening presentation of the Symphonic Variations, recorded in the same week as the symphony. Here Giulini, always the sympathetic and gracious concerto partner, may have deferred to the sure instincts of his piano soloist, Paul Crossley; the performance radiates a vitality that is both joyous and elegant, and the sonic frame is as bright and handsome as one might wish. But these appealing qualities in the slighter work only call attention to their distressing absence in the big one. *R.F.*

HAYDN: The Seven Last Words

Borodin Quartet
TELDEC 92373 (73 min)

Performance: Intense
Recording: Excellent

Haydn's *The Seven Last Words of Our Saviour on the Cross* had its beginnings in 1785 as seven slow movements (styled "sonatas") for orchestra, preceded by a *maestoso ed adagio* (slow and majestic) introduction and concluding with a terse descriptive presto depicting the earthquake recounted in the Gospel of St. Matthew. Haydn himself subsequently prepared a version for string quartet as well as working it up into an oratorio; a keyboard arrangement also appeared. All four versions

have been recorded and are currently available on CD, but the one for string quartet has been the most popular.

Not surprisingly, avoiding monotony through more than an hour of somber, slow-paced music is a daunting challenge, but almost all of the string-quartet recordings have succeeded impressively. This new one by the Borodin Quartet is no exception. Theirs is a reading of both great intensity and integrity, yet it stays within the bounds of Haydn's mature style, growing gradually, as does the music itself, in poignance and expressive content and reaching a climax at the Sixth Word ("I thirst"). The performance is also excellently recorded. *D.H.*

LUTOSLAWSKI: Symphonies Nos. 3 and 4; Les Espaces du Sommeil

Los Angeles Philharmonic, Salonen
SONY 66280 (68 min)

Performance: Compelling Fourth
Recording: Very good

What is new here is the Fourth Symphony, which was commissioned by the Los Angeles Philharmonic and given its première under the composer himself in February 1993, a year before his death. Lutoslawski could hardly have left a more striking farewell, for this may well be the most compellingly beautiful of all his big scores. The music, as concise in design (a single movement, running 21 minutes) as it is rich in color and atmosphere, exudes dignity, power, compassion, confidence — and with it all a sense of humility. It sums up a

lifetime of continually developing creative effort, and Esa-Pekka Salonen provides compelling advocacy.

Salonen's sturdy 1985 recordings of the Third Symphony and *Les Espaces du Sommeil*, with the English baritone John Shirley-Quirk, have been in circulation for several years, first on their own and then in a two-disc set with Messiaen's *Turangalila*. Neither this performance of the Third Sym-



phony nor the composer's own, of similar vintage, with the Berlin Philharmonic on Philips (paired with *Les Espaces* sung by its dedicatee, Dietrich Fischer-Dieskau), is quite a match for Daniel Barenboim's recent Chicago Symphony recording on Erato (with Lutoslawski's Concerto for Orchestra). But Sony's repackaging is certainly reasonable. Shirley-Quirk is persuasive in the vocal work, and the sound is just fine. *R.F.*

Bang On A Can All-Stars

Back in 1987, the composers Michael Gordon, David Lang, and Julia Wolfe formed the Bang On A Can Festival on New York City's Lower East Side. Their goal was to have fun with new music — reasonable enough, but quite revolutionary compared with how the staid and serious "uptown" arts institutions viewed the subject. Well, times have changed, and the Festival celebrated its eighth season last spring by moving on up to Lincoln Center for two sold-out concerts.

The performers, collectively known as the All-Stars, will return for another Bang On A Can Marathon at Alice Tully Hall on May 21. Another indication of their broadening appeal is Sony Classi-



Maya Beiser (cello), Steven Schick (electric guitar), Mark Stewart (percussion), Lisa Moore (piano), Robert Black (double-bass), Evan Ziporyn (woodwinds)

cal's plan to release its first CD with the All-Stars, "Industry," on April 18. Included are works by Gordon, Lang, and Wolfe as well as the Dutch composer Louis Andriessen. Earlier "Bang On A Can Live" discs are available on the CRI label.

