MARATHON MACHINES
A GUIDE TO THE NEW CD CHANGERS

HOME THEATER: WHERE DO ALL THE SPEAKERS GO?

6 CD REPAIR KITS AND HOW THEY WORK

TESTED: B&K A/V Preamplifier, Yamaha Tape Deck, Velodyne Speaker, And More
The KEF Reference Series: (From left to right) Models One, Three, Four, and Two. Shown in Rosewood finish. Also available in Rosetta Burr or Black Ash.
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Denon AV Receivers: DSP surround sound, advanced features and uncompromised High Fidelity.
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By William Livingstone and Bob Ankosko

Back to the Fifties
At Dolly Parton's theme park, Dollywood, in Pigeon Forge, Tennessee, construction has begun on a new area devoted to the foods, fads, fashions, and cars of the 1950s along with the music that launched rock-and-roll. Parton says, "I grew up in the Fifties and loved the music, clothes, and all the great fun from that time. I thought this would be the perfect theme for our newest expansion and a TV special on CBS. I guarantee that our new Fifties area is going to be the most fun that our new Fifties area will be the most fun that you can have in bobby socks!"

The new 7-acre Fifties area is scheduled for completion in April 1995. Its cost of $6 million brings Parton's total investment in Dollywood to $45 million since the park opened in 1986.

Hafler Leaving Home
Citing "severe" competition and limited profit opportunities, Rockford Corp. says it will discontinue sales of its Hafler brand home components by early next year and concentrate instead on Hafler amplifiers for the professional audio market. The Hafler brand, best known for power amplifiers and preamps, was started by David Hafler in the 1970s. Rockford, based in Tempe, Arizona, says it will continue to provide parts and service for existing Hafler home components.

Gershwin's Glory
What do Larry Adler, Kate Bush, Cher, Elvis Costello, Jon Bon Jovi, Meatloaf, Sinéad O'Connor, Robert Palmer, Carly Simon, Lisa Stansfield, and Sting have in common? No, they're not on Frank Sinatra's "Son of Duets" album, but they and other noted performers are on a new Mercury recording of perennial hits by George Gershwin. Produced by George Martin of Beatles fame, "The Glory of Gershwin" is scheduled for September release.

British CD Pricing
Great Britain's Monopolies and Mergers Commission (MMC) has cleared record companies of the charge that they artificially inflate the price of CDs. While recognizing that a "complex monopoly" exists in favor of the five major companies that control 70 percent of record sales in England, the MMC concluded that CD's cost more in the U.K. than in the U.S. mainly because of "different tax arrangements" (CD prices in the U.K. include a 17.5-percent value-added tax, or VAT). The MMC's investigation was in response to a House of Commons committee report issued last year that condemned CD pricing policies and recommended cutting retail prices by £2.

Media
The National Football League has announced that all 102 games of the 1994-1995 season will be broadcast on the Fox network in Dolby Surround. Individual broadcast sports events, such as the World Series and the Super Bowl, have used the Dolby technology, but this is the first time a complete season will be aired nationally in Dolby Surround. .. .

Blender is a new pop-culture magazine in CD-ROM format scheduled to debut this fall. In addition to video interviews with pop trend setters, it will include snippets of new music recordings. Also promised are e-mail addresses of celebrities. Price: $15 an issue, $99 for a year's subscription. Blender's e-mail address is Blender@Sonicnet.com, or write to 25 W. 39th St., #1103, New York, NY 10018.

Audio Anniversaries
A gala party celebrating Acoustic Research's fortieth anniversary is planned for late October at New York City's Grand Central Station. Speaker pioneers Ed Villchur, Henry Kloss, and Roy Allison are among those expected to attend. A limited number of invitations are being made available to the general public. Send requests to Acoustic Research, 535 Getty Ct., Building A, Benicia, CA 94510. .. . Also celebrating a major anniversary is Miller & Kreisel Sound Corp. (M&K Sound) of Culver City, California, which is twenty.

Personalities
The Recording Industry Association of America has certified as a Gold album "The Best of Reba McEntire" (Mercury), which brings McEntire's Gold album total to fourteen, putting her in third place among female Gold album achievers, behind Barbra Streisand (thirty-one) and Linda Ronstadt (seventeen). .. . The superstar operatic tenor Placido Domingo will become artistic director of the Washington Opera Company in 1996. .. . The acclaimed American conductor Leonard Slatkin has been named to succeed Mstislav Rostropovich as music director of the National Symphony Orchestra. .. . Lorin Maazel has announced that he will give up his post as music director of the Pittsburgh Symphony in 1996.
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37-97/94
LETTERS

CD Noise

The July articles by David Ranada ("Super CD's") and Michael Klasco ("Quiet!!!") draw attention to the wide gap between the theoretical and practical noise limits of CD reproduction. Mr. Ranada describes a "huge difference" of 24 dB between the theoretical noise floors of 16- and 20-bit recordings. But the best domestic audio equipment provides a dynamic range of less than 100 dB, or 10 dB worse than a (good) 16-bit CD. So the noise-level reduction of a "super" CD cannot be "clearly audible" with any music under any listening conditions.

According to data in Mr. Klasco's article, all intentional sound sources in a typical home, such as TV's and radios, must be silenced to obtain an ambient noise level in a "quiet" listening room of around 40 dB above the threshold of audibility. While a (deafening) peak output level of 110 dB, the dynamic range is only about 70 dB. By investing several thousand dollars in the soundproofing techniques described, it is possible to reduce the room ambient noise by as much as 10 dB. But the resulting noise level of 30 dB would still be audibly worse than that of the equipment and enormously worse than even a 16-bit CD.

The investment would, however, also reduce the external audibility of the CD output by 10 dB. Thus, "super" CD's will not improve the audible noise floor, and soundproofing may be more directly beneficial to the neighbors than to the person who invests in it!

GEORGEY CRASK
Carlsbad, CA

David Ranada replies: The measurements in Mr. Klasco's article are of wideband sound level, which are useful for some purposes but not for evaluating the audibility of low-level noise. That is because background noise in homes tends to be predominantly low-frequency, whereas our hearing is most sensitive at high frequencies, in the vicinity of 4 kHz. So it is necessary to look at the spectrum of the noise, not just its total level. Louis Fieler of Dolly Labs has done just that and found that conventional 16-bit digital recording cannot reproduce the full dynamic range of live acoustic music without introducing audible noise or distortion in a quiet room or, more critically, headphones listening.

The reason we are almost never aware of noise on CD's is most modern recordings is that the dynamic range of recorded music is rarely wide enough for the 16-bit noise floor to become unmasked. But theoretically, if the CD system can be made more transparent by the use of good 20- to 16-bit conversion techniques, which need not increase disc prices.

16. The dynamic range of the best audio equipment, and even some mediocre stuff, is substantially wider than 100 dB.

Pro Logic Before EQ

In the July test report on the Audio Control C-101 Series III equalizer/analyizer, Julian Hirsch says not to connect it (or any equalizer) in front of a Dolby Pro Logic circuit. He also says such a component is typically installed through a tape-monitor loop. That is consistent with other articles I have read and with the instruction manual for my receiver. Question: Is the tape-monitor loop before or after the Dolby Pro Logic circuitry? How about using a Tape 2 circuit for music only?

JOHN W. ENSON
Richmond, VA

Tape-monitor loops are normally added at the Dolby Pro Logic decoder. Your idea (if we're getting it correctly) is very sensible, however: Put an equalizer in your Tape 2 loop so that you can easily switch it in and out of the circuit depending on whether you are using the Pro Logic decoder or listening to uncoded music.

Onkyo Reverb

In the "Second Opinion" part of the August issue test report on the Onkyo TX-SV919THX A/V receiver, David Ranada sums up with the statement, "Powerful, accurate, and clean with music... [i]t is the best A/V receiver I have ever tested." Earlier, however, he indicated that the receiver's "music-oriented processing modes" have artificial reverberation that cannot be turned off, and he said that "in every music mode the reverb was marked by a distinct coloration...."

Let me get this straight: The Onkyo TX-SV919THX is a great A/V receiver, it's just not hi-fi, and it costs 200,000 pennies. If it colors the music, what's good about it?

RICHARD W. MCGINNES
N. Tonawanda, NY

No, the TX-SV919THX receiver is very definitely hi-fi. The review notes some deficiencies in its music-enhancement surround modes but goes on to point out that they were apparent only with some music, not all. Such problems are the rule, rather than the exception, in the music-enhancement modes commonly built into A/V receivers. That's unfortunate, but, like the ubiquitous "loudness" button, the enhancement modes (and their reverb) can always be turned off if you don't like the effect. There is no
There are as many Home Theater Speaker Brands as there are Members of Congress.

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 Oops! We mislabeled the graph for the metal-tape response. The one shown is with Dolby C engaged, which gives -2.8 dB at 20 kHz; the curves for ferric and chrome tape are without noise reduction, and the one for metal tape with no noise reduction (not shown) is indeed very close in that for the ferric tape.

Dolby C incorporates what Dolby calls an antisaturation network, which reduces the recording level of high-level, extremely high-frequency signals, even when the noise-reduction system is boosting the middle and lower treble, to prevent tape saturation. That strategy improves high-frequency response with only a small impairment of the system's effectiveness. As for the S/N figures, they represent tape hiss predominately and modulation noise, which is very program-dependent, essentially not at all.

Home Theater for Music?

Is there any acoustic reason why a music enthusiast who watches little television or movies on TV should invest in a home theater amplifier and extra speakers—honestly?  

Stephen Muratore

Chico, CA

If the amplifier or surround processor has good ambience-enhancement modes for music, you might find a multichannel setup beneficial. And eventually multichannel music recordings may become the norm (some are already being made in Dolby Surround). Otherwise, no.

Speaker Comparison Tests

In the measurements table in July’s “Stand Up and Be Counted,” why is the frequency-response variation figure (±3 dB) different for each of the six speakers? Doesn’t that give one like the Advent Laureate an exaggerated bass extension? According to your graphs, at ±8 dB (like the Adven), the KEF Q30 would go down to 45-48 Hz and the Paradigm 7se MkIII to 34-37 Hz.

Sam C. Park

Toronto, Ontario

The main point of the response listings in the table was not to compare low-frequency extension, but rather to indicate the amount of deviation in on-axis response over the major portion of each speaker’s range. We could have used a consistent “window,” such as ±3 dB, but then the high-frequency limits shown for some of the speakers would have been 0 or 3 kHz.

The Definitive Technology DR-7 and the Phase Technology 7T, two of the most impressively reviewed floor-standing loudspeakers in the $500 to $600 price that I’ve seen since the early 1980’s, definitely should have been included in July’s comparison tests.

Frank J. Salerno

Lansdale, PA

They were excluded because they had been reviewed previously, in the December 1991 and June 1994 issues, respectively.

appreciate your use of a panel of listeners in the speaker comparison tests to compensate for the preferences of only one or two listeners, and especially your straightforward presentation of the way they voted. The measurement data are confusing, though. The table indicates that the low end for the Advent Laureate is 41 Hz but only 39 Hz for the Klipsch KG-3.5. If you look at the room-response graphs, however, the level produced by the Klipsch at 50 Hz appears to be slightly higher than that produced by the Advent.

Also, in describing the sound of the speakers at high volume levels, author Tom Nousaine said that the DCM TF-400 Two had “significant doubling and distortion when driven into extreme overload.” Frankly, knowing how the speaker sounds when it is being abused is rather useless. What would be useful is knowing how loud it can play without its fidelity being degraded.

Thomas E. Slocombe

Orange, CA

One reason we printed frequency-response curves as well as the tabular data was to facilitate comparison of bass extension.

Correction

The September test report on the M&K S-90 satellite speaker did not reflect a recent price change. Current suggested retail prices are $795 a pair ($405 each) unshielded, $875 a pair ($445 each) with magnetic shielding.

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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Finally, Martin Forrest wrote the above local Adcom dealer and listen to what
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**M&K SOUND**
M&K's 21-inch-tall S-1C speaker uses two "transmission-line" dome tweeters, separated by a baffle-mounted foam strip to minimize coloration, and a push-pull dual-woofer configuration, said to improve efficiency and reduce distortion. Tonal balance can be adjusted by a trio of three-position toggle switches on the speaker's back panel. Frequency response is given as 77 Hz to 20 kHz ±2 dB. Available in oak or black oak. Price: $1,395 a pair. M&K Sound, Dept. SR, 10391 Jefferson Blvd., Culver City, CA 90232.

**POLK AUDIO**
Polk Audio's RM7000 home theater speaker system comprises a pair of 7-inch-tall two-way satellites, an 11-inch-wide center speaker, and a powered subwoofer with an 8-inch driver and a 65-watt amplifier. System bandwidth is given as 22 Hz to 22 kHz. The magnetically shielded satellites and center speaker feature high-density polymer cabinets that look like stone. The satellites include wall brackets. Price: $1,299. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215.

**JBL**
JBL's SDP-1 Dolby Pro Logic-based digital surround-sound processor features five movie modes, including Home THX, three ambience settings, and six simulated concert-hall environments. It doubles as a line-level preamp with switching for four signal sources, three of them A/V. A large front-panel LCD window and on-screen graphics provide control feedback. One of the two supplied remotes is for setup, the other for everyday use. Price: $3,200. JBL, Dept. SR, 80 Crossways Park W., Woodbury, NY 11797.
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The AudioAccess PX-600 combines six programmable multiroom zone controllers and six stereo preamplifiers in one box. It features five line-level audio inputs and an infrared control interface for each source component. Volume level, source selection, and basic component functions can be controlled from each zone via a hard-wired wall keypad (not included) that has a built-in infrared receiver for use with an optional handheld remote. Professional installation is recommended. Price: $2,650. AudioAccess, Dept. SR, 26046 Eden Landing Rd., Suite 5, Hayward, CA 94545.

** MONITOR AUDIO **
Monitor Audio's Studio 2 speaker combines a 5¼-inch aluminum woofer and a 1-inch gold-anodized dome tweeter in a 10½-inch-tall vented cabinet. Frequency response is given as 60 Hz to 20 kHz ±3 dB and maximum power-handling capability as 150 watts. Price: $1,199 a pair in black or oak veneer, $1,399 in rosewood. Monitor Audio, Dept. SR, P.O. Box 1355, Buffalo, NY 14205.

** SEQUENCE DESIGN **
Sequence Design's Model 20 speaker can be placed on the floor or hung on a wall or shelf. The 10 x 22-inch sealed cabinet, only 2½ inches thick, houses a 5-inch woofer and 1-inch tweeter; a stand/bracket is included. Bandwidth is given as 55 Hz to 20 kHz. Available with black grille cloth and walnut or black endcaps, or with off-white grille and white or oak endcaps. Price: $299 a pair. Sequence Design, Dept. SR, 145 Brandy Rd., Foster, Quebec J0E 1RO.

** MONARCHY AUDIO **

** DENON **
Denon's AVR-2500 A/V receiver boasts an eleven-mode Dolby Pro Logic surround processor and a Radio Data System (RDS) tuner that can receive text broadcasts, now transmitted by almost 200 U.S. stations. Scrolling text appears in the front-panel display and on screen when a TV is connected. Power output is 85 watts each to three front speakers and 25 watts each to two surrounds. Price: $1,000. Denon, Dept. SR, 222 New Rd., Parsippany, NJ 07054.
The music deal to make VERDI green with envy


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NEW PRODUCTS

▼ CELLO
Cello says its Encore line preamplifier is built with "the world's most advanced internal components." It features an anodized-silver faceplate, five line-level inputs (one balanced), five stereo outputs (one balanced, two recording), a fifty-nine-step volume control, and three 1-dB-resolution output-level controls (left, right, and master). A mode control lets you reverse the left and right channels or send either channel's signal to both outputs. Price: $8,000. A phono input for an MM or MC cartridge can be added for $2,000. Cello, Dept. SR, 112 E. 71st St., New York, NY 10021.

▼ SOUNDOLIER
Soundolier's ThundraPro 2 subwoofer is designed to be mounted between standard 16-inch-center floor or ceiling joists and vented by a floor register or a ceiling-speaker grille. The 13 1/2 x 11 x 21 3/8-inch ported cabinet, described as vibration-free, houses two 8-inch woofers. Frequency response is given as 50 to 170 Hz ±3 dB and maximum power handling as 100 watts continuous. Mounting hardware is included. Price: $499. Atlas/Soundolier, Dept. SR, 1859 InterTech Dr., Fenton, MO 63026.

▼ PIONEER
No matter how hard the rain, sleet, or snow, Pioneer's omnidirectional CSL-300 (left, $369) and CLS-250 ($299) outdoor speakers are said to keep on playing. Both have a 6 1/2-inch driver and are rated down to 50 Hz. The CLS-300, which includes an accent light, stands 17 1/4 inches tall, the CLS-250 15 1/2 inches. Pioneer Electronics Technology, Dept. SR, 1800 W. Holt Ave., Pomona, CA 91768.

▼ GENELEC
Genelec is making its popular 12-inch-tall Model 1030A powered studio monitor available to consumers. The speaker is biamplified, delivering 80 watts to its 6 1/2-inch woofer and 50 watts to its metal-dome tweeter, and rated down to 52 Hz. Finish is textured black. Price: $2,198 a pair. Genelec, distributed by QMI, Dept. SR, 25 South St., Hopkinton, MA 01748.
NEW PRODUCTS

**DESIGN ACOUSTICS**

**COUSTIC**
Coustic's XM-5e three-way car crossover offers continuously variable cutoff points, 6- or 18-db-per-octave high-pass slopes, a center-channel output with a defeatable high-pass filter, dual subwoofer outputs with a stereo/mono switch, and a bass EQ section that provides up to 12 dB boost at any point between 25 and 250 Hz. A remote subwoofer-level control is included (shown). Price: $250. Coustic, Dept. SR. 4260 Charter St., Vernon, CA 90058-2596.

**LAMM**
Designed by a Russian audio engineer now living in the U.S., Lamm's M2.1 monoblock power amplifier is a hybrid incorporating one vacuum tube, a Class A/AB MOSFET output stage, and a switchable biasing circuit to maintain “optimal idle current” for loads between 1 and 16 ohms. The M2.1 is rated for 200 watts continuous output into 8 or 4 ohms with 0.3 percent THD, 400 watts into 2 ohms with 1 percent THD, and 600 watts into 1 ohm with 1 percent THD. It has a balanced XLR input and two RCA inputs. Price: $5,690. Lamm Audio Laboratory, Dept. SR, 185 Ave. S., Brooklyn, NY 11223.

**COAST**
The polyester TC-2000, part of the Team Dennis Conner line, holds a personal CD or tape player or a camera and has a zippered accessory pocket. Price: $24.95. Coast, Dept. SR, 200 Corporate Blvd. S., Yonkers, NY 10701.

**McCORMACK**
The Micro Line Drive preamplifier (shown, $595), one of three distinctively styled McCormack Micros, measures 9½ x 3 x 9 inches. It has three inputs, one tape loop, two outputs, and dual volume controls, and it can be operated in passive mode (no gain) or active mode (high, medium, or low gain). The series also includes the Micro Phono Drive ($495) and Headphone Drive ($595). McCormack Audio, Dept. SR, 542 N. Highway 101, Leucadia, CA 92024.

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Equalized Power
Q I recently bought a ten-band graphic equalizer. It works well, but during normal listening the level meters on my amplifier are consistently in the red. Is this normal, or am I damaging my equipment?
A Michael D. Zollner
Mt. Laurel, NJ

I can only guess, but I suspect you are using the equalizer mainly to increase your system’s bass output. Speakers that roll off in the lower frequencies do so because they are less sensitive in that range. A given amount of amplifier power results in less acoustic output than it would elsewhere in the audio band. You can compensate to some extent for that lack of bass by cranking up the bottom octaves of an equalizer, but the large increase in amplifier output won’t produce much additional oomph. In other words, you may be severely overdriving your amplifier and in return getting only a modest increase in bass output. Even if you like the result, it’s very likely to be accompanied by considerable distortion, unless your amplifier is powerful enough to handle the increased output without clipping. Ironically, if it is, you may be putting your speakers’ voice coils at risk.

CD Snoozing
Q I often fall asleep with a CD still playing. I normally try to pick a selection that will end before the timer shuts off my receiver—it has a 45-minute timer that controls the switched outlet my CD player is plugged into—but that doesn’t always work out. Could I damage my CD player if the receiver cuts off the power while a disc is still playing?
A Craig Tankawa
San Clemente, CA

Don’t worry. Since nothing in your player touches the playing surface of a CD (digitized music data embedded in the disc is retrieved by an optical scanner), there’s nothing to cause it damage. When the power goes off, the disc simply stops spinning. The player supports it around the hole in the middle, but otherwise the only thing in contact with a CD, playing or resting, is air.

Home Theater Checkup
Q I would like to make sure my home theater is set up properly. Is there any sort of VHS videotape designed to help consumers test and adjust their Dolby Pro Logic setups?
A Herman Day
Lomita, CA

Indeed there is. Dolby Laboratories has produced a VHS “Consumer Guide to Home Theatre” that contains clear explanations of the system, the setup options, and buying considerations. It includes a bunch of test signals, too. For more information or to order the tape, telephone 1-800-241-4115.