PHOTO: PETER SERINO/SONY CLASSICAL

MOZART: "Coronation" Mass; Exsultate, Jubilate; Vesperae Solennes
Soloists: English Concert and Choir, Pinnock
DEUTSCHE GRAMMOPHON ARCHIV
445 353 (68 min)

Performance: Exciting
Recording: Resonant

Mozart's first great vocal score, the motet *Exsultate, Jubilate*, is one of the happiest moments in the composer's entire body of work. Written in Milan as he was turning seventeen, it is a sunny zone of pure, undiluted joy. Even to call it sacred music seems absurdly off the mark; substitute a love poem, and the piece could easily slip into one of his operas. Originally composed for a castrato, it has become a favorite showpiece for lyric sopranos and even mezzo-sopranos. Barbara Bonney's liquid-gold voice suits the piece to perfection.

The "Coronation" Mass, written in Salz-

burg six years later, is a work of deeper richness, the sustained mood of ecstatic joy tempered with cosmic gravitas as only Mozart knew how to do it. Pinnock has grown as a Mozart conductor, and in this performance he manages to capture both the towering majesty and the rhythmic energy of the work. The *Vesperae Solennes*, settings of texts from various psalms of David and the Magnificat canticle, may be solemn, but they are also superbly entertaining and full of surprises. Mozart uses the music to underline the meaning of the words in an almost playful way, as in the choral fugue "Laudate pueri," where the sopranos soar high on the line "Excelsus super omnes gentes Dominus" ("The Lord is high above all the nations") and then cover, pianissimo, on "Et humilia" ("Who humbleth himself") four lines later.

The spacious, resonant recording allows



an imaginative listener to daydream about what it might have been like to attend an Easter Mass at Salzburg Cathedral when these works were new. J.J.

PERLE: Piano Concerto No. 2; Six Etudes

DANIELPOUR: Metamorphosis for Piano and Orchestra

Boriskin; Utah Symphony, Silverstein
HARMONIA MUNDI 907124 (61 min)

Performance: Very good
Recording: Slightly dull

Despite George Perle's furrowed-brow compositional theories, no other modernist charms the perceptive listener with such giddy musical constructions as are abundant in his Piano Concerto No. 2. His previous concerted works have followed traditional forms strictly, but this one is looser, lighter, and freer. The first movement announces itself with a certain bombast, but its second subject echoes Bartok in his most meditative, suspenseful "night music" mode. That touch is also in keeping with Perle's delight in witty shifts of gear, with radically different time signatures. The inclusion of the Six Etudes for Solo Piano — lightweight pieces written more for the fingers than the heart — makes perfect sense, and they're very well played by pianist Michael Boriskin.

Most of Richard Danielpour's works are heavily programmatic, but even though *Metamorphosis* represents a very specific progression toward emotional catharsis, it makes perfect sense as a listening experience without any knowledge of the program. It's a highly dramatic work whose busy, toccata-like percussiveness and direct emotional impact suggest Prokofiev without sounding at all like his music. At several points the work seems to catch fire. So does Boriskin's playing — more consistently — and conductor Joseph Silverstein seems to be with him all the way, though the Utah Symphony occasionally struggles to keep up. D.P.S.

PROKOFIEV: Violin Concerto No. 1
SHOSTAKOVICH: Violin Concerto No. 1

Vengerov; London Symphony, Rostropovich
TELDEC 92256 (62 min)

Performance: Fantastic
Recording: Well-balanced

Pairing these two "Firsts" may add up to a more striking program of violin concertos than a combination of Nos. 1 and 2 by either composer — or so it seems in these compelling performances. This is quite a

"Alexander Nevsky" Revealed

The audio/visual restoration of the Soviet film classic *Alexander Nevsky* (1938) is a total success. The picture is no longer a faded gray relic of a glorious moment in cinema history; modern technology has revealed anew the power of the collaboration between the composer Sergei Prokofiev and the director Sergei Eisenstein by giving the film a new clean look and — more important — a new and modern sound. It's like the cleaning of Rembrandt's *The Night Watch* or the frescoes in the Sistine Chapel. RCA Victor has released the movie on laserdisc and videotape (62705, 110 minutes), the soundtrack only (without the dialogue) on CD and audio cassette (61926, 52 minutes). This is said to be the first time that the full score, rather than the stirring cantata Prokofiev derived from it, has been available in an audio-only recording.

When Stalin commissioned *Alexander Nevsky*, he wanted a propaganda instrument to awaken the Russian people to the threat of a German invasion, but Eisenstein and Prokofiev produced an enduring artistic triumph. Not a conventional narrative, the film is a dramatic pageant that draws on the deep emotions aroused by such elemental themes as love and death, patriotism, and the conflict between good and evil.

Hearing the whole score in a brand-

new, idiomatic performance by the St. Petersburg Philharmonic, several Russian choruses, and the mezzo-soprano Evgenia Gorohovskaya, all conducted by Yuri Temirkanov in up-to-date sound, adds immeasurably to the impact of the film. The original dialogue and sound effects (now in stereo!) hold up well, and in the context of masterly black-and-white cinematography, exciting battle scenes, and rousing music the rather flamboyant acting style seems appropriately operatic. William Livingstone

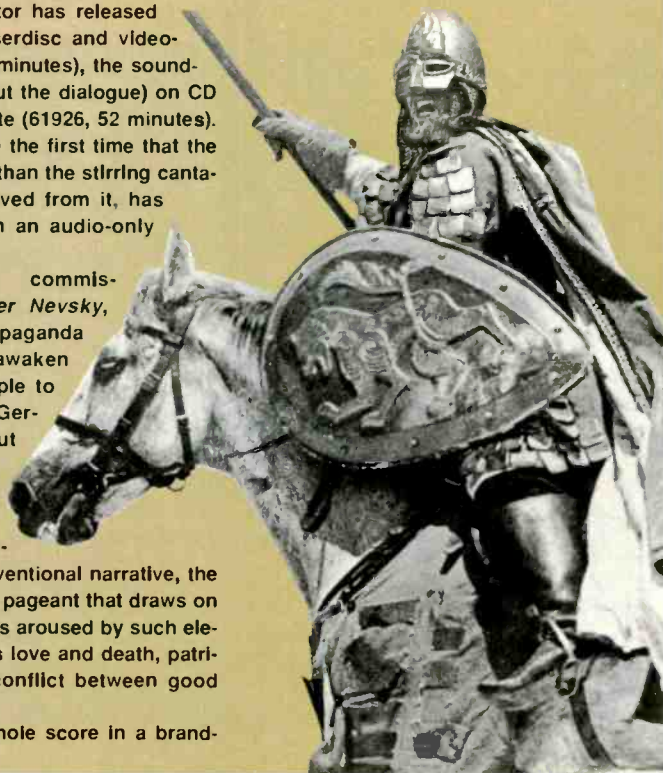


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partnership, in respect to both sure-footed mutuality of approach and the give-and-take spontaneity essential to full realization of any concerto — and the more urgently so in works as substantial and as genuinely symphonic as these. Maxim Vengerov must have been especially charged up by the idea of performing them with a conductor who was so close to both composers, and I can just imagine Mstislav Rostropovich crushing the twenty-year-old violinist in a characteristic bear-hug and calling him “fahn-tahss-tic!” — which he is.

The approach here is especially expansive in the slow sections, unhurriedly enhancing the dreamy poetry of the Prokofiev and the brooding inner drama of the Shostakovich without allowing momentum to falter. The vigor of the performances in the fast sections is no less remarkable; whether it is manifested in the sheer *diablerie* of the Prokofiev concerto's scherzo, the earthy ferocity of the Shostakovich's, or the merging of these elements in the latter's “Burlesque” finale, it is, after all, the same deep-seated intensity. What is most striking here, though, is not those dramatic contrasts so much as the exceptional consistency with which the soloist and conductor appear to be listening and responding to each other, building upon each other's contributions like partners in the most intimate chamber music.