Beat Tape Recordings
Q When I make tapes from CD’s or from FM, everything is fine, but when I tape from my turntable, the recorded tape has a distortion that sounds like waves or beats, a second or so apart, in which the treble or overall level fluctuates. When the signal is turned down, the distortion decreases. What is causing it?
A David Hassan
Los Angeles, CA

It sounds like the problem is caused by warped records. Deformed vinyl discs can move up and down once per revolution; the frequency is so low that you can’t hear it, but it is picked up by your phono cartridge and mixes with the desired signal. The warp signal, with superimposed audio, occasionally gets strong enough to be noticeable. If you’re recording near the peak level, the signal doesn’t have to rise very far to distort badly. You may be able to see the effect on your deck’s meters, or by taking the grille off one of your speakers and watching the woofer cone move slowly in and out in step with the turntable’s rotation.

Alien Dangers?
Q Please tell me what are the dangers, if any, of using speakers rated at a lower impedance than is recommended by an amplifier manufacturer? Will I shorten my amplifier’s life? Smell ozone? Hear increased distortion? Will aliens come down from the sky and abduct me?
A Ed Mackie
Burnsville, MN

There may be no ill effects at all, but it depends on the design of the amplifier. For a given output voltage—and most amplifiers are constant-voltage devices—the lower the load impedance presented by the speaker to the amplifier’s output stages, the higher the current they will have to produce. Some amplifiers are designed to handle very high currents, but most are not, so if things get out of hand because of too low an impedance, distortion is likely to rise, protection circuits can be triggered, and, in the worst cases (rare), the amplifier might be damaged. All of that is complicated by the way impedance is rated. Speaker manufacturers usually specify a single-digit “nominal impedance” of, say, 4 or 8 ohms, but that’s only an average. Impedance varies with frequency, and there are likely to be parts of the spectrum where actual impedance is below spec. Moreover, the likelihood of such dips causing trouble is greater when the speakers’ nominal impedance is lower than the impedance recommended for the amp.

On and Off Noises
Q My new power amplifier sounds fantastic, but when I turn it on, the woofers in my speakers are suddenly pulled inward and then slowly return to their resting positions. I have often heard that such surges can cause speaker damage. Is it something I should worry about?
A Keith Heuberger
Libertyville, IL

I doubt it. Such phenomena are not all that uncommon, although many amplifiers have delay devices to keep turn-on surges from the speakers. I would be concerned if the woofer cones took more than a couple of seconds to return to their neutral positions. While offset, the voice coils have a lot of juice flowing through them and minimal heat-sinking from the magnet structure. If that were to go on for long, the voice coils could fry. But if they haven’t tried yet, they probably won’t.

Taping 78’s
Q My wife has many old 78-rpm records, and she wants them copied to tape. What do I need to make low-noise transfers, and how do I go about making the best copies possible?
A Frank Sutherland
Edgewood, NM

First, understand that if they have been played often they will never be truly “low-noise.” The 78-rpm record was an inherently noisy medium, primarily because of the materials that were used to make the discs, so it’s unlikely you’ll be able to get rid of all the grunge. But you can make them listenable, and taping them will insure against further deterioration. Of course, you’ll have to start with a turntable that includes the 78-rpm speed. That may not be easy, as there aren’t very many of those around these days. Used-equipment ads or, better, garage sales may yield what you need. Then make sure you have a genuine 78-rpm stylus to play your records with; the geometry of the 78-rpm groove makes any later stylus useless.
(Pfanstiel Corp. of Waukegan, Illinois, is an excellent source for 78-rpm styli; if they don't stock one for your turntable, they may be able to custom-make it.)

Then, make sure you play the records in mono, even if it means bridging the left and right "hot" leads in the tonearm headshell. Just switching your amplifier or receiver to mono won't do it, as stereo will still be fed to the tape outputs. Back-to-back Y connectors between the receiver outputs and the tape inputs can achieve the same thing. Clean the records thoroughly and, if you have a graphic equalizer, knock off everything above about 6 to 8 kHz, and you should end up with tape dubs that sound reasonably like the originals.

**Adding Ambience**

My system consists of a stereo preamplifier, a power amplifier, and two sets of speakers connected to the amplifier's A and B terminals. I would like to add DSP ambience enhancement and Dolby Surround capability. Although I have been told that the best method is to start over with all new equipment, I'm very satisfied with what I have, which is relatively new. What would I have to add to achieve the effects I want?

**Newton Oliveira**

Erlangen, Germany

It seems unlikely that you will need to replace everything; the guiding principle in multichannel systems is that the speakers have similar sonic characteristics, not that they be new or necessarily from the same manufacturer. Buying the speakers as a matched set will weigh things in the direction of tonal consistency, but that is not the only way of going about it.

As long as your four present speakers sound similar to one another, they could form the basis of your new surround system. Then you really need only an outboard surround processor with ambience-enhancement features and possibly a second stereo amplifier to power the surround speakers (some processors have built-in amps for this purpose). These days, virtually all outboard surround processors that include a DSP section for ambience synthesis also include a Dolby Pro Logic decoder for playback of Dolby Surround soundtracks. If you want a center-channel speaker (a good idea), you can add it and an amplifier to drive it (if the processor doesn't already have one built in). Or you could use one channel of a stereo amplifier to drive the center speaker and the other to drive the two surrounds in parallel, since the surround channel is mono.

**Turntables Revisited**

After dusting off my LP collection for the nth time this year, I've decided to take the plunge and add a turntable to my system. But I haven't paid much attention to record-playing developments for the past decade or so, and I'm not really sure what to look for anymore. Any suggestions?

**Mike Maness**

APO Luxembourg

Not to worry. Turntables haven't changed all that much since you last owned one. As you will probably spend a relatively small amount of time listening to vinyl—you did without it for ten years, after all—it makes little sense to blow a bundle on exotic operating features, which, in any case, are now few and far between. Modestly priced turntables can do everything you need in terms of playing your old records. Where I would suggest you spend the bulk of your money is on a really good phono cartridge, and perhaps a spare stylus or two against the day when you won't be able to get replacements. For that reason, it might be wise to stick to moving-magnet cartridges, as most moving-coil models don't have user-replaceable styli. That should also keep the costs down.

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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New Standard

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whatever happened to high-definition TV (HDTV), that much-talked-about technology that we’ve been told will deliver movie-theater-quality pictures and sound into our homes in the “not-too-distant” future? The good news is that it’s still very much alive and will undergo what is hoped will be final testing later this year. The bad news is that its future is still uncertain.

The best-case scenario suggests that HDTV broadcasting in the U.S. is at least two years away. And even if that timetable is met, no one is quite sure how HDTV will play out. Will broadcasters embrace the new system? Or will they balk at the steep investment required to make their facilities HDTV-capable? And assuming that a fair number of stations do go on-line with HDTV programming once the Federal Communications Commission finalizes a technical standard, how will the public react to widescreen sets that are expected to start at $2,500?

HDTV has been a constantly receding target ever since the FCC formed an advisory committee in 1988 to choose a successor to the decades-old NTSC system. The initial goal was to select an HDTV standard by the fall of 1992. Then new digital technologies came along, making the heir apparent, Japan’s analog MUSE system, obsolete overnight. Still, the FCC was confident that it could decide by June 1993.

After more delays, inconclusive testing of the various proposed systems, and the formation of a “Grand Alliance” of several proposals for HDTV last year, officials are still hoping that the new, combined digital system will go to final testing late this year. That would translate into a decision by the FCC’s industry advisory panel by next spring and, if all went well, a final decision by the end of 1995.

But don’t hold your breath. Even that timetable could be optimistic. Broadcasters are now working on a new, improved HDTV system incorporating an expanded version of the Coded Orthogonal Frequency Division Multiplexing (COFDM) technology used in digital audio broadcasting, and that could lead to more delays. They’re also trying to convince the FCC to allow them to use some of the extra bandwidth on HDTV channels for nonvideo services like delivering stock quotes to home computers. A fight over such ancillary services could push HDTV even further into the future.

Contributing to the delays in recent years was the decision to make HDTV computer-friendly. The FCC advisory committee decided last year to give the HDTV picture 1,080 lines of resolution rather than 1,035. (The higher number allows for square—as opposed to rectangular—pixels, which are easier for computers to handle.) The picture will boast twice as many lines of resolution as the current TV standard, eliminating much of the fuzziness that now plagues large-screen TV’s.

Other features of the likely HDTV standard include a widescreen, 16:9 aspect ratio, similar to that of movie-theater screens and 35mm photos, and an interlaced/progressive scanning system, which automatically switches to the appropriate mode depending on the incoming TV signal. Interlaced scanning, used in the current TV system, creates pictures by alternately illuminating two separate fields of lines. Its advantage is that it requires half as much bandwidth for the same number of scanning lines. Progressive scanning, the system used in computer monitors, can potentially provide even better picture quality but requires a wider bandwidth because there’s more data for each active picture line.

Another important feature of the probable HDTV standard—one that has been embraced by many fans of home theater—is the selection of Dolby’s AC-3 six-channel sound system (the heart of the Dolby Stereo Digital cinema sound system used in a growing number of movie theaters). The AC-3 system outperformed the Philips Musicam system in tests largely because of software bugs in the Musicam prototype. Those bugs were later eliminated, resulting in a virtual performance tie between the two systems. The Grand Alliance opted to stick with Dolby’s AC-3 even though the Musicam system is based on the MPEG-2 standard that’s evolving as the worldwide standard for digital data compression. Musicam is now the “back-up” system for HDTV in the U.S. Since most of the world is likely to stick close to the MPEG-2 standard, the decision to move away from it here will almost certainly increase differences between the U.S. HDTV standard and those of the rest of the world, which may mean higher costs and problems in exporting U.S. HDTV programming.

Television manufacturers are prepared to begin building HDTV sets almost immediately once the FCC adopts a standard, but it will be some time before there’s much original broadcast program-
The other day my dad informs me that most normal people are actually looking forward to down, driving station wagons and buying dishes that aren’t plastic. Which translates into: they don’t play the saxophone at three in the morning, eat cheese platters for breakfast, or sleep until ten.

NAME: Chris McAdams.

PROFILE: Furniture Designer.

on Saturdays. Of course, he also thinks The Who is part of an old Abbott and Costello routine, and Costello shouldn’t be used to making tacos and Columbia Cocoa must be where they grind those tasty bean coffees.

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uring to watch. Broadcasters had hoped to use the 1996 Summer Olympics in Atlanta as a showcase to spark consumer interest in HDTV, but they have since decided that there won’t be enough HDTV cameras and videotape recorders available by then.

On the bright side, there’s plenty of existing programming that can easily be converted into the HDTV format. Virtually all color movies can be converted almost overnight, making it likely that cable movie channels like HBO and Showtime will be the first to market with HDTV programming. Viewers won’t have to wait for HDTV broadcasting to get significant improvements in TV picture quality, though. Digital TV is already available in many parts of the U.S. via the direct broadcast Digital Satellite System (DSS) introduced in June by RCA, the DirectTV division of Hughes Electronics, and the United States Satellite Broadcasting (USSB) division of Hubbard Broadcasting. Homes equipped with 18-inch satellite dishes and TV-top satellite receiver/decoders ($699-$899) can receive the improved TV signal by signing up for a cable-TV-like programming package and paying monthly subscription fees to a service provider, DirectTV or USSB. A handful of cable-TV systems also have begun delivering digital TV, but they’re mostly in rural areas. Over time, most cable systems are likely to follow suit.

Converting an analog NTSC TV signal into a digital format eliminates many annoying picture artifacts (such as straight lines that appear jagged and inaccurate color rendition), and compression enables the near-studio-quality video to be delivered to existing TV sets. Consumer studies indicate that any picture quality lost through compression is virtually unnoticeable and completely overwhelmed by the improvements made possible by digital transmission. The picture quality of digital NTSC is so good, at least on TV sets with screens 30 inches and smaller, that the difference between true HDTV and digital NTSC pictures is barely discernible.

Even when the FCC adopts a full-fledged HDTV standard, there’s no guarantee that every TV station will make the multimillion-dollar investment necessary to convert to HDTV. Estimates on how many stations will convert range from 40 percent to nearly 100 percent. The FCC’s chief engineer, Thomas Stanley, thinks that 40 percent will convert to HDTV within fifteen years after the standard is set.

Broadcasters will have three years to apply to the FCC for an HDTV license, then another three years to actually install HDTV equipment. Stations in large, competitive markets are expected to move much more quickly than those in smaller markets, but experts believe that even if the current FCC timetable is met, the first HDTV stations won’t be up and running until late 1996 at the earliest.

If the demonstrations of prototype HDTV systems are any indication, the pictures will be terrific. Even blown up on screens measuring dozens of feet diagonally, HDTV images are remarkably sharp and have virtually no annoying artifacts.

But will Americans run out and buy HDTV sets when they become available? The FCC advisory committee estimates that initial prices will be steep: A 34-inch direct-view (tube-type) HDTV set will sell for about $2,500 and a 56-inch projection set for about $3,800, or $500 to $1,000 more than current topflight NTSC sets of the same size.

Prices are likely to come down over time, just as the prices of other consumer electronics innovations have over the years. But the drop isn’t likely to be as precipitate as it was for, say, CD players and VCR’s. Research and development expenses represented a far higher percentage of the initial prices of those products than they are expected to in the pricing of HDTV sets.

Like current TV’s, HDTV sets will be available initially in two varieties: large direct-view tube sets, up to about 36 inches (diagonal), and larger projection sets. Although set makers predict that they’ll eventually introduce smaller HDTV sets, down to the 11- to 19-inch sizes, early models will be almost exclusively large-screen sets, both because manufacturers’ profits are higher on big sets and because HDTV is a natural for large screens.

One problem will be the sheer size of the tube-type HDTV sets, which are expected to be 3 to 4 feet deep, making it almost impossible to fit them through many doorways. Their bulky presence is also likely to be unpopular among decor-minded domestic partners. While 1-inch-thick flat-panel screens, including liquid crystal displays (LCD), could solve those problems, reliable large LCD panels are still years away. The U.S. Defense Department, for example, began handing out multimillion dollar grants to encourage development of large LCD’s just this year.

Jerry Pearlman, chairman of Zenith, recently predicted that HDTV sets would be in 1 percent of all U.S. households within two years of introduction, a penetration rate far faster than those of any previous consumer electronics products and twice as fast as the rate for color TV’s and VCR’s. In contrast, a recent survey conducted by the Media Lab at Massachusetts Institute of Technology found that only 5 percent of Americans were willing to pay even $500 more for an HDTV set than for a current-generation set.

Manufacturers are counting on the so-called “early adopters,” those who were the first in their neighborhood to buy CD players, to jump-start HDTV by making it a status product. Some research studies, however, indicate that most consumers don’t believe that the improvement in picture quality provided by HDTV will be nearly as significant as the jump from black-and-white to color TV. Moreover, the full extent of HDTV’s quality improvement is apparent only on TV screens that are at least 30 inches diagonal—and relatively few households have TV’s that large.

Such concerns have caused many to question whether HDTV will ever dominate TV viewing. That, in turn, lessens the incentive for broadcasters to invest in HDTV equipment and programming. And without ample HDTV programming, people won’t buy HDTV sets, creating a classic chicken-or-egg scenario that may make investing in HDTV a risky business.

Michael Feazel, senior editor of the industry newsletter Television Digest, has been covering HDTV since 1988.
What's an Audio Review For?

As I see it, the task of a reviewer is to provide a reader with information that might be useful in making a product choice. I use the term "product" loosely, since what is reviewed need not be a physical object: it might be a novel, a play, a musical composition or performance, the driving characteristics of an automobile, and so forth. In most cases, the review is purely subjective—the personal opinion of the reviewer. One can always disagree with a reviewer's judgment, and there can be great differences in individual perceptions of a reviewed "product."

Physical objects such as cars or hi-fi components are another matter. Their characteristics are subject to measurement, to a greater or lesser degree, and (at least in theory) can be verified by anyone possessing the necessary equipment and skills.

There are some qualities that can be measured (more or less) that may be related to purely personal criteria of "quality" or "goodness" for the overall product. The cornering characteristics or acceleration of an automobile can be measured, and they can also be felt through the driver's contact with the seat, steering wheel, and so forth. Automobile reviewers have their own subjective criteria for rating these qualities, and readers of their reviews have a fairly good idea of what each review attempts to convey. After all, we can all relate to acceleration (whether straight ahead or in cornering).

Although an audio reviewer faces some of the same problems, there are major differences. Most electronic components (amplifiers, tuners, and so forth) have a single input (an audio- or radio-frequency voltage) and a single output whose waveform is supposed to correspond to the input signal in some specific and well-understood way. Moreover, technology has advanced to the point where most such components with pretensions to high fidelity do whatever they are supposed to do extremely well as long as they are operating within their design limits.

For example, although no amplifier is "perfect" (with its inputs and outputs absolutely identical except for amplitude), one that is functioning properly with flat frequency response over the audio range and sufficiently low noise and distortion is unlikely to alter the sound of a music recording appreciably, or in most cases even detectably, when operated within its linear power range.

Does that mean there are no differences between amplifiers? Not at all—but those that may exist, sonic or otherwise, can always be explained by competent laboratory measurements. In fact, the most significant performance differences between good electronic audio components are usually related to the bounds within which they can be expected to remain accurate reproducers—how much power an amplifier can deliver to a loudspeaker without overloading, for example. Such characteristics are most readily detected and most easily described by means of laboratory measurements.

But what about the loudspeaker—one of the most important components of your system? Here measurements face grave difficulty. Unlike an amplifier, with its single, known input signal and the corresponding single, easily measurable output signal, a speaker produces an infinite number of different (though similar, one hopes) outputs simultaneously from a single input! Not only that, but each of those outputs is hugely affected (not necessarily in the same way as the others) by the room's dimensions and acoustic properties, the placement and orientations of the speakers, and the location of the listener. Finally, there is the fact that each listener's unique hearing system and brain together determine what he "hears" from the totality of sound reaching his ears.

If you think I am saying that speaker performance is essentially unmeasurable (in the sense that one thinks of measuring the performance of the electronic components in a system), you have received my message loud and clear.

To be sure, we do make measurements in an attempt to identify and quantify some of the properties of a speaker. The measurements serve (when all goes well) to confirm certain sonic characteristics that may have appeared in listening tests or to draw our attention to some other distinctive quality. I spend many hours listening to music during speaker tests, whenever possible comparing the speaker under test with a comparable competitive model. Almost every speaker sounds its best with certain recordings. It is equally likely that with other program material some other speaker would prove superior (in your own judgment, which is all that finally matters).

Loudspeakers almost always sound distinctly different from each other, even when their response curves appear similar. Consequently, a choice between speakers should never be based on a single hearing or on the playback of a single recording. And the final choice must suit you, not a reviewer or "expert."

There is something else to remember about an "expert" opinion from a reviewer. It is just that, opinion, not necessarily fact. There can be a considerable difference between the two. I present my measurements as facts (under the stated test conditions), and I stand by those statements. My opinions are another matter. You may disagree with them strongly (please, not violently!), but I suggest that you look at the facts, listen for yourself, and, by all means, make up your own mind. In particular, don't let anyone tell you that you should be hearing something that you simply don't. Maybe it is really there for the other fellow, but if you don't hear it, it is not there for you.

The speaker (or the recording, for that matter) has yet to be made that won't alter the original signal to some audible degree. Some will be better than others, but none will be perfect. So don't expect your hi-fi system to never be capable of producing a performance that is not going to happen. If that is the sound you crave, do as I do: Go to concerts regularly and hear the real thing. Then go home and enjoy your hi-fi system for what it is—a superb and affordable way to bring your favorite music into your home.
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Energy Home Theater Reference Speakers

DAVID RANADA • TECHNICAL EDITOR

From Canada comes Energy's première entry into the home theater speaker market, its Home Theater Reference system. The system consists of four different speakers, each available separately (you get no price break by buying them in combination).

The RVS-1 left and right main-channel speakers ($700 a pair) and the RVS-2 center-channel speaker ($350 each) are essentially identical except for their preferred orientations—vertical for the RVS-1, horizontal for the RVS-2. Each contains a 1-inch fluid-cooled soft-dome tweeter crossed over at 2.5 kHz to two 5¼-inch molded-polypropylene cone woofers operating in a dual-vent enclosure measuring 8¼ x 19 x 11¾ inches. Those dimensions are width, height, and depth for the RVS-1, but height, width, and depth for the RVS-2. The rated sensitivity for both models is 88 dB sound-pressure level (SPL) with a 2.83-volt input (equivalent to 1 watt into 8 ohms), while impedance is given as 6 ohms nominal, 4 ohms minimum. Recommended amplifier power is 25 to 175 watts per channel. Dual multiway binding posts are located on the speakers' rear panels. The cabinets are finished in a high-gloss black on all surfaces, even beneath the removable front grilles, except the top and bottom of the RVS-1 and the ends of the RVS-2, which are covered in what appears to be black grille cloth. Both speakers are magnetically shielded.