This is *not* chamber music, but it is very far from mere virtuoso strutting or anything resembling it. There is not a single phrase from either Vengerov or the orchestra that

doesn't seem to yield some new illumination, and not one that allows the slightest resistance. The short of it is that neither work has been better served in a recording; neither has been quite so moving, nor has so fully defined a sound world of its own. Teldec's focus is close up but not excessively so, yielding exceptional clarity within a very well-balanced frame. *R.F.*



RAVEL: Gaspard de la Nuit; Sonatine; Valse Nobles et Sentimentales; La Valse
Boris Berezovsky (piano)
TELDEC 94539 (56 min)
Performance: Gutsy, yet elegant
Recording: Honest

What a relief to hear these highly familiar pieces performed in an original, personal manner but without any distortion of the scores. Boris Berezovsky's *Gaspard*

de la Nuit has a real sense of narrative as well as showing Ravel at his most harmonically progressive. Few pianists have made so much of the relentlessly repeating B-flat in “*Le Gibet*,” which here becomes the major unifying element of the work's mysterious second movement.

Valse Nobles et Sentimentales is usually tossed off as nothing but suaveness and charm; Berezovsky's meticulous voicing shows how the piece is bursting at the seams harmonically, making it anything but predictable. The *Sonatine* comes off as elegant, classical, and confiding, with every thematic restatement conveying something new. The performance of *La Valse*, as transcribed for piano, is so coloristically alive that one never misses the orchestra. Recommended. *D.P.S.*

REVUELTAS: Homenaje a Federico

Garcia Lorca; Sensemaya
New Philharmonia Orchestra, Mata
Ocho X Radio; Toccata; Alcancias; Planos
London Sinfonietta, Atherton
La Noche de los Mayas

Orquesta Sinfónica de Jalapa, De la Fuente
CATALYST 62672 (69 min)

Performances: Energetic
Recordings: Diverse, effective

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Dead" skeleton is used as a visual logo on the CD itself and its packaging). His music was championed in the U.S. by Leonard Bernstein, but it has only recently been gaining a wider audience here. Recorded in London and Mexico, it includes a surprisingly down-home and almost raucous homage to the great Spanish poet Federico García Lorca, the austere masterpiece *Planos* for chamber ensemble, and a teeth-rattling version of Revueltas's one hit, *Sensemayá*, for twenty-seven winds and fourteen percussion instruments.

There are also three smaller and gentler

pieces. *Ocho X Radio*, *Toccata. Alcanzías* (which the Catalyst label's producer, Tim Page, describes as *El Salón México* on mescal), and the effective, somewhat hammy music for the film *La Noche de los Mayas* (*Night of the Mayas*), which gives its title to the collection. These are among the few works in which the composer's strategy was to charm rather than to overwhelm. But even in his rare moments of charm, Revueltas's manic energy and musical brilliance are in evidence, and these performances make a strong case for the breadth of his talent. *E.S.*

SCHUMANN: Symphonies Nos. 1-4; Overture, Scherzo, and Finale

Hanover Band. Goodman
RCA 61931 (two CD's, 134 min)

Performance: Thrilling
Recording: Nice and airy

Robert Schumann's symphonies have waited a long time for transformation by the authentic-performance movement. There's about as much agreement on their orchestration problems as there is about Beethoven's metronome markings. Roy Goodman, however, strides through these musicological mine-fields so confidently, and often so spectacularly, that his new set deserves a place among the best Schumann cycles, alongside Leonard Bernstein's, Rafael Kubelik's, and Wolfgang Sawallisch's.

The most obvious revelation is Goodman's chamber-music-style treatment of the original 1841 version of the so-called Symphony No. 4, convincingly restored here to its proper chronological placement, after the First Symphony. This less-familiar early version of the Fourth seems like the optimum one in this performance; its cyclic form is more organic and cogent than usual, the melodies much more graceful without the ungainly doublings the composer added ten years later.



To Goodman's credit, he doesn't impose a one-size-fits-all approach to these symphonies; each one has a very different set of sound rules. Thanks to the Hanover Band's virtuosic horn section, his full-blooded interpretation of the "Rhenish" Symphony (No. 3) doesn't need the usual authentic-performance handicap when compared with conventional recordings — the portrait of the Cologne Cathedral in the fourth movement is hypnotic and awe-inspiring. And the slow movement of the Symphony No. 2 has none of the emotional reserve (read: sterility) that some authentic-performance specialists bring to it.

Everything here, including the Overture, Scherzo, and Finale, Op. 52, has the cogency and transparency of the best early-music performances — qualities that enable, for example, the slow introduction to the first movement of the "Spring" Symphony (No. 1), which often seems too discursive, to come off as a wonderfully audacious stretching of musical form. Schumann's symphonies have often been considered more interesting for what they lead to than for what they are. This set may begin to change that notion. *D.P.S.*

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SOLDIER: Mark Twain's "War Prayer"; Ultraviolet Railroad

Soloists; choir: Manhattan Chamber Orchestra, Clark
NEWPORT CLASSIC 85589 (44 min)

Performance: First-rate
Recording: Strong, close

Dave Soldier is a professor of neurology and psychiatry at Columbia University, a classically trained violinist who plays funk, punk, R&B, and art rock, founder of the Soldier String Quartet, and a composer of singular gifts who manages to incorporate all of the above (even perhaps the neuropsychiatry) into his music.

War Prayer is a dramatic adaptation of Mark Twain's story of the same name about a mysterious stranger who appears at a religious service intended to bless the troops departing for the front and insists on voicing the unspoken prayer: "Help us, O Lord, to tear our enemy to pieces." Soldier's setting for tenor Jason White, bass Wilbur Pauley, a gospel choir, and the Manhattan Chamber Orchestra exploits the particular talents of these performers. Pauley's huge range and extended vocal technique are used in striking ways to characterize the mad stranger. The gospel/R&B sound of White and the choir, the chamber-orchestra scoring, and Pauley's unsettling bass sound make an unlikely but powerful mix.

Ultraviolet Railroad is a classical concerto for violin, cello, and orchestra inspired by the blues. Its genesis was a pilgrimage to a place called Bentonia, just outside the Mississippi Delta and the home town of a number of great blues musicians. Most attempts to write "jazz concertos" sound touristic and ring false, but Soldier has an insider's grasp of his material.

Strong soloists and a first-rate ensemble from the Manhattan School of Music (where Richard Auldson Clark, the conductor, studied and now teaches) make this music vivid, and the close, lively recording does full justice to the performances. *E.S.*

R. STRAUSS: Festive Prelude; Till Eulenspiegel's Merry Pranks; Sinfonia Domestica

Philadelphia Orchestra, Sawallisch
EMI 55185 (70 min)

Performance: Rich and supple
Recording: Superb

Anyone who needs to be convinced that Wolfgang Sawallisch was a good choice to lead the Philadelphia Orchestra is invited to give a listen to this live recording of two favorite Strauss tone poems, introduced by the magnificent and all too rarely performed Festive Prelude for large orchestra and organ. Judging by these performances at Tokyo's Suntory Hall, the Philadelphians are now playing with a finer polish and greater expressiveness than they have in years. The famed string sound, particularly, seems to have been fully restored to the glory of the Ormandy years; the adagio of the *Sinfonia Domestica*, for example, soars and overflows with exquisite emotion.

The recording is gorgeous, capturing the excellent acoustic of Suntory Hall with astonishing fidelity. I've never heard the hall's organ before, but in the hands of the

(strangely) anonymous organist in the Festive Prelude, it is a mighty impressive instrument. Indeed, this recording of that work, with its massed strings, intricate brass passagework, and wide dynamic range, makes an exemplary demonstration disc. The phrase "live recording" once served as a warning to expect inferior sonic quality and lots of shuffling and snuffling; in this case, it means that a living, breathing (but very quiet) audience has contributed richness to the acoustic and a sense of immediacy to the interpretation. The applause at the end comes as a real surprise. *J.J.*

TELEMANN: Suites in G Major ("Bourlesque de Quixotte"), F Minor, and D Major; Concerto in E Minor for Two Violins

Freiburger Barockorchester, Von der Goltz
DEUTSCHE HARMONIA MUNDI
77321 (74 min)

Performance: Spirited and polished
Recording: With panache

The Baroque Orchestra of Freiburg, Germany, which plays Baroque and early Classical music with appropriate spit, spirit, and polish, offers a program here that includes an Italian-style concerto and three

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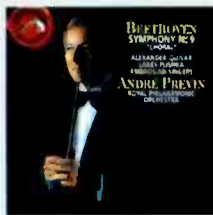
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BEETHOVEN: Symphony No. 9