Because their vents are on their rear panels, the RVS-1 and RVS-2 should not be placed directly against a wall (or built into one). I found that the RVS-1's sounded best when they were located at least a couple of feet away from all walls and at least 21 inches above the floor (so that the centrally located tweeters are close to ear level). Energy recommends placing the RVS-2 center-channel speaker above or below a TV screen, as close as possible to ear level while you're listening.

Energy recommends placing the RVS-2 center-channel speaker above or below a TV screen, as close as possible to ear level. I got good results—without an emphasized lower midrange due to reinforcement by the screen—by putting the RVS-2 on a low stand in front of the TV.

Like many other surround speakers, the Energy RVSS ($550 a pair) is a quasi-dipole, but the company says it obtains unusually good low-frequency reproduction by operating it in "bi-pole" mode, with the drivers in phase with each other rather than out of phase, from 400 Hz down (though in that frequency range a bi-pole really has an essentially omnidirectional radiation pattern). Each RVSS speaker has two fluid-cooled ¾-inch soft-dome tweeters crossed over at 2.5 kHz to two 5¼-inch polypropylene-cone woofers in a small, dual-port hexagonal enclosure measuring 10¼ x 10 x 8¼ inches and weighing just a little more than 13 pounds. Instructions and brackets for wall-mounting the surrounds are provided. The angling of the RVSS enclosures enables them to be mounted in room corners without cutting off their output.

The rated impedance of the RVSS surround speaker is the same as for the RVS-1 and RVS-2, but its sensitivity is given as 86 dB SPL. Recommended amplifier power is 15 to 125 watts. The enclosure is completely covered with grille cloth, which is available in either black or white.

Energy makes no definitive recommendations for placing the surrounds beyond the usual one of aiming the "null" of the dipole radiation pattern at the listener. The manual did illustrate side (rather than rear) placement, a suggestion we followed, placing the speakers about 8 feet up the walls on either side of the listening position.

Each AS-180 subwoofer ($750) contains a single 12-inch driver in a vented, 56-pound enclosure measuring 16¾ x 18 x 18¾ inches. Each enclosure contains a single-channel subwoofer amplifier, which has unusually high power ratings (180 watts continuous, 720 watts peak), and a dual-channel active crossover. The subwoofer can be connected to the system in three different ways, which I will call Modes A, B, and C.

Mode A is the simplest: Connect one AS-180 in parallel with both left and right main speakers. To do that you run a pair of speaker cables either from the amplifier's main left and right speaker outputs or from the main speakers themselves to spring connectors on the back of the subwoofer. This kind of connection draws hardly any current, so thin, inexpensive cables will suffice. In this mode the crossover operates only as a low-pass
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filter, removing high frequencies from the signal and feeding only the lows, summed to mono, into the AS-180's amplifier. The low-pass crossover point can be varied in all three modes between 50 and 150 Hz.

Mode B is a line-level version of Mode A: Run a regular stereo cable from a suitable stereo line-level amplifier or surround-processor output (one subject to a master volume control) to input jacks on the subwoofer. You can also use this mode if your signal source has a dedicated line-level subwoofer output. If the signal from your source's subwoofer output has already passed through a crossover, you should "open up" the AS-180's built-in crossover by turning its frequency control up to 150 Hz, at least at first.

Although the most complex, Mode C is perhaps the best: You run a stereo signal into the subwoofer as in Mode B, but you also run a stereo cable from the subwoofer crossover's line-level outputs back to your amplifier or receiver. The returned signals have been high-pass filtered by the AS-180's crossover, meaning that the low frequencies the subwoofer reproduces have been removed (starting at 90 Hz and rolling off below that frequency at 18 dB per octave, ideal characteristics for the RVS-1, as might be expected). Because in Mode C the main speakers don't have to reproduce the lowest frequencies, they can play louder without objectionable distortion from low-frequency overload. That is one of the greatest benefits of using separate powered woofers, and it cannot be obtained if Mode A is used. It can be obtained with Mode B, but only if your signal source has main-speaker high-pass filtering as well as a dedicated subwoofer output.

The "loopback" hookup of Mode C is most easily managed with components that have pre-out/main-in connections or in systems having separate power amplifiers. It is important that the loopback occur after surround decoding in the signal chain; otherwise it will make a mess of the decoder's sound steering. Since the crossovers and woofer amplifiers are in the woofer enclosures and not in a separate box, using Mode C will result in lots of power, signal, and speaker cables running around your listening room.

If Mode C is used, you should set your surround decoder's "surround mode" or "center channel" control to "normal" or "small speaker" so that lows that would normally be steered into the center are shunted instead to left and right and thus into the subwoofer. Also, you should switch out any crossover filtering performed elsewhere in your system. All the amplifier connections and controls of the AS-180 are on the back. The controls include power on/off, subwoofer volume, low-pass crossover frequency, a subwoofer phase-invert switch, and a switch that boosts the upper frequencies of the subwoofer output for "extra bass impact" that "will keep you on the edge of your seat, feeling every emotion," as the product literature puts it. The connections will also prevent you from backing the subwoofer flush against a wall—just as well given that

My, how they've grown.
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But size is just part of the story.
the amplifier heat sink and the woofer
port are also on the rear panel. The
AS-180’s three-conductor power cord,
only 5¼ feet, is probably too short for
many system layouts.

I’ve taken so much trouble explaining
the hookup and setup options for
two reasons. First, many of these
points are poorly explained or ignored
altogether in the manual for the front
and surround speakers. And the sub-
woofer’s manual offers only the va-
guest recommendations about place-
ment and adjustment. I used a spec-
trum analyzer and microphone during
setup and ended up with the subwoof-
er in a corner, contrary to the manu-
facturer’s recommendations.

The second reason I’ve presented so
many details on setup is far more posi-
tive: Once the Energy speakers were
connected properly, placed well, and
adjusted for proper bass response, they
revealed themselves to be among the
best speakers I’ve heard. In music play-
back, an acid test for any speaker, the basic tonal bal-
ance was toward accuracy and low
coloration. The RVS-1’s measured one-
third-octave on-axis response showed a slight downward tilt from lows to
highs, with a wide but very shallow
dip superimposed at around 3 kHz. At
times I thought I could detect those
traits as a slight lack of brilliance and
presence, but then I’d change to differ-
etent music and the highs would be
here in abundance. In any case, the
speakers’ characteristics portrayed fairly
the differences in tonal balance
among the hundred or so music tracks
I played: Bad recordings sounded bad,
good ones good.

Image precision and stage depth
were very good in both two-channel
and surround-sound playback. The
system’s dynamic range was excellent:
Background noise from the subwoofer
electronics was very low, and the
Mode C hookup, in particular, was ca-
pable of delivering very high sound
levels and hefty amounts of low bass
with no sense of strain. Specially con-
structed test tones revealed the rela-
tively extended low-frequency re-
spoonse of the RVSS surround speak-
ers. But the difference between them
and smaller quasi-dipole surrounds
was not particularly audible with real
soundtracks because most of the lows
came out of the subwoofer. The ex-
tended bottom end of the surrounds
could be useful with good music-or-
iented ambiance enhancement.

If you are more into music than
movies, you might still consider get-
ting one or two AS-180 subwoofers
and a pair of RVS-1’s as an attractive
alternative to a pair of single-enclo-
sure speakers at the same price. Ener-
gy’s nearly identical AS-90 subwoofer
might even be a better deal at $550
each, with the minor penalty of 3 dB
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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 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."

Our 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

Our Popcorn

Our Surround Speakers

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.

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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.

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We Know How To Make Loudspeakers
B&K AVP2000 Audio/Video Preamp

DAVID RANADA - TECHNICAL EDITOR

In the old days—around ten years ago—only big electronics companies could afford the production costs associated with microprocessor-controlled audio equipment. Even then, a component with an internal computer was rare. It's a measure of the sophistication of today's integrated-circuit designs that a small and young American electronics company such as B&K Components (no relation to the Bruel & Kjaer of microphone and test-equipment fame) can produce such a product. And that product, the AVP2000 audio/video preamplifier, takes full advantage of its onboard microprocessor.

For instance, the AVP2000 can independently control two sound systems installed in different rooms. The preamp has two sets of outputs, Zone 1 (main room or group of rooms) and Zone 2 (second room or group of rooms), and the audio and video input sources (which can be different), volume, and channel balance can be set separately for each zone. Adjustments made to one zone will not affect signals sent to the other.

The preamp also has eight memory presets in which you can store a complete set of those adjustments, plus source selection, volume, balance, and muting, for both zones, enabling you to go instantly to a particular setup at the touch of a button. In addition, each preset will record the current brightness (off, dim, or bright) of the front panel's sixteen-character fluorescent display and, for Zone 1 only, the settings of the tape-monitor loop and the FX (signal-processor) loop. You can also name the presets (the manual gives MON FOOTBALL as an example), you can even rename the inputs if you like.

While renaming of inputs is a function available in some other components, the AVP2000 has one feature that is, as far as I know, unique: It can be made to respond to commands from practically any other component's infrared remote control. There is a special display-menu sequence for substituting "foreign" commands for those of its own remote control. This feature can be handy if you lose or break the AVP2000's handset or, more important, if you want to use a multi-component remote control of some sort instead of the AVP2000's own remote.

One last unusual function is Control Out, which turns on a back-panel DC signal (12 volts at 15 milliamperes) that can be used to activate an external system or component (to drop down a video screen, for example). The desired status of the control signal is also memorized with each preset.

Other rear-panel facilities include connections for a CD player, tuner, signal processor (such as an equalizer), audio tape recorder, two VCR's, and a laserdisc player. There is no phono input. All video inputs and outputs have both composite-video and S-video connectors, but the preamp, as usual, performs no conversion between them. The video and audio connections are widely separated from each other. That could increase cable tangling, but it also helps to isolate the video and audio signals from each other within the preamp.

The optional surround-sound decoder module, which installs inside the AVP2000, adds a separate set of line-level outputs (RCA jacks) for the front left, right, and center channels, the surround channel (left and right), and a subwoofer. The decoder's features are available only to Zone 1, and its
WITH OUR HUNDRED DISC CHANGER, YOU COULD LISTEN TO MUSIC FOR FIVE STRAIGHT DAYS WITHOUT REPEATING A SINGLE SONG.

BUT IS THAT A GOOD THING?

Nonstop music for the better part of a week may be a little extreme, we admit. But it’s entirely possible with Pioneer’s new 100 Disc CD Player. The changer that stores all of your CDs in a regular rack space and gives you instant access to any song on any disc. In fact, all you’ll ever need to touch is the remote. It lets you cue up individual tracks, and even create customized banks of songs or discs. So you’ll be getting to more of your music than ever before. Just don’t blow off eating, sleeping and bathing regularly.
Each zone is supplied with two sets of stereo RCA-jack outputs, while Zone 1 also has a set of three-prong (professional-audio) XLR balanced-output connectors. Since the principal advantage of balanced connections is superior rejection of external interference with long cable runs, I would have thought it more appropriate to have Zone 2 signals on the XLR outputs. There are no AC convenience outlets, but there are three extra RCA jacks. One, labeled IR IN, is for attachment to an external infrared receiver (B&K says that the AVP2000 is compatible with most custom-installed infrared control systems). The other two, labeled SEND and RCV, are designated "for future use."

Given such a large number of inputs and outputs, the AVP2000's front panel is surprisingly empty: a 1/4-inch headphone jack, six pushbuttons (including power and muting), the display, and a volume knob. But the reason for the wide-open spaces is that you can operate virtually all of the preamp's functions with just four menu-activating buttons and the "interactive" display.

The unusual volume control is a spring-loaded knob, not unlike the shuttle ring on a videodisc player. Rate it to either side, and the volume changes by steps that vary somewhat, but not enough by spacing. It's easy to run the AVP2000 from the handset than from the front panel, because on the remote many functions (such as input or preset selection) have dedicated buttons and you don't have to slog through the interactive display process required by front-panel operation. The handset is generally well laid out, with the buttons differentiated by size and color but not enough by spacing. It's easy to miss the FX and Menu buttons that are used to control the surround decoder, and the labeling is hard to read in a darkened room.

Fancy switching and programmability aside, the AVP2000 is a rather basic preamp. The only real signal processing it performs is in volume adjustment and the surround functions, which include Dolby Pro Logic decoding as well as several ambience-enhancement modes. The additional
Definitive's Amazing BP20s Win Top Critic's Choice Award!

Experience the miracle of bipolar technology when you hear the absolute sonic superiority of Definitive's revolutionary BP8, 10 & 20

"Truly Outstanding"
— Stereo Review

Sound & Vision's Critic's Choice Award is one of the industry's top honors. It's no wonder experts agree that Definitive's revolutionary bipolar BP8, BP10 and BP20 are three of the world's finest speakers and are sonically superior to any conventional speaker, regardless of cost.

These American-made, advanced technology bipolar (front and rear radiating) systems combine lush spacious soundstaging, lifelike depth-of-field, razor-sharp resolution and pinpoint 3-D imaging with powerful subwoofer-like bass (to below 20 Hz), high efficiency, wide dynamic range and easy-to-position convenience. The dramatic result is superb music and movie reproduction so real that it has been called, "a sonic miracle!"

The Ultimate Home Theater
Combine the BP8s, 10s, or 20s with our C/L/R 1000, C1 or C1 jr. center channel, BP1 or BP2 bipolar surround speakers and optional PowerField subwoofer for the ultimate in sound for music and home theater.

Award after Award Confirms Definitive's Sonic Superiority
- Stereo Review "Showstoppers" and "Expert Dream System!"
- Video Magazine Product-of-the-Year
- Audio Video Speaker-of-the-Year
- CES Design & Engineering Awards
- Sound & Vision Critic's Choice
- Inner Ear Report Editor's Choice

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See our dealer list on facing page  (410) 363-7148
TEST REPORTS

modes are Cinema (same as Pro Logic but with a longer maximum surround delay), Stereo Hall (a single delay to the surrounds), Enhanced Hall (a single delay to the surrounds and center speaker on), Stereo Front/Rear (stereo signals fed to the surround speakers as well as to the front left and right), Enhanced Stereo (center speaker on), Arena (a long-delay echo for programs like sports telecasts), and Stereo (plain two-channel stereo, though you should switch the processor off altogether if you want the cleanest possible stereo reproduction).

The AVP2000's main preamp circuits measured quite well. Its output and input overload levels, in particular, were exceedingly generous. The figures for distortion and signal-to-noise ratio (S/N) were also very good, and frequency response was superb (the variations given in the "Measurements" panel are essentially the resolution limits of our test equipment).

A note on noise: Our test reports for CD and videodisc players commonly report signal-to-noise ratios (or, better, signal-to-dither ratios) of greater than 90 dB. A preamp S/N of "only" 84.5 dB, such as I measured from the AVP2000, would seem to indicate that the preamp is adding noise to its CD output. Not to worry. If the AVP2000's S/N were measured at input and output levels of 2 volts, corresponding to the conventional maximum output of a CD or videodisc player, rather than the 0.5-volt level specified in the EIA amplifier-test standard, it would improve by 12 dB, to 96.5 dB, about the same as that from a CD player. And that's precisely what we measured.

The Dolby Pro Logic system also tested very well, which is attributable in part to the high-performance Analog Devices Pro Logic decoder chip used in the AVP2000's surround module. Noteworthy were the almost spot-on THX-reference calibration of the surround channel's noise-reduction system and the very accurate noise-reduction frequency response at all levels specified in the Dolby Pro Logic standard. THX laserdiscs and other discs with spectacular sound should deliver more accurate surround-channel frequency response over a wider range of levels through the AVP2000 decoder than through many other Pro Logic decoders.

The effectiveness of the other surround modes depended heavily on the music. On the other hand, since the Hall and Arena modes introduced only a single delayed surround-speakerambi- ence "reflection," it was difficult to make them sound really awful—something all too easy to do with similarly monikered modes in some other products. I liked the use of the center-channel speaker in a couple of the modes (it helps create a firmer stereo image), and Stereo Front/Rear is a useful party mode that's surprisingly rare in other equipment.

Even after a week-long period of orientation, however, I found the AVP2000's surround modes somewhat cumbersome to use. That was not the fault of the complete, logically ordered, well-illustrated, and well-written manual (a must-read for this product). Nor did the lack of on-screen readouts prove a major impediment. The selected input and its volume setting are usually shown in the front-panel display, and not having to turn on a TV to determine those and other important control settings is a blessing when all you want to do is listen to music.

The principal operational problem with the AVP2000 stems from its paucity of front-panel buttons, which necessitates unwieldy multistep menu-selec- tion processes for many functions. But even with the remote and its separate control buttons, using any of the advanced features (including Pro Logic decoding) can require a long button-pushing sequence in which it is very easy to overshoot your goal, so that you have to start the whole sequence all over again.

For example, readjusting the speaker levels during Dolby Pro Logic playback (after they have been level-matched by means of the internal test tone) requires a control sequence just to get to the speaker-balance mode. And when you get there you can't simply turn the surrounds up or down by a couple of decibels, which is perhaps the most common adjustment you'd want to make. You can only adjust the front/surround balance, which is not quite the same thing. Outside the surround modes, things go much more smoothly, since little menu-driven interaction is required if you're using the remote.

I also felt that the preamp's preset capabilities could be improved. It would be better if the presets didn't memorize the volume setting (or gave you the option of not including it). Volume settings normally vary quite a bit, and if you were to accidentally memorize an unusually high one, you could get an alarming surprise the next time you selected that preset. More useful would be the ability to preset input sensitivities in order to match levels between signal sources.

One nice thing about a microproces- sor-controlled product is that it is under the control of software. Changing software is usually a lot easier than changing hardware, and it can be done for equipment already in the field as well as new units coming off the line. So, over time, B&K may well smooth out some of the rough edges on its surround-processor control system. In every other respect, the AVP2000 is a terrific product, delivering excellent performance in all modes, laudable multroom capability, and line operation as a basic preamplifier, all at a very attractive price.
"Definitive's Subwoofers Guarantee Ultimate Bass In Your Home!"

Our extraordinary new PowerField™ 1800 features a 500-watt RMS amp, fully adjustable electronic crossover and massive 18-inch driver for only $1599

“Showstoppers” — Stereo Review

When Definitive set out to build the world's finest sounding subwoofers, our goal was the perfect synergy of powerful, earth-shaking bass for home theater and a refined and expressive musicality.

First, we developed PowerField Technology for superior high-power coupling and unexcelled transient detail. Next, we engineered beautiful rock solid monocoque cabinets which house our 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.

Perfect for Your System

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!
Luxman A-383 Integrated Amplifier

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

The Luxman A-383 is a powerful and versatile stereo integrated amplifier with a number of features rarely found in this type of component. Although a two-channel amplifier and therefore not a self-contained audio/video control center, it is easily connected to an external surround processor and a video monitor, VCR, and laserdisc player. In its size, weight, price, and general appearance, however, the A-383 is closer to today's large A/V receivers than to a typical integrated amplifier. It is conservatively rated at 100 watts per channel into 8 ohms with less than 0.04 percent distortion and has enough current capability to drive loads of 4 ohms or less easily and safely.

The large front panel presents a familiar and undaunting array of controls, most of them large rectangular buttons. They are clearly labeled CD, tuner, phono, tape 1, tape 2, LD (laser-disc), A/V (audio/video), VCR, and power. A Line Straight button bypasses the tone controls and such switchable functions as a 20-dB attenuator and loudness compensation (both operated by smaller buttons). Other small buttons select two pairs of speaker outputs, stereo or mono operation, and two functions related to the use of a compatible Luxman CD player in a system with the A-383.

The large volume-control knob at the right is motor-driven when operated from the supplied infrared remote control. Several smaller knobs along the bottom of the panel operate the bass and treble tone controls and the balance control, and a record-out selector enables recording from any input source regardless of which is being listened to. A nearby headphone jack completes the front-panel array.

Despite a considerable population of jacks (more than thirty), the A-383's rear apron does not present a confusing or overwhelming appearance (unlike that of some complicated A/V receivers), thanks to the amplifier's generous dimensions. There are inputs (and outputs, where applicable) for all the sources, plus a video output for a TV monitor. There are also jacks that
World's Finest Center Channel Speakers

Optimum home theater reproduction places heavy demands on the center speaker, the most important speaker because it handles 50% or more of the program material. It is no place to settle for second best.

Definitive's award-winning C/L/R 1000, C1, and C1 jr. are the finest sounding shielded, low profile, high resolution center channel speakers available. (The C/L/R can also be used as a main left and right speaker.) They use superior state-of-the-art components and technology for extraordinary ultra-high definition, articulate clarity, high-power handling, tremendous dynamic range, superior depth retrieval, lifelike presence and wide, full-range frequency response.