Soloists; Ambrosian Singers: Royal Philharmonic, Previn
 RCA VICTOR 60363 (69 min)
 Vitality, balance, and the most comprehensive grasp of detail mark this performance under André Previn. Roberta Alexander, Florence Quivar, Gary Lakes, and



Paul Plishka make up about as fine a quartet of soloists as could be assembled today, and there's a bloom on the orchestral playing that suggests deep contentment on everyone's part. Not a "revelatory" Ninth, but a richly satisfying one. *R.F.*

DVORAK: Serenade in E Major, Op. 22
JANACEK: Suite for Strings
MARTINU: Partita for Strings

Prague Chamber Orchestra
 DENON 78919 (60 min)
 Played here with great elegance and warmth by the conductorless Prague Chamber Orchestra, Dvorak's popular serenade, Janacek's early suite, and Martinu's perky partita add up to a most attractive program. The spacious acoustics lend warmth and vitality to the expertly balanced recording. Go for this one. *D.H.*

ERB: Drawing Down the Moon

University Circle Wind Ensemble, Ciepluch
 NEW WORLD 80457 (52 min)
 Donald Erb creates colorful, dissonant contemporary music for wind instruments, often in combination with percussion and electronics. The five works here — *Woody* for solo clarinet, . . . and then toward the end . . . for tape and trombone, the title piece for piccolo and percussion, and two big symphonic-band pieces — are all sturdy, serious, and listenable. *E.S.*

MOMPOU: Songs and Dances; Four Preludes

Alicia de Larrocha (piano)
 RCA VICTOR 62554 (60 min)
 Frederic Mompou's *Cancions i Danses* are gentle piano interpretations of traditional material. Thirteen of them are recorded here along with four of his Chopin-with-a-Catalan-accent preludes, one of which is dedicated to Alicia de Larrocha. The rewards of all this are slight but nonetheless real, and the playing — direct, yet delicate and refined — is a big part of the pleasure. *E.S.*

PROKOFIEV: Romeo and Juliet

Orchestra of the Royal Opera House, Covent Garden, Ermler
 CONIFER 55309 (two CD's, 146 min)
 Mark Ermler's distinguished recordings of the three Tchaikovsky ballets with the Covent Garden orchestra, which Conifer brought out four years ago, raised very high expectations for their new *Romeo*, which in the event are not quite met. The enlivening sense of drama in Ermler's Tchaikovsky readings and the brilliant playing he got from the orchestra are both in rather short supply here, though the sound is a tad smoother. *R.F.*

RACHMANINOFF: Piano Concerto No. 2; Paganini Rhapsody

Thibaudet; Cleveland Orchestra. Ashkenazy
 LONDON 440 653 (57 min)
 Vladimir Ashkenazy, who has twice recorded the Rachmaninoff concertos as pianist with great distinction, now takes the podium for his young keyboard colleague Jean-Yves Thibaudet. Taste and technique are givens for both artists, but for all their freshness, vigor, and fine teamwork here, they somehow miss, or choose to downplay, the music's essential warmth and expressiveness. The recording is agreeably plush but well balanced. *R.F.*

VICTORIA DRAKE

Scarlatti's Harp
 WELL-TEMPERED PRODUCTIONS 5168
 Scarlatti on the harp is almost as logical as Scarlatti on the piano—"almost" because I miss the percussive/rhythmic element provided by both harpsichord and piano. The harp makes the music more gentle, more genteel, and less quirky than it really should be. But there is a lot of art and technique on display here; the mostly well-known sonatas emerge gracefully from Victoria Drake's skillful hands and fingers. *E.S.*