BP1's & 2's Bipolar Advantage

Experts agree that Definitive's bipolarss provide an incredible, perfectly diffuse sound source which totally immerses you in the action.

BP1s and BP2s are unique, ultra-compact, high resolution bipolar (front and rear radiating) systems engineered for superior performance on the rear/side surround channels of the finest home theater systems. The use of BP1s and BP2s results in a much more lifelike, dramatic, all-enveloping listening experience than is possible with conventional speakers. Visit a Definitive dealer and hear the dramatic difference for yourself.
enable a signal processor (such as a surround-sound decoder) to be inserted in the signal path. Additional jacks are provided for optional remote-control accessories that can integrate the amplifier into a multiroom system.

The phono input can be switched for a moving-magnet (MM) or moving-coil (MC) cartridge. The speaker outputs are insulated multiway binding posts that accept single or dual banana plugs, stripped wires, or lugs. A unique feature of the A-383 is the Line Phase Sensor indicator on its rear apron, designed to detect incorrect AC-line polarity (which could be a shock hazard or a cause of hum in the system). The A-383 has no AC convenience outlets.

Preconditioning the A-383 (driving both channels to one-third of their rated power into 8-ohm loads) left the top of the amplifier only moderately warm, still comfortable to the touch. Since that kind of operation normally generates the highest temperatures an amplifier will experience, it is safe to say that the A-383 will present no heat-dissipation problems in a home installation. During extended listening tests the top was never more than faintly warm to the touch.

At 1 kHz, the outputs clipped at 135 watts per channel into 8 ohms and at 210 watts into 4 ohms. The dynamic (short-term) output was substantially greater, and in that test we also drove 2-ohm loads, to an impressive 440 watts per channel. From 20 Hz to 20 kHz at a constant 0.1 percent total harmonic distortion plus noise (THD+N), the amplifier delivered between 127 and 130 watts per channel into 8 ohms and between 181 and 193 watts per channel into 4 ohms.

A spectrum analysis of the distortion components was even more impressive. At 125 watts into 8 ohms at 1 kHz, the combined level of all distortion products up to 20 kHz was a minuscule 0.006 percent, or -84 dB. With a 4-ohm load, at 180 watts output, the distortion was even lower—0.005 percent, or -85 dB.

Other measurements were equally impressive. The frequency response with Line Straight engaged was a virtually ruler-flat ±0.01 dB from 20 Hz to 6 kHz and down just 0.1 dB at 20 kHz, rolling off to -3 dB at 110 kHz. Even with the tone controls in the signal path, the response deviations were only slightly greater.

The tone-control characteristics were almost perfectly symmetrical about a 1-kHz center frequency as well as about the response axis. Although not a particularly critical matter, a number of tone controls we have encountered have had characteristics only loosely related to their settings. The Luxman A-383's tone controls produced curves resembling textbook illustrations.

Switching on the loudness compensation introduced a boost of 4 to 6 dB at low and high frequencies, relative to the 1-kHz level, that did not vary with volume setting. Though hardly an important consideration for most listeners, that characteristic is a departure from the original concept of progressively compensating for reduced hearing sensitivity at frequency extremes as the overall level is reduced.

Although we did not use any of the A-383's multichannel capabilities, the system remote control can operate a number of other Luxman components (tuner, CD player, tape deck) as well as select inputs and vary the volume setting on the amplifier.

As its weight and bulk suggest, the Luxman A-383 is built like a battleship, and there was clearly no skimping in its design and construction. Although its weight is given as 14 kilograms (about 31 pounds), it felt heavier. As in every other characteristic, however, this beautiful amplifier matched its specification, weighing in at 31 pounds on our scale.

Our tests and use of the Luxman A-383 left no doubt that it would be an excellent choice to serve as the heart of the finest home audio (or audio/video) installation.

### Measuresments

<table>
<thead>
<tr>
<th>Output at clipping (1 kHz)</th>
<th>8 ohms</th>
<th>4 ohms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>150 watts</td>
<td>240 watts</td>
</tr>
<tr>
<td>Clipping</td>
<td>135 watts</td>
<td>210 watts</td>
</tr>
<tr>
<td>Dynamic headroom (re rated output)</td>
<td>1.3 dB</td>
<td>1.8 dB</td>
</tr>
</tbody>
</table>

- **Distortion at rated power**: 0.006%
- **Sensitivity (for 1 watt output into 8 ohms)**: 16 mV
- **A-weighted noise (re 1 watt output)**: 79 dB

<table>
<thead>
<tr>
<th>Phoneo-input overload (1-kHz equivalent levels)</th>
<th>20 Hz</th>
<th>1 kHz</th>
<th>20 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 mV</td>
<td>143 mV</td>
<td>140 mV</td>
<td></td>
</tr>
</tbody>
</table>

| Phoneo-input impedance | 45,000 ohms in parallel with 380 PF |

**Tone-control range**

- 100 Hz: ±10 dB
- 1 kHz: ±10 dB

**RIAA phono-equalization error**

- 20 Hz to 20 kHz: +0.1, -0.6 dB

**Frequency response (with tone controls centered)**

- 20 Hz to 20 kHz: +0.5, -0.5 dB
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How Do You

...The Best Value

Cambridge SoundWorks Introduces New Ensemble, New Ensemble II

Audio Magazine once said that our Ensemble speaker system may be "the best value in the world." Dozens of critics and thousands of customers have applauded our Ensemble and Ensemble II speaker systems. Designed by Audio Hall of Fame member Henry Kloss, (founder of AR, KLH and Advent), these systems have become best sellers by offering very high quality construction and accurate, wide-range music reproduction with precise stereo imaging—all at factory-direct prices, with no expensive middlemen.

We are now pleased to introduce new versions of our Ensemble and Ensemble II systems, as well as our new, ultra-compact Ensemble III system.

The New Ensemble

New Ensemble is an improved version of our original, dual-subwoofer/satellite speaker system. New Ensemble maintains the dual subwoofer design of Ensemble, 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. New Ensemble's two ultra-slim subwoofers give you more placement flexibility than any speaker system we know of, and is 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 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."

So What's New?

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

1. New "long throw" subwoofer speakers with built-in heat sinks.
   New Ensemble 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.
   New Ensemble's satellite speakers use the same high quality 1 3/4" tweeter, 4" midrange driver and crossover as the original Ensemble, 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), we believe our New Ensemble system competes head-on with speakers selling for hundreds of dollars more. Available factory-direct with black vinyl-clad subwoofers for $549, or with black-laminate subwoofers for $629.

The New Ensemble II

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

So What's New?

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

The New Ensemble III

New Ensemble III is an improved version of our original, single-subwoofer/satellite speaker system. New Ensemble III maintains the single subwoofer design of Ensemble, 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. New Ensemble III's subwoofer is an improved version of our Powered Subwoofer, which provides more linear cone excursion for more accurate bass. A unique integral heat sink provides improved power handling.

So What's New?

New Ensemble III maintains the overall tonal balance, frequency range, power handling and quality of construction that have made the original Ensemble II one of the country's most popular speaker systems. There are two basic differences. The first is...
Improve On In The World

- and a new member of the family, Ensemble III.

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

New flared subwoofer port. New
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 new port
provides smoother air flow, virtually
eliminating the generation of any extraneous
noise on strong, low bass notes.

Due acoustic suspension,
sealed cavity.

Flared port.

We know you'll like our Ensemble III
stereo system - if you don't, return it
within 30 days for a full refund.

$667 or $19 Per Month

We combined Ensemble III with ad-
vanced Pioneer components to create a
true high performance sound system at a
great price. The Pioneer receiver delivers
100 watts per channel and includes 6
inputs. Remote controls other Pioneer
components. The Pioneer CD player uses
a super-high-speed 1-bit digital-to-analog
converter for natural, accurate sound,
and it's loaded with features. This system
offers outstanding performance and
value—all in a very compact package.

"...Beyond Its Price And Size Class
Stereo Review" said that the original
Ensemble II "performs so far beyond its
price and size class that it can be compared
only with much larger speakers at substan-
tially higher prices." We believe New
Ensemble II carries on this
tradition, clearly outperform-
ing other speakers in its
category, including well-
known models that sell for
about twice the price.
Available factory-direct for
$439.

The Ensemble III

Now you can bring the
clear, balanced wide-range
sound of Ensemble spea-
kers to a small room.
Our new 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 one subwoofer
cabinet measuring just 8" x 8" x 15".

Surprising Accuracy
and Musical Range at a Low Price.

Compared to our New 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 record-
ings Ensemble III will
sound virtually identical
to New Ensemble II. It
simply won't play quite
as loudly. Its construc-
tion quality matches
that of our other

Ensemble speakers. With a factory-direct price
of only $329, Ensemble III is perhaps the best
speaker value of all time.

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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 con-
tinental 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.

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CIRCLE NO. 6 ON READER SERVICE CARD
The new ADS S-Class family of compact loudspeakers was designed, the company says, to provide exceptional sound quality at moderate prices. The ADS S-700, which we tested, is the largest of the three models currently in that line.

The S-700 is intended primarily for stand mounting, and ADS says that for best results it should be placed at the listener’s ear level, away from the room walls, and at least two feet from any corner. Its cabinet, made of ¾-inch-thick medium-density fiberboard (MDF), has a deep charcoal-gray matte finish. A removable frameless perforated-metal grille, matching the color of the cabinet, is supported on stand-offs about ¾ inch from the front baffle.

ADS designed and built the drivers as well as the crossover network. The S-700 is a two-way system with a 7¾-inch woofer operating in a sealed (acoustic-suspension) enclosure and crossing over at 3 kHz to a 1-inch dome tweeter. Both drivers are mounted flush with the baffle. The woofer cone and tweeter dome are made of a proprietary copolymer material, and the tweeter’s voice coil is protected against burnout by an automatically resetting solid-state device.

The four input terminals (separate pairs for the tweeter and woofer sections) are five-way binding posts recessed into the back of the cabinet.

Normally, the two sets of driver inputs are connected together in parallel by a small printed-circuit board, which can be removed for biwired or biamplified operation of the system.

The S-700’s nominal impedance is 4 ohms, and its rated sensitivity is 88 dB sound-pressure level (SPL) at 1 meter with 2.83 volts of pink-noise input (equivalent to 1 watt into 8 ohms). ADS recommends using the speaker with amplifiers rated from 20 to 200 watts per channel. The rated frequency response is 40 Hz to 20 kHz ±3 dB.

We placed the S-700’s on stands that located them well away from the room walls and with their tweeters at the recommended height. The averaged frequency response of the left and right speakers, derived from swept sine-wave room-response measurements above about 500 Hz, was spliced to a close-miked measurement of the woofer output below that frequency to form a composite frequency-response curve.

The room response was impressively flat, within ±2 dB from 500 Hz to 20 kHz. The woofer response, which had a broad maximum at 150 Hz, spliced easily to the room curve with about an octave overlap. The resulting composite frequency response was approximately ±4 dB from 55 Hz to 20 kHz. As with any audio installation, the actual frequency response will depend on the room’s geometry, its acoustic treatment, and the placement of the speakers.

Quasi-anechoic MLS frequency-response measurements at 2 meters showed an overall variation of only ±3 dB from 300 Hz to 20 kHz. The tweeter’s horizontal dispersion was typical of 1-inch domes, with the output 45 degrees off the forward axis dropping by less than 5 dB at 10 kHz and by 12 dB at 20 kHz compared with the on-axis readings.

Our frequency-response data correlated very well with test graphs ADS made on the same pair of speakers, which confirmed that the maximum output is in the octave between 100 and 200 Hz, with a 5-dB drop from 200 Hz to between 2 and 3 kHz and a strong top-octave response from 10 to 20 kHz. That degree of similarity between speaker measurements made...
The measured response of the ADS S-700 speaker was impressively flat, and the woofer output was strong, especially in the upper bass.

under totally different conditions is extremely rare in our experience.

The system's sensitivity was 88 dB, as rated. Its minimum impedance was 4.3 ohms at 148 Hz and 20 Hz, the maximum 21 ohms at 58 Hz and 1.3 kHz. Woofer distortion with an input of 3.5 volts (equivalent to a 90-dB SPL output in our sensitivity measurements) was typically about 0.5 percent from 70 Hz to 2 kHz, rising to 2.5 percent at 50 Hz and 10 percent at 20 Hz. The drivers were able to survive peak inputs well in excess of their ratings without damage. At 100 Hz, a single-cycle sine-wave input of 275 watts into the system's 5-ohm impedance at that frequency caused the woofer cone to bottom noisily, though with surprisingly little waveform distortion in its acoustic output. At higher frequencies the amplifier reached its clipping level (400 to 800 watts, depending on frequency) before the speaker exhibited any signs of distress.

We had listened to the speakers for some time before making any measurements, and hearing them left no doubt that they were very good speakers in every respect. Still, it was gratifying to find that our microphone and instruments rendered the same judgment. The ADS S-700 is a deceptively compact speaker whose sound quality gives few hints of its size (or price, for that matter). As unobtrusive visually as it is sonically, this affordably priced speaker should be ideal for stereo music systems or modest home theater installations.

**True Blues.**

NoiseBuster's revolutionary "active" noise technology automatically reduces irritating and unwanted low-frequency background noise in your listening environment, so you can enjoy Muddy Waters, for instance, minus the mud. • Microphones in both NoiseBuster headphone ear cups listen to the incoming offensive noise and feed that information to the electronic controller, where it is analyzed and a precise anti-noise sound wave is generated. When the anti-noise wave meets the offensive noise, the incoming noise is reduced.

- Because active technology requires precise sound generation, NoiseBuster is a superior headphone designed for a truer representation of the audio signal and enhanced clarity. • Comfortable and lightweight, NoiseBuster won't leave you singing the blues.

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The Model KX-580 is the newest member of the Yamaha line of cassette decks. Designed for users who want to minimize cost but still insist on most of the advanced features normally found only on higher-price machines, the KX-580 is a two-head, single-capstan recorder. At the same time, however, its features include not only Dolby B and C noise reduction, but also the more sophisticated Dolby S noise-reduction system. Automatic bias optimization, with an additional user-adjustable bias control, and the Dolby HX Pro system for extending high-frequency headroom are among the deck’s other primary attractions. Also included are bidirectional intro-scan for identifying selections and a Play Trim control for modifying the frequency balance during playback.

Using two heads rather than three shaves approximately $100 from the list price, but it precludes continuous monitoring of the recorded sound and immediate comparison between input and recording. And since a relatively wide head gap is necessary to achieve maximum signal-to-noise ratio (S/N) in recording, while playback of the highest frequencies requires a very narrow head gap, using the same head for both functions is inevitably something of a compromise. In the case of the KX-580, the record/playback head is made of hard permalloy. The single capstan is belt-driven by a DC servo-motor. The reel hubs are turned by a separate DC motor.

The cassette-well door has a very small opening, making viewing the remaining tape on a reel very difficult and checking the label impossible. Removing the door is easy, but unfortunately that still does not provide good access to the heads and capstan for cleaning and demagnetizing. Although not absolutely required, using a long rather than a standard-length cotton swab (or a cassette-shell-based cleaner) will facilitate routine cleaning.

When a cassette is inserted, the KX-580 automatically selects a standard recording equalization and bias setting for the tape type in use. The factory settings work well for most tapes, but the KX-580 is also equipped with an Auto Tape Tuning feature to fine-tune the settings for individual tapes. Different brands and makes of tape often require different settings to achieve their flattest response and lowest distortion, and for critical applications,
Introducing **SoundWorks**

By Henry Kloss.

We'll get right to the point. 
**SoundWorks** - our new amplified speaker system may well be the most exciting product ever designed by Henry Kloss - and the most affordable. Never before has so much high quality, wide-range, natural, “big” sound come from such a small, affordable system. It is ideal for literally hundreds of applications, and thousands of people.

**SoundWorks** consists of a pair of satellite speakers (app. 3 1/2" x 3 1/2" x 3 1/2") and a compact, powered subwoofer cabinet that encloses a 4" woofer, a 3-channel amplifier, equalization and crossover electronics, as well as a control panel.

### The Satellites.

The small satellites are magnetically shielded so they can be used very close to a TV or computer monitor. They contain a remarkable 2" speaker driver with a long-throw/wide-range design that reproduces high and mid frequencies all the way down to 150 Hz, without the need for a “midrange” driver. You can order **SoundWorks** with satellites finished black, or in “computer-beige.” The satellites can be used as is, hung on walls using their back-panel keyhole slot, used with their supplied mini-stands, or they can be attached to a computer monitor with their velcro kit (supplied).

### The Subwoofer.

The subwoofer cabinet (a little bigger than a shoe box: 5" x 8" x 9") reproduces only non-directional bass so it can be placed in out-of-the-way places – on the floor behind your TV set, under your computer desk, or in back of furniture. It contains a 3-channel amplifier that's been precisely tailored to match the speaker drivers. Its control panel includes a stereo mini-jack input for connecting to a computer or a portable CD player, a “set and forget” bass level control, and connecting terminals for the satellite speaker wires. It also has an input for 12 volt, so you can plug **SoundWorks** into the cigarette lighter in your car or boat!

### The Sound.

"Amazing." "Remarkable." "Unbelievable." These are the words used by leading members of the audio press at the unveiling of **SoundWorks**. In terms of frequency range, tonal balance, stereo imaging and overall sound, **SoundWorks** compares very favorably with component music systems costing far more. It just doesn't seem possible that a system so small could produce a sound so “big.” But it does.

### The Applications.

Because of its small size and price, and because of its magnetically shielded satellites, **SoundWorks** is ideal for use as a multimedia speaker with any computer (it sounds far better than any we've heard designed for that use). It fits easily into smaller rooms – like kitchens, dens, dorms and bedrooms. Its 12-volt capabilities make it perfect for boats, campers and cars. And it's small enough to pack in a suitcase, so you can travel with it.

### The Price.

You can buy **SoundWorks** only factory-direct from Cambridge SoundWorks. Because we eliminate expensive middlemen, we can sell **SoundWorks** for only $199. We haven't heard a system for anywhere near its price that we think sounds nearly as good. Period.

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With our 30-day risk-free home audition, you can listen to **SoundWorks** the right way – in your home, with your music. If you aren't happy, return it within 30 days for a full refund. We even reimburse your original UPS ground shipping charges in the continental U.S.

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fine-tuning bias and equalization can substantially improve performance. Unlike most other two-head decks, the KX-580 makes the process easy: You simply press the Auto Tuning button with the deck in recording-pause mode, which initiates a short calibration program. By recording and playing back a short sequence of tones, the KX-580 automatically determines the optimum bias and equalization settings. But the deck also has a manual bias control in case the settings chosen by the Auto Tuning program prove less than ideal or otherwise not to your liking.

To fine-tune playback performance, the KX-580 provides an additional Play Trim control to correct for slightly excessive or deficient high-frequency output. Although the control lacks any calibration to inform the user exactly how much treble is being added or removed, it can be a very useful feature. By varying the amount of treble fed to the Dolby decoders, the Play Trim control can help alleviate the problems often associated with recording on one deck and playing back on a second. All too often, response or azimuth variations between decks cause the Dolby systems to magnify or dull the highs. By adjusting the Play Trim control by ear, you have a shot at restoring the response in such situations to what it ought to be.

Signal levels are shown on a fifteen-segment peak-reading display, which is calibrated from -30 to +8 dB. Unlike some other decks with 0-dB indications set to the old, now unrealistically low standard level of 160 nanowebers (nWb) per meter, the KX-580 uses the more modern and realistic 250-nWb/m reference. This standard insures that the 0-dB indication is at (or very close to) the maximum signal the tape can hold without excessive distortion. Tape position is shown on a four-digit fluorescent counter; it does not indicate elapsed or remaining time, however.

A fold-down panel on the front of the KX-580 covers most of its controls and switches. There are six pushbuttons: counter reset, memory, repeat play, Auto Tape Tuning, and two controlling the Dolby and multiplex-filter (MPX) settings. Although the buttons themselves are easily visible, their identifying labels can be seen only from directly head-on or below. Beneath the buttons are a headphone jack and a row of five knobs for headphone level, bias adjustment, Play Trim, input balance, and recording level. They are all easy to operate and quite clearly marked.

On the right-hand side of the front panel is the usual array of transport controls, a pair of intro-scan buttons, and a search button that doubles as a recording-mute switch. The intro-scan buttons enable the user to preview the first few seconds of each track in either direction from the current position. Simply skipping to the previous or next track is accomplished by pressing the search button and either the fast-forward or rewind button simultaneously.

The KX-580 showed a slight playback-response rolloff at the high end, amounting to approximately -3 dB at 18 kHz, with our calibrated IEC (BASF) Type I (ferric) test tape. Through the rest of the range, the variation was less than ±1 dB. Response with the calibrated Type II (chrome)
Our experience with Dolby Surround Pro Logic sound systems is that the center channel is very important. A significant portion of movie soundtracks is directed to the center channel in a Pro Logic system. It's crucial that the center channel speaker is capable of reproducing the material accurately, with proper volume level and dispersion.

Cambridge SoundWorks manufactures three center channel speakers. All three produce natural, accurate, well-dispersed sound. All three are magnetically shielded so you can place them close to your TV monitor. All three are covered by our 7-year parts & labor warranty and our 30-day money-back guarantee. And because we sell factory-direct, with no expensive middlemen, all three speakers are excellent values.

Model Ten-A.
Model Ten-A is a very small (4 1/2" x 6 1/2" x 3"), two-way acoustic suspension speaker that's ideal for an affordable Pro Logic system. Its small size makes it easy to place near your TV. And its balanced, natural sound will satisfy even critical listeners. It is acoustically identical to the satellite speakers in our Ensemble III system. Factory-direct price, $80.

Center Channel.
Center Channel is a compact, two-way, acoustic suspension speaker that is acoustically identical to the satellite speakers in our New Ensemble® and New Ensemble II speaker systems. Its wide-range, well-dispersed, balanced sound and high power handling capability make it one of the country's best values in a center channel speaker. Factory-direct price, $149.

Center Channel Plus.
Center Channel Plus is an outstanding center channel speaker in that it provides outstanding acoustic performance, while blending in to the "TV environment" in a unique way. Center Channel Plus uses four 3" long-throw woofers and a tweeter that perfectly matches the acoustics of our New Ensemble and New Ensemble II systems. The frequency range of the outer pair of 3" woofers is intentionally tailored to maintain proper dispersion characteristics. Because of its ultra-wide, ultra-low profile, Center Channel Plus is ideal for placement directly on top of your TV. Or, with an optional support stand, you can place it directly beneath your TV. We don't know of any other center channel loudspeaker that offers the combination of high performance and versatility of placement as Center Channel Plus. It is our best selling center channel speaker. Factory-direct price, $219.

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tape was slightly better, not showing as marked a rolloff.

Using our center-line sample cassettes of TDK MA (Type IV, metal), TDK SA (Type II, chrome-equivalent), and TDK AD (Type I, ferric), we calibrated the deck for each tape with its Auto Tape Tuning feature and measured the overall record-playback responses. At the usual -20-dB reference level, response was within ±0.5 from roughly 40 Hz to 18 kHz with the metal tape, to 16 kHz with the chrome-equivalent, and to 14 kHz with the ferric. Dolby tracking error was greater than we like to see, particularly for Dolby C and S. Fortunately, the deviations can be largely corrected with the Play Trim control.

Perhaps because of the KX-580's two-head design, high-frequency response rolled off somewhat earlier at the IEC 0-dB level than we usually see in a deck equipped with Dolby HX Pro—it was down 3 dB at approximately 8, 9, and 13 kHz for the ferric, chrome, and metal tapes, respectively. That performance could be improved by manually adjusting the bias control, but at the expense of response flatness at -20 dB, which is more important except for music that is unusually rich in high-frequency energy.

The KX-580's noise performance was very good and reflected the effectiveness of the Dolby S circuitry. Our S/N measurements ranged from 72 to 75 dB (CCIR/ARM-weighted) using Dolby C and from 74 to 78 dB using Dolby S. And Yamaha's choice of 250-nWb/m for the 0-dB point on the meters takes the guesswork out of realizing that S/N performance. Instead of setting the peaks at some unknown point "in the red," you can record knowing that the 0-dB marking corresponds pretty well to the overload threshold.

Measurements of the KX-580's transport showed low, but not negligible, amounts of wow and flutter and a modest overall speed error. High-speed winding was quick, and the deck's input and output levels were entirely normal.

Apart from the difficulty of reading the labels for the pushbutton switches behind the access panel, the KX-580 was quite well designed and easy to operate. The only other complaint we had about the deck's operation has to do with the slightly odd grouping of the filter controls. Dolby B, C, B+MPX, and C+MPX are selected by one pushbutton and Dolby S and S+MPX by another. The more usual configuration, with Dolby noise reduction selected by one control and the multiplex filter turned on or off by another, seems more logical.

The KX-580 performed quite well in A/B listening tests. Although it exhibited some low-level grunge with metal tapes, perhaps because it was unable to fully erase them before recording, it did very well with the more commonly used ferric and chrome-equivalent tapes.

We were surprised to find that tapes recorded with Dolby C often sounded better than those recorded with Dolby S. Even though the measured S/N was better with Dolby S, the noise that remained manifested itself in the KX-580 as an audible hiss that was not as offensive (but still slightly audible) with Dolby C. Further, although the Dolby S recordings preserved the attacks of notes and the ambience of the hall better than their Dolby C counterparts, the Dolby C recordings often sounded smoother and more natural. Even when we used Play Trim to help alleviate the tracking error, the Dolby S recordings were a bit harsher than either the original sources or the Dolby C versions.

Overall, the KX-580's sound was quite good, especially for the price. As with any analog recordings, there was always some loss, but with Dolby C and a high-quality chrome tape, the KX-580 was able to keep the loss very small. Where quality was lost, it was usually in the overall resolution and the low-level detail, with the tape copy sounding a bit more limited in its dynamics and clarity than the original. And though the KX-580's overall tonal balance and imaging were excellent, it was difficult to set recording levels so that tape hiss was low enough to remain inoffensive while still keeping musical peaks completely undistorted.

In sum, the Yamaha KX-580 is a fine performer in its price class and is certainly well enough equipped with high-performance features to make it a good choice for the value-conscious consumer.
A semi truck landing after a 20 foot fall in Terminator 2. The heavy pounding of feet of a T-Rex in Jurassic Park. These are examples of the ultra-low, ultra-strong bass signals on today's movie soundtracks. Such frequencies are rare in music, and are beyond the capabilities of most speakers designed for music.

The Cambridge SoundWorks powered subwoofers reproduce these bass signals with the power and impact you would experience in movie theaters with the very best sound systems.

**Our Powered Subwoofer.**

Our Powered Subwoofer consists of a heavy duty, 12" long-throw acoustic suspension woofer integrated with a 140 watt amplifier - all in a black, vinyl-clad cabinet. Its control panel includes a bass level control and a four-position electronic crossover frequency selector (to match the subwoofer to your speakers). The Powered Subwoofer reproduces accurate bass to below 30 Hz. You'll hear soundtracks the way they were meant to be heard...better than most theaters. Factory-direct price, $699.

**Our Slave Subwoofer.**

For all-out home theater performance, you can add our optional Slave Subwoofer, which is identical to our Powered Subwoofer, except that it lacks the amplifier and controls. It uses the amplifier and controls built into the Powered Subwoofer. The combination reproduces a below-30 Hz signal cleanly to a sound pressure level of over 100 dB in a 3,000 cubic foot room! That's enough clean, deep bass for the largest home theaters. Factory-direct price, $299.

**Our Powered Subwoofer II.**

Our Powered Subwoofer II uses a heavy duty 8" acoustic suspension woofer in a vinyl-clad cabinet that also holds a 120-watt amplifier. The Powered Subwoofer II's 8" woofer has a very long (3/4") "throw" for powerful, linear bass response. Its amplifier employs electronic equalization to extend uniform output to well below 50 Hz. Bass performance is, in fact, identical to that of our Powered Subwoofer, although total acoustic output is not as suitable for exceptionally large rooms. There is also no provision for connecting a "slave" subwoofer.

The woofer uses a unique heat sink, instead of a dust cap (see illustration). An input gain control and a variable low-pass filter let you match Powered Subwoofer II to any speaker system. Factory-direct price, $399.

**Satisfaction Guaranteed.**

With our 30-day money-back guarantee you can audition these speakers the right way - in your home, listening to your music, with no salesman hovering nearby. If within 30 days you aren't entirely happy, return your system for a full refund. We even reimburse original UPS ground shipping charges in the continental U.S.

"I was taken aback by the ability of your Powered Subwoofer to fill my living room with ultra-low bass...I am extremely impressed with your product and will not hesitate in recommending it to anyone interested in serious bass. I am an extremely happy bass-a-holic." - Guy C., Customer

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Velodyne DP-661 Loudspeaker System

JULIAN HIRSCH • HIRSCH-HOUCK LABORATORIES

For many years Velodyne has been known for its line of powered subwoofers, currently comprising at least eight models. The company has now taken the logical next step with the introduction of full-range speakers that can be used on their own or together with its subwoofers.

The DF-661's model number reflects both its driver complement and its design goal. The DF stands for "distortion-free," while 661 designates a 6-inch woofer, a 6-inch midrange driver, and a 1-inch tweeter.

The DF-661 is obviously a three-way system, though quite unlike any other we have seen. It is compact, but extraordinarily heavy for its size, and handsomely finished. The entire front is covered by an acoustically transparent black cloth grille.

Removing the grille gives you the second clue to this speaker's unusual character (the first comes when you try to pick it up!): The woofer and midrange cones are made of spun aluminum, with no sign of the usual voice-coil dust cap. The voice coils and magnet structures are completely behind the cones, which merely come to a rounded point at their apexes.

Although the woofer and midrange cones are the same size (and have a superficial external resemblance to each other), the drivers are actually quite different. The woofer cone's compliant surround allows the excursion needed to generate low frequencies at a useful level, whereas the midrange cone (which operates between 750 Hz and 5 kHz) has a relatively rigid mounting and does not visibly move. The tweeter, located between the two cone drivers, is a conventional 1-inch aluminum dome protected by a metal screen.

Each cone driver occupies a separate subenclosure. The 700-cubic-inch woofer volume is vented through a port in the back of the cabinet. The midrange driver operates in a 260-cubic-inch sealed volume.

Recessed into the rear panel are two pairs of gold-plated binding posts compatible with dual banana plugs as well as wires and lugs. The posts are normally paralleled by removable jumper straps. Removing the jumpers enables the DF-661 to be biwired or biamplified.

Velodyne stresses the importance of low nonlinear distortion (both harmonic and intermodulation) in a loudspeaker. The well-done, informative owner's manual for the DF-661 devotes a couple of pages to nonlinear distortion and its effects, including a couple of spectrum-analyzer plots for the DF-661 and an unnamed "comparable system." The plots indicate that the DF-661's harmonic spectrum is appreciably lower in level than that of the other speaker.

We installed the speakers with the tweeters and midrange drivers roughly at ear level, several feet from any room walls, both for listening and for our room-response measurements. Initial listening tests demonstrated that the DF-661 was a smooth, clean-sounding system with no obvious colorations and surprisingly good bass considering its rated response, ±2 dB from 60 Hz to 20 kHz.

The room curve (above approximately 300 Hz) sloped down gently to a plateau between 3 and 20 kHz. The close-miked woofer/midrange response showed a similar downward sloping characteristic, although its upper portion could not be measured accurately by this method. Response measurements below 100 Hz were difficult to interpret, since most of the output in that range came from the port, which does not necessarily con-
In-Wall Speakers By Henry Kloss.

Inside.

We Don't Know Of Any Other In-Wall Speakers That Match Their Performance, Durability, Value And Ease Of Installation.

Cambridge SoundWorks manufactures two different in-wall speaker systems designed by Henry Kloss (founder of AR, KLH & Advent). The in-wall version of our Ambiance™ speaker is designed for use indoors. The in-wall version of our all-weather speaker, The Outdoor, is suitable for use on the patio, by the pool...even on boats.

Both systems deliver the wide-range, accurate, natural sound people expect from Cambridge SoundWorks. Both systems are covered by our 7-year parts & labor warranty and our 30-day money-back guarantee. And because we sell only factory-direct, with no expensive middlemen, both systems represent outstanding values.

Ambiance In-Wall Speakers.

We don’t know of any ultra-compact speaker - at any price - better than our Ambiance speakers. (Also available in free-standing cabinets.) Henry Kloss chose a very wide dispersion tweeter for Ambiance In-Wall. It delivers accurate midrange/high-frequency response over a very wide pattern, so you can place the system very high - or very low - on a wall and still hear realistic stereo imaging anywhere in the room. This flexibility can be very important for in-wall installations.

We don’t know of any loudspeaker its size with better bass response than Ambiance In-Wall. Stereo Review magazine said “They easily held their own against substantially larger, more expensive speakers...a lot of good sound at a hard-to-beat price.” Factory-direct price, $329 pr.

And Out.

The Outdoor In-Wall Speakers.

The Outdoor In-Wall speaker is very similar to Ambiance in overall sound, and has the same wide dispersion pattern. It is slightly more efficient, so that it can produce high volume levels with a reasonably powered receiver - which is very appropriate for an outdoor speaker. It has an electro-plated steel grille and a slim-line enclosure with a braced polymer shell. Unlike other in-wall systems, its mounting frame is integrated with a fully sealed enclosure that provides not only weather resistance, but also proper acoustic loading for the speaker drivers. It includes stainless steel hardware and gold-plated five-way binding posts. (Also available in free-standing cabinets.) Factory-direct price, $329 pr.

Easy To Paint.

Easy To Install.

Both our in-wall systems can be used as-is with their supplied off-white finish. Or you can paint them any color. Both systems are also an installer's dream. Because they include sealed enclosures, you don’t have to create an enclosure within your walls. And a plastic “dog leg” locking system makes final installation as simple as turning a screwdriver.

“A Lot Of Good Sound At A Hard-To-Beat-Price.”
Stereo Review

Satisfaction Guaranteed.

With our 30-day money-back guarantee you can audition these speakers the right way - in your home, listening to your music, with no salesman hovering nearby. If within 30 days you aren't entirely happy, return for a full refund. We even reimburse original UPS ground shipping charges in the continental U.S.

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tribute to the overall sound quality in the same way as the output of the woofer cone. In any case, the cone's response was flat within ±3 dB from 85 to 800 Hz but dropped steeply at lower frequencies (where the port output predominated).

The composite response curve sloped down (above the woofer range) by about 5 dB from 2 to 4 kHz and remained very smooth and flat (within ±1 dB) from 4 to 11 kHz. There was a slight 3-dB peak (probably the tweeter resonance) at 13 kHz, and response returned to the average high-frequency level at 20 kHz. Quasi-anechoic MLS ground-plane on-axis response measurements showed a variation of less than ±3 dB from 300 Hz to 20 kHz.

Although the DF-661's rated impedance is 6 ohms, we measured a minimum of 3.2 ohms at 230 Hz, and the impedance remained below 6 ohms from 120 Hz to 7 kHz. A 4-ohm rating would be more realistic. The impedance rose steadily at frequencies below 200 Hz, reaching 20 to 24 ohms in the octave from 20 to 40 Hz. That characteristic suggests that the speaker's response was deliberately rolled off at low frequencies, perhaps to limit woofer excursion, and thus distortion, or to make it more compatible with subwoofers.

The tweeter's horizontal dispersion was typical of 1-inch domes, with the output 45 degrees off-axis diverging from the on-axis response above about 7 kHz. The off-axis response was down (relative to the on-axis response) less than 4 dB at 10 kHz, 7 dB at 15 kHz, and 13 dB at 20 kHz.

Sensitivity was 88 dB sound-pressure level (SPL) at 1 meter, as rated, with a 2.83-volt input of random noise. With an input of 3.56 volts (corresponding to our standard reference output level of 90 dB SPL), the woofer distortion was lower than we have measured from other speakers with a similar driver complement (as well as from many far larger speakers). From a maximum of 10 percent between 20 and 30 Hz, distortion fell smoothly to 1.5 percent at 60 Hz, 1 percent at 70 Hz, and less than 0.5 percent between 90 Hz and 8.3 kHz. The lowest distortion reading, 0.23 percent, was at about 300 Hz.

We also measured the woofer distortion using the FFT spectrum-analysis feature of our Audio Precision System One. With 2.83 volts input at 100 Hz, the major distortion component was a third harmonic at -50 dB (0.3 percent). The second harmonic was at -60 dB (0.1 percent), and all others were at lower levels. Those are impressively low readings; for example, a roughly comparable speaker tested in the same way yielded a third-harmonic reading of about 1 percent and a fourth-harmonic level of 0.15 percent. A similar measurement of the DF-661's midrange distortion revealed only 0.1 percent third harmonic and 0.05 percent second harmonic.

Finally, pulse power tests with single-cycle sine waves at 100 Hz, 1 kHz, and 10 kHz clipped the output of the amplifier before the speaker's output waveform became seriously (audibly) distorted. This test subjected the speaker to momentary inputs of about 700 watts at the higher frequencies and 1,200 watts at 100 Hz.

We listened to the DF-661 speakers both alone and with subwoofers (not Velodynes, as it happened). Their sound was well balanced and unstrained, and clearly covered essentially the full audible frequency range. Used alone, they certainly had no lack of bass, but adding the subwoofers enabled the DF-661 system to create a seamless spectrum of sound from the deepest bass to above most people's hearing range.

Regarding the manufacturer's views on the importance of low speaker distortion, we have some minor reservations. Of course, low distortion is always desirable, but with most speakers we have heard and tested, we doubt that reducing their nonlinear distortions by a factor of several times (corresponding to the differences we measured between the DF-661 and some other good speakers) would make a significant difference in their sound. Nonetheless, the DF-661 certainly substantiates Velodyne's claims of low distortion (allowing for differences in test conditions), and it proved itself, whether for that reason or others, to be a fine, highly listenable system, with or without the assistance of a subwoofer or two.
Music's come a long way since the days people sang about holding hands and moonlit walks. On most car stereos, however, it’s often hard to tell. Which is why we suggest you put in a Pioneer® CD player. Not only will you be able to enjoy your favorite discs on the road, but all of our players provide true four speaker amplification for killer CD sound. So call us at 1-800-Pioneer, ext. 202, for a dealer. Then prepare yourself for some car audio that's really uncensored.
CH-CH-CH-CHANGERS!

BY DANIEL KUMIN
The CD player turned ten in 1992, but we’ll have to wait until 1996 to celebrate the CD changer’s tenth anniversary. Yet since Pioneer introduced the world’s first multidisc player in 1986—a six-disc, magazine-loading model—the popularity of changers has grown dramatically. Home changers now outsell single-disc players by a comfortable margin, and given the riotous variety currently available, the momentum is unlikely to slow anytime soon.

And why should it? Clearly, American music lovers have embraced the changer concept for its extended-play, hands-off convenience. Today there are changers for virtually any system or budget—with disc capacities of five, six, seven, ten, twelve, eighteen, twenty-four, fifty, a hundred, and more. But capacity and convenience are only parts of the changer story; different designs offer different advantages—and disadvantages.

Magazine-type changers that hold six or ten CD’s in a snap-in cartridge were the first multidisc players and are still widely available. But the carousel design, introduced in 1983, almost instantly eclipsed the magazine type in popularity. Carousel changers hold five (or, in a few cases, six) discs in a rotating platter on top of a slide-out drawer; the platter turns until the selected CD is in place above the player’s drive mechanism.

In the past year or two, several other multidisc configurations have emerged. Jumbo changers that held fifty or a hundred CD’s in a snap-in cartridge were the first multidisc players and are still widely available. But the carousel design, introduced in 1983, almost instantly eclipsed the magazine type in popularity. Carousel changers held five (or, in a few cases, six) discs in a rotating platter on top of a slide-out drawer; the platter turns until the selected CD is in place above the player’s drive mechanism.

Magazine changers were created largely as a bridge between car and home audio. The idea was that a six- or ten-disc magazine loaded with your favorite CD’s could be transported between same-brand changers in your car and home systems. And that approach is just as valid today. Extra magazine changers are still widely available. But the carousel design, introduced in 1983, almost instantly eclipsed the magazine type in popularity. Carousel changers hold five (or, in a few cases, six) discs in a rotating platter on top of a slide-out drawer; the platter turns until the selected CD is in place above the player’s drive mechanism.

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Facing page, from top: Nakamichi’s MusicBank MB-1s ($799), a seven-disc changer with an internal six-disc stocking mechanism; the Philips CDC-935 five-disc carousel changer ($300), featuring a program memory for 256 CD’s; Pioneer’s PD-F100 100-disc changer ($715), which has four twenty-five-disc compartments.
Kenwood's DP-M5560 "6+1" changer ($229) combines a six-disc cartridge and a single-play drawer for on-the-fly operation. It features a 1-bit D/A converter, twenty-track programming with display, random play, and a remote control.

The Denon DCM-560 five-disc carousel ($600) lets you swap four discs while the fifth is playing. It has a favorite-track memory for 100 discs, three random-play and five repeat modes, a coaxial digital output, and a remote with a volume control.

The Marantz CC-52 five-disc carousel ($349) lets you swap two discs while the fifth is playing. It features thirty-two-track programming, random and repeat modes, a 1-bit D/A conversion system, an optical digital output, and a multifunction remote control.

With Sony's CDP-CX151 100-disc changer ($999) you can group CD's in ten different categories and program a favorite track sequence for each CD that is automatically recalled whenever it is selected. A jog dial is used to label disc slots and select CD's.
six-disc magazines, for capacities of twelve or eighteen discs. If you have a substantial library of CD magazines, multimagazine changers represent a useful compromise between the single-magazine configuration and the newer high-capacity changers holding fifty to a hundred discs.