MEPHISTO MAGIC

Chicago Symphony, Solti
 LONDON 443 444 (72 min)
 Recorded live, this mini-banquet of musical Hungarian pastries is elegantly served up by conductor Georg Solti. The Liszt *Mephisto* Waltz and Second Hungarian Rhapsody get things going, and Bartok's Hungarian Sketches and Romanian Folk Dances sandwich an excerpt from Leo Weiner's 1927 ballet, *Prince Csongor and the Goblin*; the final course is Kodaly's *Hary Janos* Suite. The performances abound in humor and high color without being overdriven, and the sound is bright and airy. *D.H.*

suites of dances in the French manner, or *ouvertures* (Telemann was very partial to the French style). The hit tune is the curious and charming suite called "*Bourlesque de Quixotte*," which opens the album. It includes such gems as "His amorous sighs for the Princess Dulcinea," "The gallop of Rosinante and that of Sancho Panza's Ass," and, of course, "His Attack on the Windmills." Such whimsies inspired very colorful music from Georg Philipp, and they also inspire these well-equipped performers to brilliant feats of energy as well as tone colors, phrasing, and dynamics quite obviously inspired by the musical scene painting. The livelier movements of the D Major Suite — especially the "Harlequinade" section — get a similarly breathtaking treatment. Although nothing else quite lives up to those high points, everything is performed with a presence that is well caught by the recording. Someone should choreograph the Telemann suites; in these happy performances, they really dance. *E.S.*

VERDI: Otello

Domingo, Studer, others; Chorus and Orchestra of the Bastille Opera, Chung
 DEUTSCHE GRAMMOPHON 439 805
 (two CD's, 132 min)
Performance: Very good
Recording: Excellent

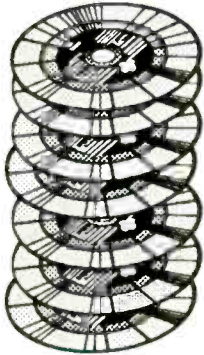
What seemed already evident in Plácido Domingo's two previous recordings of *Otello* (RCA in 1978, EMI in 1985) is decisively proved by his third: He is the pre-eminent Moor of our time. We may now perceive a tragic grandeur in his portrayal that was perhaps not so fully realized earlier. If the B-flats don't ring out with the remembered youthful freedom, his singing still combines intelligence, dignity, and assurance to a remarkable degree. The despair of a broken man colors the martial spirit of his "*Ora per sempre addio*," and he reaches a peak of poignancy in the moving "*Ma, o pianto, o duol*" passage in his third-act monologue. This tormented, larger-than-life Otello has a worthy partner in the touching Desdemona of Cheryl Studer, whose vocalism is virtually flawless, lacking only the ultimate sense of heartbreak in her otherwise exquisite Willow Song.

The lingo of Sergei Leiferkus leaves room for reservations. Dramatically he is never less than convincing, oozing malevolence from the outset. His voice, powerful and penetrating with its high placement, easily encompasses the role's upper extension. In midrange, however, it displays an abrasive quality that makes one long for the rounder, more Italianate sound of his best predecessors. The rest of the cast is above reproach.

Myung-Whun Chung's pacing is clearly modeled on Toscanini's historic version. It shares the rhythmic crispness and forward motion of that recorded performance, but also its lack of tenderness in the Act I love duet. I also find much of the second act, including the choral passages and the "*Si, pel ciel*" aria, paced a shade too fast, making these scenes seem superficial. The third act, with its firmly controlled ensembles, comes off best. Overall, I still prefer Domingo's RCA *Otello* under James Levine. *G.J.*

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May

TIME DELAY

GUIDE TO REPAIRING STEREO SYSTEMS
Hi-Fi/Stereo Review
MAY 1965



30 Years Ago

In the May 1965 editorial, new editor in chief William Anderson quoted the issue's cover boy, composer/critic Virgil Thomson: "Perhaps criticism is useless. . . . But it is the only antidote for paid publicity."

New Products this month included Benjamin's Miracord 18H turntable, with wow and flutter rated at less than 0.1 percent (\$119 without cart-ridge). Altec's A7 Voice of the Theatre speaker (44 x 30 x 24 inches), and Knight's KN-370 stereo tuner, "with 35 watts of music power per channel at less than 0.6 percent distortion." In test reports, Julian

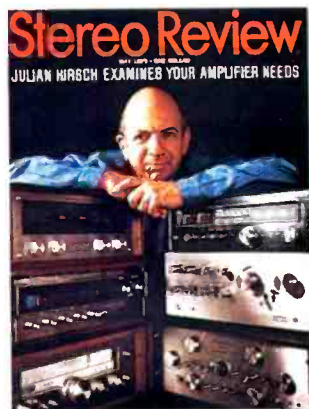


Lafayette's Criterion 1000, 1965

Hirsch, who griped about "the deplorable lack of industry-wide standards on input and output connectors," examined Garrard's top-of-the-line Lab 80 automatic turntable and the

Lafayette Criterion 1000 tape deck ("One of the best under-\$300 recorders I have ever tested").