The Achilles heel of most magazine changers, of course, is that playing a single disc requires ejecting the cartridge, taking out a disc, and replacing it with the new one—often a rather fussy procedure—and then reloading the magazine. At least two companies offer a way around this annoyance: JVC and Kenwood make “6+1” changers with a loading slot for a six-disc magazine and a single-disc drawer. You can freely mix selections from the magazine and the drawer, and the single-disc tray is convenient for spur-of-the-moment listening.

**Clever Carousels**

For most buyers, however, the carousel format has clearly won out. (Carousel changers have even become standard in many one-brand rack and shelf systems.) Why is the carousel so popular? Compared with a magazine changer, it’s quicker and easier to change loaded discs, and disc-to-disc access times are typically about twice as fast. Another big attraction, a Yamaha innovation now available in various forms from most manufacturers, is being able to swap several discs while another one is playing—ideal for marathon work sessions or all-night parties where the music must play on uninterrupted. Finally, top- or drawer-loading carousel changers (the latter now dominate the rotating ranks) are available in almost every major brand at remarkably reasonable prices. On any weekend in any major metro area, you can probably find a carousel model on sale for around $200.

Two interesting wrinkles come from Technics and Onkyo. Technics recently introduced a $300 carousel that reduces the time between selections on different discs to as little as 3 seconds by storing music in a 4-megabit Memory Reserve. And Onkyo offers several players, ranging in price from $320 to $650, that squeeze a six-disc drawer-loading carousel into the space occupied by five-disc trays in almost all other designs. Onkyo’s six-disc carousels are about an inch larger than most other carousels, but otherwise their layouts are similar to typical five-disc machines. The trick is accom-
plished by crowding the discs a bit closer and leaving less space at the outside edge of the tray.

Although Pioneer originated the six-disc magazine format for both the home and car, and is still its most active booster, the company also offers one of the more unusual carousel variations, the “combi-changer.” The $770 machine has a platter with cutouts for five CD’s or a 12-inch laserdisc—a clever example of single-unit, multimode engineering.

Stocking Stuffers

If you want extended-play capability without having to fool with loading magazines and without giving up the convenience of a single-disc player, there’s Nakamichi’s MusicBank line of single-drawer hybrid players. Employing internal stocking mechanisms that hold six CD’s, the machines look like ordinary single-disc players, but when you place a disc in the tray it disappears into the bowels of the unit, where it joins up to five companions.

And when the stocker is filled, you can play a seventh disc from the tray. There are currently four models in the MusicBank line, ranging in price from $400 to $800.

The main drawback to the stocker design is that it takes longer to load and unload discs than even a magazine changer. But once the discs are loaded, the Nakamichi mechanism is remarkably speedy at changing them. The upside, of course, is that you don’t have to buy and store magazines. Currently, high-end stalwart McIntosh Labs is the only other manufacturer offering a seven-disc stocking changer, though similar mechanisms are used in some shelf systems.

Multidisc Mania

Until someone comes up with a two-tray carousel changer—don’t laugh, it’s bound to happen someday—greater disc capacity requires fresh thinking. Fisher put a new spin on the changer configuration with the Studio 24 CD changer it introduced last year, which boasts an internal carousel that holds twenty-four discs.

Discs are pulled one at a time into the carousel through a vertical opening in the center of the front panel; the directional carousel rotates a selected disc to a drive-and-pickup assembly tucked in a corner, which plucks the disc from its slot—much like a Seeburg jukebox of the early 1960’s.

In addition to standard CD features like random play (from all discs or just one) and repeat (of a track, a disc, all discs, or all discs in a selected category), the Studio 24 has lots of library and recall functions so that you can categorize (and subcategorize) CD’s by genre, artist, mood, and so on. You can also create your own master mix, stringing together up to forty-eight tracks from any of the twenty-four discs and storing the sequence in memory. The Studio 24 changer is eminently affordable at $300 (reduced from its original suggested retail price of $500), and even though it’s 2 or 3 inches taller than most conventional carousel or magazine changers, its front-loading design lets it be placed on a shelf; in fact, Fisher is now packaging the Studio 24 in several of its rack systems.

Several companies, including Magrigal (through its Proceed brand) and Germany’s NSM, have offered 100-disc changers for years, but they have all been big-buck professional designs adapted for home use. Sony trumped the jumbo-changer hand last year with the first reasonably priced 100-disc changer, now available in $1,000 and $1,200 versions. Sony’s system is similar in overall mechanical concept to Fisher’s twenty-four-disc changer, but the larger, top-loading design provides direct access to the carousel, which is visible, not concealed as in the Fisher unit. A see-through pop-up hatch on the top cover opens a twelve-disc-wide port for loading and unloading CD’s.

One clever rotary jog dial with an Enter key at its center (duplicated on the remote control supplied with the $1,200 changer) is used to locate discs and execute playback or programming routines; it also serves as an alphanumeric dial for creating text labels for discs or scrolling through disc listings stored in memory.

Discs can be labeled and selected by title, music genre, artist, and so on, and a playlist can be designated in virtually any way you can imagine; random-play and repeat functions can also address selected disc sets or all discs in the carousel. Of course, as with all memory-based programming routines, the downside is that you must enter the text for each disc label (or labels) by hand. (Unfortunately, there was no provision in the audio-CD standard for text, a major oversight that it’s too late to rectify today.)

JVC joined the jumbo-changer ranks earlier this year with an interesting two-piece player that manages to come in at $1,000. One part is a control box that looks like a conventional single-disc CD player, but without a disc drawer, and the other is a 14-inch-square stacking changer that holds a hundred discs in thin, slide-out carriers; the two components are linked with digital signals via a coaxial cable. The rationale behind the two-piece approach is that you can conceal the actual changer (which effectively becomes a CD library) in a cabinet or other available space.

In addition to letting you assign an eight-character label to each disc (Sony’s 100-disc changer permits thirteen-character labels), the JVC system lets you store a thirty-two-track playlist and up to ten sixteen-disc lineups in memory. JVC’s wrinkle is that you can key in the eight-character album title to select a disc by name rather than the number of its loading slot. The system includes a remote control with an LCD window that displays disc labels.

One big attraction of jumbo changers, of course, is on-line storage. Your CD collection (or a big chunk of it) stays in the player, ready for playback—no more hunting through files or shelves for a particular disc. Sony even makes it possible to daisy-chain several of its 100-disc changers and...
The top-of-the-line Technics SL-PD1000 five-disc carousel changer ($300) reduces the time it takes to switch between selections on different discs to as little as 3 seconds by storing music in a 4-megabit Memory Reserve.

Fisher's Studio 24 changer ($300 with remote) has a juke-box-like carousel that holds twenty-four CD's. Discs are loaded one at a time through the vertical opening and can be classified under preprogrammed labels (Jazz, Rock, etc.) or user-assigned labels.

Yamaha's CDC-845 five-disc carousel ($499) shortens track-switching time in random-play and programmed-play modes by memorizing a disc's contents on the first pass.

JVC's XL-MC100 two-piece, 100-disc changer system ($1,000) has a control unit (below) that resembles a conventional single-disc CD player, but without a disc drawer, and a 14-inch-square stacking changer (right) that holds discs in thin, slide-out carriers; the components are linked digitally via a coaxial cable.
Shopping for a changer is not so very different from shopping for any CD player. Don't be swayed by arcane technological claims or by fancy features that may or may not translate to real-world utility. But changers are a category that not only has a higher percentage of sales, but one that may make sense. Like any continuously used mechanical appliance, a well-made changer is likely to last longer, with less trouble, than a fussy one.

Here are a few considerations to keep in mind:

- **Magazine Changers.**
  
  If you want compatibility with a car changer, make certain that the home changer you select uses a magazine that will fit in your car changer. Not all six-disc magazines are the same, so try before you buy. And if you plan to store lots of discs in magazines, be sure to inquire about the availability and cost of extra magazines.

  Loading (and unloading) discs into the magazine can be the least enjoyable part of owning a magazine changer. Take a few discs to the store and have a go at loading and unloading them before you buy to ensure that it's not too annoying a task.

  One of the biggest differences among magazine changers is in disc-change time. Make sure you select a changer that will fit in your car changer. Not all six-disc magazines are the same, so try before you buy. And if you plan to store lots of discs in magazines, be sure to inquire about the availability and cost of extra magazines.

  Loading (and unloading) discs into the magazine can be the least enjoyable part of owning a magazine changer. Take a few discs to the store and have a go at loading and unloading them before you buy to ensure that it's not too annoying a task.

- **Carousel Changers.**
  
  The question of disc-change time applies here, too, although carousel changers are typically faster than magazine models. Put a few machines through their paces to get a feel for how quickly they go from one disc to another. Also be sure to listen for mechanical noise; some carousels produce alarming ratchety sounds that may grow tiresome after a few days.

  Almost all carousels let you swap from two to four discs while another continues to play. If that seems important to you, check out the swap-count.

  Disc-display modes: With a drawer-loading changer it can be tough to remember what's in there. An easily understood display that graphically shows which disc positions are loaded, and which one's in play, can save time. (Actually, the same goes for magazine changers too.)

- **Jumbo Changers.**
  
  Trying to locate a 2-minute pop-song needle in a 100-CD haystack may prove a stiff challenge. So disc-hunting, cataloging, and playlist features are among the most important attributes of a high-capacity changer. Investigate cataloging and programming routines before settling on a particular model. (Also check out the system supplied to keep track of CD booklets. Most jumbo changers include some sort of notebook to organize them.)

  Another thing to examine, assuming that a jumbo changer will be your only player, is whether you can easily play a lone disc. Sooner or later you'll want to play just one. Does the changer make that easy to do, or is it a hassle?

  Finally, does it fit? Remember that if you install a high-capacity unit in a cabinet or on a shelf, you'll still have to reach the disc-loading dock from time to time. Top-loaders will have to be placed on top of a cabinet or on a slide-out shelf—just make sure you have enough clearance. —D.K.
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Six CD repair kits put to the test

"Perfect Sound Forever" was the advertising slogan Philips used to support the launch of the compact disc format a dozen years ago. The implication, of course, was that compact discs were virtually indestructible. And when CD's were compared with the fragile vinyl records they were destined to replace, the ad slogan seemed plausible enough. No wear from physical contact? No grooves to scratch or gunk up? The high-tech CD format was such a radical departure from the old stylus-in-the-groove approach to music reproduction that it seemed almost too good to be true.

Without question, a CD is a magnificent piece of engineering. A 60-minute digital audio recording comprises over 5 billion bits of information; when you add in information for the CD system's error correction, synchronization, and modulation, some 15 billion bits are needed to store and play the recording. A CD handles all of those bits with ease, while adding many perks such as random access, small size, convenience of use, robustness, and ease of replication. Best of all, the system is an optical one. Playing a CD causes no more wear to the recording than your reading causes to the words printed on this page.

On the other hand, it's a cruel, cruel world out there. The many evils that have always attacked mechanical-groove recordings, such as dust, dirt, and scratches, are all potential dangers to a CD. The danger, in fact, is considerably greater for a digital re-
scoring because of the incredible density of the data. The pit formations that hold the data are amazingly small—much smaller than we large humans can appreciate. One pit is some 700 times smaller than a pin prick. And the spiral pit track would, if uncoiled, stretch for 3½ miles.

Clearly, although it was designed to withstand rigors that would render an LP unlistenable, the CD is far from immune to damage. Severe scratches can cause audible skipping and dropouts—or, worse, make a CD unplayable. Even carefully handled discs accumulate fingerprints, dirt, dust, and scratches that can eventually impede the laser's ability to accurately "read" the data on a disc. In extreme cases, such wear and tear can even confound a player's error-correction system (see "CD: The Inside Story," page 74).

A number of manufacturers offer CD maintenance kits containing, among other things, special solutions designed to clean or protect discs and repair surface scratches. But how well do they work? No solution can make a CD sound better than it did new, of course, but is it possible to bring dirty or damaged discs back up to factory snuff?

To find out, I assembled half a dozen of the best-known kits and evaluated them using a CD "torture test."

**The Candidates**

- **Allsop Model 18613 CD Finishing System ($25).** The kit contains a 2-ounce bottle of polishing fluid (made of natural solvents, apricot oil, lemon-seed oil, and "micro quartz" abrasives), a half-ounce jar of wax (made of vegetable fat and a mixture of coconut and banana oils), and two polishing cloths. The polishing fluid is designed to break down surface contaminants and remove scratches. The wax is primarily protective, creating a hard, antistatic surface that is said to help prevent new scratches. [Coincidentally, as we went to press with this article, Allsop said that it was discontinuing the Model 18613, but the product is probably still available in many stores.—Ed.]

- **Bib A-655 Compact Disc Restorer Polish ($20).** Packaged in a plastic case, the kit comprises a half-ounce spray container of polish and a polishing cloth. The pressurized aerosol canister, a bit larger than a tube of lipstick, is said to contain enough fluid for 600 measured doses (one pump treats one disc). In addition to cleaning and polishing, the fluid is said to remove light scratches and decrease static build-up, which attracts dust.

- **C/D Magic CD 2000 ($10).** Available in a 1-ounce bottle that contains enough fluid for forty applications, CD 2000 is described as an all-in-one formula that "cleans, polishes, protects, and repairs discs." C/D Magic says the solution creates a "molecularly bonded" shield that protects the disc from scratches and contains "space-age particles." A note on the label cautions that the solution contains "aliphatic petroleum distillates" and warns against using heavy pressure on a disc's label side. No polishing cloth is provided.

- **Discwasher CD-2 CD Polish and Scratch Remover System ($13).** The kit comprises a 1-ounce bottle of CD-1 cleaning fluid, a 1-ounce bottle of CD-2 polish and scratch remover, and a jewel box containing six Q-Tip-like swabs and four woven-fabric polishing cloths. Discwasher says that there's enough of each solution for about fifty applications.

- **Memorex CD Repair and Maintenance Kit ($13).** Packaged in a jewel box, the kit includes twelve foil packs, six with an isopropyl-based cleaning solution and six with a polishing solution containing alumina, along with a polishing cloth and four squares of wet sandpaper, each with a different grade of grit. Although each foil pack contains enough solution for two applications, it may be a little messy to save half a pack. The instructions, packed like CD liner notes, describe how to polish a dirty disc and how to select a sandpaper grade according to the severity of scratches.

- **The Last Factory Compact Disc Cleaner/Treatment ($17).** Available in a 1-ounce aerosol pump bottle, the solution is said to repair "most surface abrasions and minor scratches" as well as to remove a variety of residues, including oils, salts, and acids. The company says that single applications clean and protect a CD's surface, and multiple applications address scratches. A polishing cloth is included.

**The Torture Test**

To evaluate these products, I used a series of test pressings of a 1-kHz sine wave that were made at a CD factory. The discs were pressed sequentially from the same batch of polycarbonate under identical molding conditions. That assured as level a playing field as possible since the hardness and reflectivity of the discs were very similar if not identical.

The first part of my evaluation involved the rather undemanding task of using each product simply to clean and lightly buff a test disc that I had abused with greasy fingerprints and a little house dust. All of the solutions did a good job of removing dust, dirt, and fingerprints, and they can clearly be recommended for that purpose. Being of the "If it ain't broke, don't fix it" school of thought, however, I don't recommend cleaning your entire disc collection just for the sake of cleaning it. Not only is it very time consuming, but I'm not convinced that cleaning a CD without good cause (read: filthy) does any good. And in the back of my mind, I worry about the possibility that a cleaning solution could be absorbed by a disc's polycarbonate and eventually cause an unfortunate chemical reaction. Still, if you're so motivated, these products are all fine cleaners.

Next I applied a very light scratch to each of the six test pressings, running it perpendicular to the spiral pit track.
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Magic has just the right abrasive—gritty enough to neutralize a fairly nasty scratch without inflicting further damage.

Discwasher’s mildly abrasive brown polishing compound succeeded in removing most of the scratches, but only after a lot of buffing. While the most severe scratches remained visible, the disc played without skipping. The Memorex kit is the most serious of the six tested. As any carpenter or gemstone polisher knows, the most efficient way to smooth a material is to start with a hard abrasive, then gradually work your way down to mild abrasives. While even a mild abrasive will eventually do the job (the Grand Canyon example again), it’s faster to start with abrasives that attack the material’s roughness directly, then work to remove the scratches you’ve added. Because my test scratches were relatively light, I started with Memorex’s least abrasive sandpaper (#3). I quickly rubbed away even the deepest portions of the scratches, but the surrounding areas became badly scuffed. The marks were easily removed by buffing the area with the white polishing cream and a cloth. When I finished, the surface was smooth and shiny and the disc played perfectly.

Like the Bib polish, the Last Factory’s clear fluid appeared to be virtually nonabrasive. I succeeded in removing some of the shallow portions of the scratches, but only after considerable effort and multiple applications; the medium-level and deeper portions remained. The disc barely played, with considerable skipping.

The next stage of my evaluation was an acid test. I took six new test pressings and applied a series of closely spaced, deep, and wide radial scratches to each one. Of course, the gouged portions of the discs were completely unplayable. Alloting 10 minutes for each repair, I went to work using the six repair kits. After laboring over each scratch, I achieved results that were similar to those of my previous scratch-removal efforts. The Memorex kit’s #1 (“mildly coarse”) sandpaper, followed up with #2, #3, and the polishing compound, removed nearly all traces of the scratches, and the disc was again playable. (The kit also contains a coarse “X” grade of sandpaper intended for use only with very deep scratches.) C/D Magic’s polishing compound did a good job of reducing the deep scratches, but its less abrasive solution was unable to remove all traces of the scratches in the allotted time; still, the disc was playable without skipping. The Allsop and Discwasher compounds left the deep scratches, and the Bib and Last Factory solutions had little effect on these gouges, so those four discs remained unplayable.

Finally, out of curiosity, I attacked one CD with a vengeance, cutting very deep scratches into its playing surface. Then I went to work using the Memorex kit to see if I could restore the disc to playable condition. After much sanding, I succeeded in removing the scratches, but the disc still would not play. Apparently too much of the disc substrate had been removed, and the laser could not focus properly in the depth that remained. In other words, there’s a limit to the extent of the damage that can be repaired.

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CD: THE INSIDE STORY

Every CD starts out as a piece of transparent polycarbonate plastic (the same stuff used to make football helmets and bulletproof windsheilds). Digital bits of data representing the music are then molded on the top (label side) of the disc in the form of microscopic pits. The pitted surface is coated with metal (usually aluminum) that reflects the laser beam from the CD player's optical pickup, which sees the data pits as bumps because it's aimed toward the bottom (or playing) side of the disc. Next, an acrylic resin, cured by ultraviolet light, is applied to the metal layer to protect it. Finally, a label is printed on the acrylic layer.

What most people don't realize is that the metal and acrylic layers covering the data surface are extremely thin, making the label side of the disc far more vulnerable to damage than the playing side. A scratch on the label side can irrevocably damage the data. In fact, none of the CD maintenance kits we evaluated claim to be able to repair damage to a disc's label side—clearly an impossible task.

The playing side is less vulnerable to serious damage for two reasons: 1) It's protected by a relatively thick layer of plastic, and 2) when the laser spot hits the surface it's 800 micrometers wide but focuses down to a tiny fraction of that size (about 1.7 micrometers) by the time it reaches the data surface. Therefore, the effects of scratches or other obstructions on the playing surface are reduced along with the laser beam. In general, a CD player's error-correction system can handle small obstructions, like dust and dirt less than 0.02 inch in diameter, without audible consequence.

When it comes to scratches, some are more perilous than others. For example, a spiral or circular scratch that runs along the CD's pit track may obstruct a number of consecutive bits of music information (as well as the bits used to correct for errors), whereas a radial scratch that goes across the disc (center to edge) will affect only a small amount of data in each revolution, making it easier to correct.

Beyond individual scratches, an accumulation of trivial obstructions—dirt, dust, fingerprints, you name it—can wreak havoc by overloading a CD player's error-correction system (its legal limit is 220 errors per second). When that happens, the player will resort to error concealment, using nearby undamaged data to create an audio patch that approximates the missing data, or, in worse conditions, briefly muting the audio output. In the case of deep gouges and other major surface obstructions, the laser beam will likely lose the track entirely, which causes audible skipping. When any of these problems begin to appear, you know it's time to clean—or possibly repair—the disc.

The Bottom Line

As the CD torture tests demonstrated, each of the six repair kits has strengths and weaknesses, and they are best suited to different tasks. The Bib and Last Factory kits are better polishers than scratch removers. They do a good job of keeping discs clean and free of fingerprints, but they can repair only the mildest of scratches. The All-sop and Discwasher kits are also good for cleaning, but their slightly more abrasive polishing compounds are suitable for fixing somewhat deeper scratches. C/D Magic's CD 2000 polishing compound is very versatile: gritty enough to tackle tough scratches, yet mild enough to avoid adding new scratches to the surface. If you want a one-step product to buff out moderate scratches, it's the best bet.

But if you want to try to revive a disc that is badly scratched, the Memorex kit holds out the best hope. Its four grades of sandpaper and polishing cream let you quickly remove almost any scratch—even fairly deep ones—and then return the damaged area to its original shiny condition. A word of caution: Sanding should be done with extreme care and patience, or you may worsen the condition of the disc you're attempting to fix!

After all is said and done, I'm inclined to treat a CD repair kit as I would an automotive repair kit—for emergency use only. And what's the point of carrying around an emergency kit with wrenches that fit only half the bolts on your car? I'd put the Memo-rex kit on my shelf simply because it can repair the kinds of CD atrocities most of us are likely to come across—and it works quickly to boot. Of course, whether it's your car or your CD collection, damage prevention is always better than repair. So think twice the next time you're tempted to use a disc as a beer coaster.
WHERE DOES THE TWEETER OF A HIGH FIDELITY LOUDSPEAKER BELONG?

This question may confuse those who believe that the measure of a loudspeaker is the number of its drivers. It will also elude those who have never bothered to question conventional driver placement, which always separates the woofer from the tweeter.

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Vivid 3D products are easy to install with your existing audio system. You can use Vivid 3D products to enhance virtually any audio configuration—from a portable CD player with only 2 speakers to a full 5 speaker surround sound system. In addition, Vivid 3D products are fully compatible with surround sound technologies, such as Dolby Pro Logic®.

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*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. Vivid 3D systems incorporate SRS (●) technology which won the "Ultimate" award from Game Player magazine in July 1993. © 1994 NuReality. All rights reserved. SRS (●) is a registered trademark of SRS Labs. All product names are trademarks or registered trademarks of their respective holders. $10.

CIRCLE NO. 31 ON READER SERVICE CARD
You can put together a rudimentary "home theater" by just hooking up the audio outputs of a stereo VCR to a conventional two-speaker audio system, but even with a large-screen TV you won't get the full theatrical impact that even such a basic setup is capable of if you don't place your speakers carefully. And moving up to a full-blown home theater system with a Dolby Pro Logic A/V receiver, two surround speakers, a subwoofer or two, and a center front speaker won't necessarily make much difference if you still haven't figured out where to put the speakers.

I'll offer some specific placement suggestions.

Properly locating home theater speakers can make all the difference.

By David Ranada
An acoustically transparent screen hides the front speakers in a theater.
(Key: L = left, C = center, R = right, S = surrounds, W = subwoofer.)

This speaker layout, with a 60-degree left/right spread, has been recommended for use in surround-sound tests for high-definition TV (HDTV).

Figure 1

Figure 2

An acoustically transparent screen hides the front speakers in a theater.
(Key: L = left, C = center, R = right, S = surrounds, W = subwoofer.)

This speaker layout, with a 60-degree left/right spread, has been recommended for use in surround-sound tests for high-definition TV (HDTV).
Try to get the center-channel speaker to line up vertically with the front left and right speakers and all three to be close to ear height when you’re seated.

route for reasons of space or decor, first try the less expensive alternative of dispensing with a center speaker altogether and switching your surround decoder for “phantom” center-channel operation. Phantom-center imaging is good only for a small listening area directly in front of the screen, but it’s better than that provided by dual “center” speakers. A single center speaker is still best.

placing the left and right front speakers is more problematic, for unless you have a very large front-projection video system, the screen width will always be substantially smaller than the distance between the left and right speakers, unlike the setup in a movie theater. There’s no way around this fundamental limitation of home theater without using a large-screen projection system.

But you do not have to stick with the traditional stereo angle of 60 degrees between the listener and the left and right front speakers. First, the traditional 60-degree angle is merely that, traditional. There is no combination of psychoacoustical and engineering reasons that dictates a 60-degree left-right spread. But there is psychoacoustical evidence that works in favor of the small-screen viewer. A narrower spread of only 46 degrees (23 degrees to each side) produces a minimum of “interaural crosscorrelation” for a listener at the prime location. Translation: At that angle the speakers are less likely to be heard as sound sources themselves, and the resulting sonic image is more likely to be determined by the qualities of the recording. That is precisely what you want in home theater: a narrower left-right spread to match the picture better, yet one wide enough to provide good recording-determined imaging for both movie soundtracks and music. One speaker maker (NHT) believes so strongly in this approach that many of its stereo speakers are mirror-image pairs whose front panels are already angled for a 46-degree spread.

There’s no need to be obsessively precise with any of these angles, but for the record, and as an aid to experimentation, you’ll get a 60-degree spread when the left and right speakers make an equal-sided triangle with the listening position. For a 46-degree spread, space the left and right speakers 9 3/8 inches apart for every foot either one of them is away from the prime listening position. (And you thought high-school trigonometry would never be useful!)

You can also try a few often-ignored front-channel refinements. Recall that the front speakers in a movie theater are usually located about halfway up the back of the screen. Unless you,

A center speaker

should go as close as possible to the middle of the video screen.

The surrounds can be positioned farther away from you than the front speakers. Side placement is recommended.
too, have a front-projection system with an acoustically transparent screen (a big-bucks proposition), if you try to do that at home you'll end up with the center speaker smack dab in the middle of your picture. Still, you should strive to make the distance from the center of your picture. Still, you should strive to make the distance from the center speaker forward or back relative to the left and right speakers. But whether you get any improvements in tonal matching and image precision and accuracy depends on the particular speakers involved and the furniture near them (including the TV screen's sound-reflecting surface).

The Surrounds

No other part of surround-sound speaker setup is as confusing or as misunderstood as the placement of surround speakers. The misunderstandings extend to the controls, connections, and instruction manuals of most A/V receivers, which insist on calling the surrounds "rear" speakers. Sometimes the manuals even have speaker-placement diagrams showing the surround speakers in back of the listening position. But in many homes, putting speakers behind the listener is not practical. Fortunately, they shouldn't go there anyway.

In a movie theater, the main purpose of surround speakers is to provide an enveloping sonic environment that helps the listener "place" himself in the location shown on screen—the audio equivalent of a cinematic establishing shot. That's why there are surround speakers around three sides of the auditorium. At home, placing two surround speakers to the rear may heighten the effect of an occasional flyby, but with environmental background sounds, which often run more or less continuously, you'll end up with sonic holes on the sides—the sound from the speakers in the rear won't connect seamlessly with the sound from the three in front.

The solution is to place the surround speakers more to the sides than the rear, as in Figure 2. Manufacturers of dipole-radiating surrounds even recommend side placement directly on a line with listeners, so that they are in the null of the dipole radiation pattern. While it may be considered an ideal, you do not have to place the surrounds at the same distance from your listening position as the front speakers. For various reasons, placing surrounds at a reasonably greater distance (Figures 4 and 5) can even be advantageous. Furthermore, if your A/V equipment allows you to adjust each surround speaker's level separately, the surrounds don't even have to be at precisely the same distance or angle from the prime listening position (Figure 5). What you must do in any case is to carefully set the surround-speaker balances using the test tone required in all Dolby Pro Logic decoders, and you must reset the balances every time you change or move the surrounds.

If you still aren't getting good results out of your surrounds on program material that you know has substantial surround-channel content (not all movies do), you might want to experiment with less conventional layouts than those in Figures 4 and 5. Surround speakers can be mounted high up on the side walls or even on the ceiling, for example, taking to an extreme the general guideline that they should be at least as high off the floor as your standing ear height. You can try aiming the surrounds at various angles away from the main listening position. I have even heard of cases in which good sonic envelopment resulted from putting surround speakers on the floor at the sides and aiming them upward. Experiment.

Subwoofers

It's rare that you can plunk down a subwoofer at random and have it operate at its best. Usually you have to experiment with placement and level adj-

Figure 5

A diagonal speaker arrangement can solve many layout problems and still provide excellent surround sound.
justment (preferably aided by some measuring equipment). That can get tiresome, but there are some basic guidelines to start your experiments off in the right direction. The most important rule of thumb in subwoofer placement is that you can generally ignore imaging considerations, because a subwoofer's crossover frequency is normally below 100 Hz or so. In fact, some asymmetry in subwoofer placement is almost always desirable.

Unless your subwoofer's manufacturer specifically recommends against it, a good location to start your placement experimentation is in or very close to a firm corner that itself is close to either your listening position or the front speakers. By "firm" I mean a corner whose walls don't flex much and that is not close to a large opening in the room, such as a hallway or open door.

A corner location for a subwoofer is something of a theoretical ideal, since it will activate the most significant room resonances equally, which is usually better than the haphazard activation of only a few significant resonances that you'll get with any other location. Corner placement also automatically boosts low-frequency output, so unless you pay careful attention to the level of the subwoofer output, you may get too much of a good thing (a common error in systems not adjusted with the aid of measuring equipment). For the L-shaped room in Figure 6, and assuming that the main listening area is in the upper left side of the room, I'd try Positions 1 and 2 first and, because of the doorway, Positions 5 and 6 last.

In order to avoid sonic nulls, don't put a subwoofer precisely midway between parallel walls. If you were using the right side of the room in Figure 6 as the main listening area, I'd recommend trying the corners first and Position 4 last. If you are lucky enough to have more than one subwoofer, always a good upgrade, you may want to try placing one of them away from a corner. In that case asymmetric placement in the room could help by canceling resonances and nulls (Position 3), although taking measurements is unfortunately the only efficient way to assess any improvements.

Finally, here are two general-purpose subwoofer hints. First, take advantage of the reciprocity principle: If you exactly swap the locations of a subwoofer and a listener in a room, he won't be able to hear a change, especially at low frequencies. To take advantage of that principle in deciding on a final subwoofer location, place the subwoofer and either the left or right front speaker at your listening position, preferably with the subwoofer at seated ear height. Then aim the front speaker at each of your various prospective woofer locations in turn while playing some well-recorded music, crawl to each woofer location with your head near the floor, and listen for the bass balance. That may look crazy, but, hey, you're an audiophile in search of peak performance. Besides, it's easier than hauling a typical subwoofer around the room.

Second and last, remember that you can obtain significant changes in bass performance by relatively small (2- or 3-foot) adjustments in your listening position. If you are listening close to a wall and getting too much bass, for instance, move your chair farther out into the room (or pull the subwoofer away from its closest wall).

These woofer-placement guidelines are only the basics of a fascinating and complex subject, which we'll cover in more detail in a future issue. In the meantime, experiment—and don't be afraid to move the furniture, too!

Try different subwoofer placements and level settings. Experiment.
Most speakers that call themselves multi-media don’t even deserve to be called speakers; while the hi-fi speakers worthy of their name won’t function or even fit in most surround sound, home theater, computer, MIDI or mini system applications. Celestion solves this dilemma elegantly with the Style Series, packaging their 70 years of loudspeaker experience in magnetically shielded, weather-resistant enclosures with universal mounting systems.

Where in your home will your new Style speakers sound the best? Wherever you want.
We had to dig deeper than usual to find the gems at the 1994 Summer Consumer Electronics Show held in Chicago in late June, the last of the traditional summer shows that have been held every year since 1967. The Electronic Industries Association (EIA) is replacing the show with CES Interactive, a multimedia/game-oriented tradefest scheduled for Philadelphia next May. (Winter CES will remain the preeminent showcase for new audio and video products.) There may still be a place in the Windy City for a small A/V confab, however. As we went to press, Thiel and Conrad-Johnson were close to sealing a deal with the EIA for it to host a smaller A/V show in Chicago next June.

As some 37,000 manufacturers, distributors, retailers, and journalists bid a nostalgic farewell to Summer CES, they also welcomed the nation’s first high-power direct-broadcast satellite (DBS) service. The Digital Satellite System (DSS), a $1 billion venture launched by RCA, the DirecTV subsidiary of GM Hughes Electronics Corp., and Hubbard Broadcasting, entered the first phase of its national rollout during the show. Showgoers flocked to RCA’s booth for a firsthand look at the programming delivered via the 18-inch satellite dish and receiver.

Another highlight with historical significance was the announcement by International Jensen that its Special Audio Group, which includes NHT, will preside over the revival of the forty-year-old Acoustic Research brand. The first three models in a new back-to-basics AR line of six bookshelf speakers, ranging in price from $200 to $1,200 a pair, were slated to hit store shelves in September. Elsewhere in speakers, Cerwin-Vega previewed its six-piece System 8 home theater package ($1,480), featuring a 12-inch dual-voice-coil subwoofer. Recoton and Chase Technologies introduced inexpensive 900-MHz wireless systems, with Recoton’s $430 System W450 four-piece home theater package the standout. In the oddball department, Spheric Audio made a splash with its $700 Krystol System II speaker (inset) featuring a glass Uniglobe with a tweeter inside.

Marantz introduced the one-piece EC-500 Dolby Pro Logic preamp-tuner with a built-in CD player ($1,099), and Carver hinted at plans for lower-price versions of its impedance-independent Lightstar amplifier. Carver’s founder, Bob Carver, who recently left his namesake firm to form another company (as yet unnamed), unveiled the $2,000 Sunfire amp, rated to deliver 2,400 watts into 1 ohm. And Sony previewed a 360-degree surround headphone system.

On the A/V scene, the New York City-based Captain of America company conducted the first U.S. demos of the “high-definition” W-VHS videotape system that JVC sells in Japan. The deck, available through Captain for $10,000, features an HDTV recording and playback mode and is said to play and record VHS and Super VHS tapes with enhanced quality. Proton unveiled its first 16:9 widescreen TV, the 34-inch DT-3660 ($5,000). Recoton showed the BullsEye amplified TV antenna ($130), which is said to improve reception of signals 150 miles away.

In the frenzied multimedia annex, amid nonstop videogame play and demonstrations of virtual-reality headsets, Digital Interactive Systems Corp. unveiled a prototype TV-top optical-disc player that can handle interactive CD-ROM discs as well as Photo CD’s, Video CD’s, and audio CD’s, while Philips trumpeted its new $299 CD-1 player.

Now turn the page for a peek at some of the gems we uncovered. —Bob Ankosko
Showstoppers

Norris Communications' Flashback personal voice recorder ($250) stores audio on a removable, reusable solid-state SoundClip. The two-button device offers standard play and record functions plus insert editing and variable playback speed. Rated bandwidth is 300 Hz to 4 kHz. The Flashback comes with two AAA batteries and a 30-minute SoundClip ($70 separately). A 60-minute clip is due in November. The company is working on a solid-state CD-quality audio recorder.

Born again: The top speaker from the revived Acoustic Research is the 25-inch-tall Modest 303 ($1,200 a pair), a three-way acoustic-suspension system that remains true to AR's original goal of combining accuracy and value. Finish is cherry veneer or black laminate (walnut prototype shown).

Packard Bell's forward-looking Spectria system is an Intel 486-based multimedia PC and home entertainment center in one. Standard features include a 16-bit sound card, speakers, a dual-speed CD-ROM drive, a fax modem, a 14-inch S-VGA monitor, and twenty-seven pre-installed software titles. Plug-in options include a radio, a TV tuner, and an answering system. Price: $1,599 to $2,599, depending on options.

Cut of this world? Fried's new MARS (McShane Ambience Recovery System) passive wiring scheme is used in the satellite sections shown atop the subwoofer columns of its flagship four-piece Valhalla speaker system ($5,490). To enhance realism, MARS cross feeds L-R and R-L ambience information between the dual-voice-coil satellite woofers. Total height is 49½ inches.
Cerwin-Vega's ground-pounding Stroker Series car subwoofers, available in 12-, 15-, and 18-inch sizes, all handle 1,000 watts of brute power and sport a patented dual-spider suspension system that can tolerate large excursions. Prices are $750, $800, and $850, respectively, for the three sizes.

Elegant simplicity is the hallmark of Meridian's Model 562V A/V controller (top, $1,395), featuring eight analog and five digital audio inputs and eight video inputs, and its Model 565 eight-channel Dolby Pro Logic-based surround processor ($3,595).

True story: Definitive Technology's Powerfield 1800 subwoofer ($1,599), with an 18-inch woofer, a 500-watt amp, and an adjustable crossover, shook the Hilton hotel's concrete floor. Guess its 13-Hz rating is for real.

A true heavyweight: Thiel's 55-inch-tall CS7 speaker ($8,000 a pair) deploys four metal-cone drivers, including a 3-inch midrange with a coaxially mounted tweeter, in a sloping baffle made of cast concrete (each speaker weighs 180 pounds). All the drivers use a new short-coil/long-gap design said to greatly reduce distortion. Standard wood finishes are walnut and black.
NEW RELEASE UCCD 510
Hailed as their greatest sonic effort, this third Queen title on UltraDisc II is again transferred from the group's personal masters. Includes Crazy Little Thing Called Love, Another One Bites The Dust, and Play The Game.

NATURE'S ENCORE
Mobile Fidelity Sound Lab is dedicated to making music sound its absolute best. Our proprietary mastering techniques advance one step further with the cutting-edge technology of the GAIN System™. We work from original master tapes—with strict attention to detail—because we love the music as much as you do. Hear the difference with UltraDisc II™. The original limited edition, 24-karat gold audiophile CD.
Neil Young's new album, "Sleeps with Angels," is one of the best he's ever made with his on-again, off-again collaborators in the band Crazy Horse. It is also one of the most unusual. In the past, Young has generally turned to the band when he wanted to blast full-bore, electric-guitar rock-and-roll, but for his softer, more reflective stuff he has more often worked with other musicians. Not so this time; there are acoustic instruments all over the place—folk guitars, rinky-tink pianos that sound like what you hear in old Western movie saloons, flutes (!)—and it isn't until the sixth song, the 14-minute epic Change Your Mind, that anything like Young's signature electric squeal comes to the fore.

Sonically, "Sleeps with Angels" is something of a departure as well, recorded (I assume deliberately) so that it sounds as if the music's being picked up by one or two microphones at opposite ends of a long, empty room while the band jams unawares. I guarantee you haven't heard such unconventional instrumental balances (distantly miked drums, rhythm guitar way out front of the lead) since, oh, the last time you used that little shirt-pocket portable to tape your favorite local garage band playing live at the VFW hall.

That kind of studied primitivism disguises a canny sophistication, of course, and (predictably enough) what the album does have in common with Young and Crazy Horse's previous work is extremely interesting songs and a consistently vivid atmosphere. Here, for example, in meditations on urban decay like Driveby (as in shooting) and Safeway Cart, the guitars let you practically feel the miasma of heat and paranoia rising from the Los Angeles sidewalks. On the title song, which most will read as a farewell to Nirvana's Kurt Cobain, Young manages a tone of rueful regret that miraculously skirts the mawkish while the band makes delicate-yet-grinding industrial noises. And in Piece of Crap he revs up the tempo for a funny, angry, punk-style indictment of rampant consumerism. The rest of the album maintains an almost magisterial mid-tempo calm. If music can be both soothing...
and abrasive, "Sleeps with Angels" is it. Ho hum. Another year, another brilliant Neil Young album. 

Steve Simels

NEIL YOUNG AND CRAZY HORSE
Sleeps with Angels
My Heart; Prime of Life; Driveby; Sleeps with Angels; Change Your Mind; Blue Eden; Safeway Cart; Train of Love; Trans Am; Piece of Crap; A Dream That Can Last
REPRISE 45749 (64 min)

Vivid Bartok from Hugh Wolff

As with Stravinsky's The Firebird, Bartok's complete score for The Miraculous Mandarin has been favored over the popular concert suite by several conductors lately, but the Mandarin suite (simply the first two-thirds of the ballet) can be quite effective in its own right. It is more than that in Hugh Wolff's vivid performance on a new all-Bartok Teldec CD. He makes you feel he had to conduct this music, not just to make a splash, but because he believes in it, cares about it, and understands it—and those refreshingly old-fashioned notions give the music's excitement and color vastly more impact than they could ever have in readings that settle for those qualities alone.

Throughout the well-filled disc, in fact, Wolff and the Philharmonia Orchestra seem to be responding with exceptional sympathy to each other and to Bartok. Their account of the elusive Deux Images, one of the most poetically evocative yet recorded, is probably the most treasurable part of this collection: luminous, uncontrived, stunning in the clarity of contrasts and relationships between the two pieces. Wolff allows the Hungarian flavor of the second, the Danse Villageoise, to come through uncoaxed, refusing to let it even hint at mere caricature.

The disc concludes with the Concerto for Orchestra. Wolff's exceptional understanding of the music's essential character is apparent here, too, together with a rare gift for engaging both the orchestra and the listener with the remarkable freshness still to be found in such familiar material without distorting the features that make it so familiar. While this recording does not displace the legendary Reiner/Chicago version on RCA Victor as my first choice, it is a surprisingly strong runner-up, and the outstanding appeal of the other two parts of Wolff's program may be enough to justify duplicating the concerto. By no means incidentally, the Teldec CD's sound is absolutely first-rate and well tailored to the requirements of the individual works.