Coming Soon to Broadway? Reviewing "I Don't Want to See You Again" by the English duo Peter and Gordon. Gene Lees ventured that P&G were "as large an improvement over the Beatles as the Beatles were over Elvis Presley."



20 Years Ago

In the issue's lead story, Julian Hirsch re-examined the hi-fi shopper's perennial quandary, separate components versus an all-in-one-receiver, concluding that "what it all comes down to is the nature of your needs and the state of your pocketbook." Adorning the cover: Hirsch himself.

Among the new products this month were Tandberg's TR-2075 receiver, a 75-watts-per-channel unit weighing 27 pounds and costing \$1,000, and the KLH Model Sixty semiautomatic turntable, with a rumble level of -58 dB. In test reports, a busy Julian Hirsch evaluated the Marantz 3600 stereo preamplifier ("Distortion is really a moot consideration") and Ferrograph's Super Seven open-reel tape deck, a semipro model (\$1,150) that he found to be "a superior performer"



The Velvet Underground: 1969 outtakes, 1985 album

despite its unconventional (and inconvenient) design.

In Best of the Month, George Jellinek cheered a London set of Bellini's *I Puritani* with Luciano Pavarotti ("amazing") and Joan Sutherland ("a vocal triumph"). David Hall liked Michael Tilson Thomas's quadraphonic *Carmina Burana* on Columbia, and Steve Simels admired John Lennon's back-to-his-roots album, "Rock 'n' Roll." In other reviews, Eric Salzman trashed a Philips LP of Krzysztof Penderecki's *Kosmogonia* ("This is, in short, 'important' music — and Penderecki never lets you forget it"), Chris Albertson endorsed "She Was Good to Me," a comeback album by the legendary trumpeter Chet Baker, saying it was "as good as he's ever been," and our man-with-a-metaphor Peter Reilly compared "As I See It Now," the latest effort from hippie chanteuse Melanie, to "an unthinkable crime — rather like Fred Astaire being arrested for flashing."

The issue closed with the latest in a series of biographical profiles of the staff, this time featuring (who else?) the peripatetic Julian Hirsch. Given that both the profile and the opening of the Test Reports section were illustrated with a likeness of the long-time contributor, Hirsch was pictured a total of three times

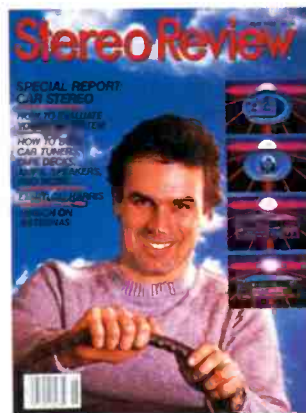
The Sennheiser HD414 SL, 1985



in May, a hat-trick still unsurpassed in the magazine's history.

10 Years Ago

In keeping with the issue's focus on car stereo, Christopher Greenleaf gave advice on how to evaluate a car's audio system, Daniel Sweeney provided tips for car-speaker shopping, and Gordon Sell reported on a high-end installation in a Mercedes 380SL. In the New Products pages, we took notice of the Phoenix P-522 noise-reduction unit and a midprice (\$499) laserdisc player from Pioneer. And in test reports, Julian Hirsch went



to the mat with the Ultrax R100 receiver and Sennheiser's HD414 SL lightweight headphones, which he described as a modernized version of "one of the longest-lived audio components of our time."

Reviewing "VU," a collection of outtakes by the Velvet Underground, this writer called the group "a great American rock-and-roll band." They're still not listening at the Rock-and-Roll Hall of Fame.

— Steve Simels

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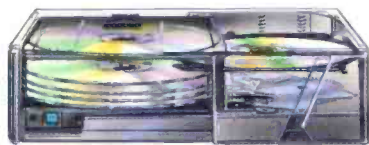
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