Richard Freed

BARTOK:
Miraculous Mandarin Suite; Deux Images; Concerto for Orchestra
Philharmonia Orchestra. Wolff cond.
TELDEC 76350 (76 min)

Iain Matthews on The Dark Side

If you've never quite swallowed the idea that the tie between English folk and American roots music is sturdier than a telephone cable, Iain Matthews is the living proof that it is. A London expatriate and founding member of Fairport Convention in the Sixties and Matthews' Southern Comfort in the Seventies, the singer-songwriter turned record-company executive in the Eighties. But five years ago he moved to Austin, Texas, and just last year he released "Skeleton Keys," his first solo album in more than a decade.

Matthews's music nowadays is rather what you might expect—well-crafted, English-Texas folk-rock. But what you might not expect is how personal his new album, "The Dark Ride," is, from Tigers Will Survive (Part II: Darcy's Song), a ballad to a grown-up child from a long-absent father, to For Better or Worse, a harrowing song he wrote for his wife, a rape survivor. Along the way there are less intense offerings—about a couple that fell in love long ago at a Texas dance hall (Ballad of Gruene Hall), and about the unspoken bonds between married couples (Rooted to the Spot). But whether Matthews is exploring an acoustic story-
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song ballad or dishing up a lively blues shuffle, he never takes a song for granted. Instead, he stokes it with lots of little charms and delights, from the harmony vocals of Sara Hickman and Kris McKay (Morning Glory and Breath of Life) to a lyric about driving and driving “until there was no center stripe” (I Drove).

Sometimes, Matthews’s images and lyrics are as confusing as they are illuminating—ex-colleague Richard Thompson he’s not—but his fetching tenor rarely fails to evoke an emotional response. To say that he also has a large capacity for melancholy is to warn you in advance, but go ahead and listen anyway—well-placed catharsis can sometimes be a blessing.

Alanna Nash

IAIN MATTHEWS
The Dark Ride
I Drove; Girl with the Clouds in Her Eyes; Ballad of Grune Hall; Tigers Will Survive (Part II; Davey’s Song); The Breath of Life; Save Her Love; For Better or Worse; Davey’s Song; Morning Glory; In London; This Is It; Rooted to Love; For Better or Worse; Davey’s Stung; II, Darcy’s Song; The Breath of Life; Save Her

Mahler’s “Das Lied”
From Solti and Co.

Georg Solti’s new live recording of Mahler’s Das Lied von der Erde (The Song of the Earth) with Amsterdam’s Royal Concertgebouw Orchestra is a long way interpretively from his 1972 recording with the Chicago Symphony, which only skimmed the surface. Thanks to the responsiveness of the Dutch orchestra, steeped in the Mahler tradition, and the secure vocal skills of mezzo-soprano Marjana Lipovsek and tenor Thomas Moser, Solti penetrates to the very heart of Mahler’s next-to-last completed masterpiece in all its bitterness, desolation, and final transcendence. The spacious yet warm acoustic of the Concertgebouw hall only enhances the listening experience.

It gave me not just pleasure but goosebump thrills right at the start to hear Moser negotiate the heroically demanding Das Trinklied vom Jammer der Erde (Drinking Song of Earthly Woe). The anger and bitterness of the words can almost be tasted in his plangent rendition of “But thou, O man, how long wilt thou live? / Not one hundred years may’st thou enjoy thyself with all the rotting trifles of this earth!”

In the opening measures of Der Einsame im Herbst (Autumn Loneliness), Lipovsek’s vibrato-free delivery conveys a truly palpable sense of desolation. Not since the early recordings with Kerstin Thorborg and Kathleen Ferrier, both conducted by Bruno Walter, who presided over Das Lied’s world premiere, have I heard vocal coloration used so tellingly in this music. Tenor and orchestra interweave an exquisite tonal tracery in the comparatively lightheaded Von der Jugend (Of Youth). In Von der Schönheit (Of Beauty), its larger-scale counterpart for female voice, Lipovsek movingly communicates both the idyllic aspects of the music and the hustle and bustle of the central episode with its “patter song” set in a cruelly low range. I have never heard Von der Schönheit sung better.

The bitterness of the opening song, now pitched at a level near delirium, returns in Der Trunkene im Frühlings (The Drunkard in Springtime), which Moser hurds forth magnificently. As for the nearly half-hour-long Abschied (Farewell) that concludes the work, no words of mine can adequately convey its heart rending pathos. Marjana Lipovsek’s performance, in perfect oneness with the Royal Concertgebouw under Solti’s direction, says it all. There are currently almost two dozen recordings of Das Lied von der Erde on compact disc. I would unhesitatingly rank this one among the top versions.

DAVID HALL

MAHLER:
Das Lied von der Erde
Lipovsek, Moser; Royal Concertgebouw, Solti cond.
LONDON 440 314 (63 min)

Solti getting to the heart of Mahler

P O P U L A R

• THE CHOCOLATE WATCHBAND:
No Way Out. SUNDAZED 6023.
The Inner Mystique. SUNDAZED 6024.
One Step Beyond. SUNDAZED 6025.

From 1966 and 1967, the long out-of-print original albums by the garage-punk-psychedelic outfit that achieved legendary status after a star turn in the all-time hippie exploitation flick, Riot on Sunset Strip. Each album features unreleased bonus takes and obscure singles.

• DUKE ELLINGTON
AND HIS ORCHESTRA:
Live at Newport, 1958.
COLUMBIA/LEGACY 53584. Twenty-one live tracks taken from the opening night (July 3) of the famous 1958 Newport Jazz Festival, with several heretofore unreleased numbers, including two with Mahalia Jackson.

• ELVIS PRESLEY
Frankie and Johnny / Paradise Hawaiian Style.
RCA 66340. Okay, so these two soundtracks from the King’s Going-Through-the-Motions-in-Hollywood period hardly represent his best work, but at least you're getting two albums for the price of one.

CLASSICAL

• SCHUMANN: Violin Concerto.
MENDELSOHN: Violin Concerto.
Szeryng: Dorati. MERCURY 434 339.
“...Szeryng and Dorati handle both [concertos] with great affection and A-I musicianship” (January 1966).

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DAVID BYRNE
LUAKA BOP/WARNER BROS. 45558 (51 min)
Performance: Dyspeptic
Recording: Very good

With the resigned countenance of someone surveying the smoldering ruins of what used to be, David Byrne finds modern life sadly out of whack on his new album. "David Byrne" is thematically of a piece with the Talking Heads' "Naked" and Byrne's prior tract on civilization's undoing, "Uh-Oh!" But the latest album, co-produced by long-time New York avant-garde master and bossa-nova specialist Anto Lindsay, is more stark and jarring than either of those other discs.

Byrne's outlook is bleak, tending toward disgust, confusion, and fright. He looks back at good times and discotheque days as if pondering a dimming phantasm: "What do you suppose? / Was it nothing at all?" he sings in Nothing At All. Sickness, dying, and death are everywhere. Instead of providing ironic leavening in the form of bright, bouncy music, Byrne and company play in chiaroscuro this time. Angels, a polyrhythmic stomp driven by Byrne's clarinet guitar, does bear an outward similarity to the Heads' classic Once in a Lifetime, but by contrast here he's sending out such alienated distress signals as, "I can barely touch my own self / How could I touch someone else?" Occasionally the album runs aground on its own self-conscious eclecticism, but overall "David Byrne" is a brave and serious work in which the artist refuses to ignore the horror surrounding him. As he sang in another song from what seems like a lifetime ago, "This ain't no foolin' around." P.P.

PAULA COLE
Harbinger
IMAGO 21018 (42 min)
Performance: Ambitious
Recording: Excellent

Twenty-six-year-old Paula Cole makes an impressive debut with "Harbinger," a collection of confessions and social observations in the alternative jazz-pop mode. As for her writing style, imagine Sixties singer-songwriters Joni Mitchell and Laura Nyro poring over the diaries of their youth. And as a vocalist, add the feather-soft treble and trumpet headtones of, say, Julia Fordham.

Trained in jazz singing at Boston's prestigious Berklee School of Music, Cole is a personal" can go before it becomes "prosaic." If she gets that under control, Cole may mature into one of her generation's premier voices. A.N.

J.J. CALE
Closer to You
VIRGIN 39660 (42 min)
Performance: Haphazard
Recording: Some

Once considered a mystical blues guru, the eternally laid-back J.J. Cale has turned out some classics in his time (Cocaine, After Midnight, Crazy Mama, Call Me the Breeze), his smoky voice and undulating guitar style often proving more seductive than his compositional talent. This album, recorded virtually in his living room, qualifies for an award—the Poorest Excuse for a Professional Recording Released This Year. "Closer to You" sounds like a teen band's first attempt at putting something down on tape, without anybody controlling the levels or knowing how to mix. On Borrowed Time you can hear Cale say, "Somebody play something." In the publicity notes he explains, "The funny thing is, when I said that, like, 'take it,' nobody took it. It was so overdubbed it."

More like pathetic. A.N.

THE FIRESIGN THEATRE
25th Anniversary Reunion Show: Back from the Shadows
MOBILE FIDELITY 747 (two CD's, 98 min)
Performance: Amusing flashback
Recording: Generally good

For baby-boomers—American ones, at least—the Firesign Theatre was the Beatles of comedy, a four-man troupe of writers/actors who for a decade or so (1966-1976) made a string of increasingly sophisticated albums that were both extremely funny and remarkably prescient about life as we would soon know it (they lampooned New Age mysticism and the implications of cable-TV narrowcasting, for example, years before such things impinged on the mass consciousness). Recently, Mobile Fidelity reissued a bunch of their albums on CD and

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BY CHRIS ALBERTSON, FRANCIS DAVIS, PHYL GARLAND, RON GIVENS, ROY HEMMING, ALANNA NASH, PARKE PUTERBAUGH, AND STEVE SIMELS

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Stereo Review

October 1994

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POPULAR MUSIC

Sony put out a two-disc greatest-hits set, so last winter—feeling that the Nineties might be more in sync with their world view than the Reagan years—the original Fireigns mounted a ten-city reunion tour that's documented on this new album. Many of their most familiar hits are reprised and updated here, albeit in abbreviated form, and while you probably need a video to really appreciate what's going on (trust me on this—I saw the show when it played Manhattan), there's a loose-limbed improvisational feel to the proceedings that should be endearing to anybody who ever cared about the quartet's work. In the meantime, let's hope there's a full-length studio album ASAP—it would be good to hear what these guys think about the Brave New World they predicted all those years ago.

But they still read like something written during a hallucinogenic high—words and images that might have seemed important and possibly profound while she was up, but otherwise come off as obscure and obtuse. Such as in Greta, which may or may not be about Garbo: "She says in words unspoken...she's from out of town/Well some cry...well I really don't dance down/Stormy weather...It cuts like a knife." Is this what happens when you quit the rock-and-roll life for mommyhood? Either way, we're left with pleasant melodies, churning guitars, and yet another question: Does Stevie have anything left to say? Maybe if she joined a band... . A.N.

**DAN PENN**

Do Right Man

SIRE 45519 (37 min)

Performance: Cry like a river

Recording: Good

Dan Penn is a middle-aged white guy who, as a teenager, fell in love with black music. Don't know him? How about his songs—Sixties soul classics like Do Right Woman, Dark End of the Street, Sweet Inspiration. It Tears Me Up, You Left the Water Running, and I'm Your Puppet, recorded by the likes of Aretha Franklin, James Carr, the Sweet Inspirations, Percy Sledge, Solomon Burke, Otis Redding, and James and Bobby Purify?

"Do Right Man" reunites Penn, once a staple of Chips Moman's Memphis-based American Sound Studios, with guitarist Reggie Young and keyboardist Bobby Emerson (the centerposts of Moman's house band) and with many of the players who put Muscle Shoals (where Penn started out) on the map. Most of them went on to make Nashville the hippest recording center without a coast. Here, Penn mostly just serves up his old tunes pretty much the way he wrote them and the way he demoed them for the singers who made them famous. He's not an extraordinary vocalist, but through clarity and simplicity of approach he makes a direct hit on the emotions—there's nothing between the song, the singer, and the listener except the kind of honesty that rips a hole in your soul. A.N.

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OZZY AND HARRIET

Comedy. The kids are embarrassed when Ozzy bites the head of a bat during dinner. Ozzy: Ozzy Osbourne. Harriet: Janene Garafolo.

***

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LITTLE CROWDED HOUSE ON THE PRAIRIE

Discussion. Topic: Why there are no women in popular music?

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JIM HENSON'S BLAKE BABIES

Children. Juliana Hatfield finally goes all the way with Kermit the Frog.

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BEATLES REUNION

Concert. Time approximate after baseball.

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WEBB PIERCE
King of the Honky-Tonk
COUNTRY MUSIC FOUNDATION
(119D/MSD-355/0 (44 min)
Performance: Definitive
Recording: Good for the period

By the time he died in 1990, Webb Pierce was a Nashville embarrassment—a throwback to the days of rhinestone and rogue excess. Now half the New Young Bucks want to be just like him. And why not? Pierce may have been garish enough to upbraid a convert with silver dollars and to charge admission to his guitar-shaped swimming pool, but between 1952 and 1959—when these songs were recorded—ufenettered with any instrument that might take the scummy edge off barroom music—he clearly gauged the public's taste and inherited the Hank Williams crown. When Pierce, in all his glorious nasality, plaintively moans Buck Street Affair, There Stands the Glass, and In the Jailhouse Now, you know that's country.

A.N.

THE ROLLING STONES
Voodoo Lounge
VIRGIN 39782 (62 min)
Performance: More like doodoo
Recording: Excellent

To be blunt about it, other than money I can't figure out why the Stones bothered to make this album, which showcases the worst aspects of Jagger's and Richards's solo records (hollow professionalism, roc' rhymes) with none of their virtues (melodic invention, substantive grooves). Oh, it all goes down smoothly enough—producer Don Was crafted a nice faux-live sound for the band, new bassist Darryl Jones is clearly simpatico, and the Richards/Wood guitar mesh remains inimitable. But while Jagger's phrasing is sharp as ever and his harp work idiom perfection, the lack of memorable songs is almost shocking. This is some of the most impersonal, empty-headed stuff the Stones have ever recorded, all pro forma lusty posturing (Love Is Strong, Sparks Will Fly) and stunningly cliched metaphors (Brand New Car, in which a woman is celebrated in seemingly endless automotive terms). One cut—New Faces—breaks through the torpor briefly, with a tinkling harpsichord that harks back to the band's Regency Dandy period, but it's not enough. In fact, "Voodoo Lounge" is the first Rolling Stones album I wouldn't care much if I never heard again. Sorry guys—as you observed some years ago, time waits for no one.

S.S.

SEAL
ZTT/WARNER BROS. (51 min)
Performance: Seamless
Recording: Good

Full of lush and lovely tunes that seem to glide on a frictionless plane, British singer Seal's second album is a wonderfully airy pop-soul symphonette. It's mood music that finds its soul in restless melodies that modulate in rolling, rounded contours. Producer Trevor Horn has done a masterful job of polishing "Seal" to a mirror-like gloss. Instruments are submerged into the mix like fine bits of glass pieced into a mosaic; guitars, percussion, keyboards, and voices are supple and subtle strands in Seal's whimsical sonic architecture. The music breathes and pulses as songs flow seamlessly into one another. Certain tracks do have a more prominent signature, such as Prayer for the Dying with its hypnotic, tuneful throb and thrilling changes; Kiss from a Rose, which boasts some stunning a cappella passages from a chorus of overdubbed Seals; and Fast Changes, given a little coffeehouse-jazz feel courtesy of a lilting flute and a ra-STA-style interlude. But the album's principal impact is as a totality, with one buttery passage melting dreamily into another.

P.P.

JO-EL SONNIER
Cajun Roots
ROUNDER 6059 (41 min)
Performance: Strictly French
Recording: Good

In his various Nashville incarnations, Cajun singer/accordionist Jo-El Sonnier tried hard to be a mainstream artist, trotting out his Cajun roots on occasion but more often opting for spirited, R&B-flavored country-rock. But critics often lambasted him for forsaking his heritage (which he saluted so handsomely on "Cajun Life," a 1980 Rounder release), and Nashville finally gave Sonnier the boot in 1993. So now he's back where he started, singing authentic Cajun music. This new album, all in French, with old-world lyrics and most of the tunes that make up the Cajun canon, is the musical equivalent of blackened redfish—spicy, ethnic, and a hell of a lot better.
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Here's a mysterious artifact that crossed our desks recently—a live CD recorded early this year at some smoky jazz dive in Prague, Czechoslovakia, frequented by the noted Lou Reed fan Vaclav Havel. It features a sax player named (you guessed it) Bill Clinton. We don't know where you can buy "Two Presidents' Jam Session" (Cesky Rozhlas 0001-2531), unless you've got a Czech record store in your neighborhood, but be advised that it features our Commander in Chief in impromptu renditions of Gershwin's Summertime and Rodgers and Hart's My Funny Valentine. A so be advised that—on the evidence here—the Prez shouldn't give up his day job.

SPIN DOCTORS

Turn Me Upside Down

EPIC 52907 (55 min)

Performance: Funky blooey

Recording: Good

What sets the Spin Doctors apart from their brethren on the neo-hippie alternative-band scene is that they've got a vocalist and songwriter whose presence doesn't allow them to slip into an endless jamming mode. (It also improves their chances of connecting with a broader public.) No other like-minded band would dare be so unabashedly heart-on-sleeve as to record a song called You Let Your Heart Go Too Fast, nor make the tune so satisfyingly catchy and to the point.

But what gives Spin Doctors an edge could also prove to be a liability in the long run. Though they're all fine musicians—guitarist Eric Schenkman and bass player Mark White in particular—there's not much in the way of stick-to-your-ribs substance going on beneath the surface. Singer Chris Barron's capricious, signed-cutoff wordplay and the band's colorless, automatic funk quickly wear thin over the course of an album. And Barron doesn't quite deliver the goods vocally: a God-made funkateer he is not, and lines like, "Good lawd, ya'll / My gosh almighty / Her booty's fine" (from Big Fat Funky Boots), sound ludicrous issuing from his lips. To be fair, a degree of irony is an intended part of the Spin Doctors' aesthetic. Barron gets a lot of mileage out of such Far Side-style lyric scenarios as Cleopatra's Cat and Hungry Hamed's (an ode to an ethnic Brooklyn bakery), and when the band locks into a good groove behind him they can be a hoot. But although they play with taut, admirable economy throughout, the Spin Doctors too often wind up merely treading water, joking and funk-hopping reflexively, working hard but not really transcending.

THE SUBDUES

Annunciation

HIGH STREET 10323 (55 min)

Performance: Revival

Recording: Superb

On their first album in three years, the Subdudes, a New Orleans-based R&B band, show they know something about annunciation firsthand. The "Annunciation," in Biblical terms, was the angel Gabriel's declaration that the Virgin Mary had conceived the Christ child. The Subdudes haven't delivered anything quite so headline-grabbing, but, in recording this record on the Crescent City's Annunciation Street, they've not only resurrected their career (their old label, Atlantic, dropped them in 1992) but also brought forth some Good News, indeed. Stoked with gospel overtones, the Subdudes' repertoire at times sounds like that of a black Southern street band, and lead vocalist Tommy Malone sometimes comes across like Michael McDonald—a white guy trying too hard to sing the blues. But he quickly loses that pretense through pro-
found passion and his honest quest for spiritual answers to living life in a heathen world. From posing as the haunted lover in Why Can't I Forget About You to pounding out the Sixties soul of Poverty, in which he ponders what the world would be like without oppression and hardship, Malone plumbs the deepest depths of spiritual searching, finding comfort in the quest. And the playing here is uniformly fine, with affecting slide-guitar work, memorable harmonica solos from guest Howard Levy, and the astonishing tambourine work of Sieve Amedee. "It's so hard, living on the human world ... I want to believe / But it's so hard," Malone sings of trying to regain the religious faith that sustained him as a boy. Maybe so, but this record, fresh and invigorating in both its music and enlightening lyrics, proves its own redemption for the listener.

TOAD THE WET SPROCKET

Dulcinea

COLUMBIA 57744 (47 min)

Performance: Solid

Recording: Good

I f one wanted to be uncharitable about it, Toad the Wet Sprocket could be branded as a kind of R.E.M. Lite, a more listener-friendly version of those alternative pioneers, without the brainy angst. In their first two albums, Toad the Wet Sprocket was initiative of the Athenians to a fault. But in the band's third disc, "Fear," they made some giant strides forward, sharpening and clarifying a more distinct identity for themselves. Now, with "Dulcinea," they refine that progress, making for some altogether pleasant listening. None of Toad's vague, navel-gazing lyrics are about to stand the world on its head ("Another day I call and never speak / You would say nothing's changed"), but the even, well-tempered surface of their folk-rock jingle-jangle does have its aesthetic appeal. Their songs are huggable and easily absorbed, shot through with an arresting hook every now and again. Will Toad have a hit as big as their previous disc's "All I Want?" The two instant candidates for follow-up honors are "Something's Always Wrong" and "Fall Down," in which clean-toned guitars and a well-honed sense of folk-rock dynamics frame Glen Phillips's agreeably obscure vocals. "Dulcinea" is a perfectly delightful, if ultimately inconsequential, album with which to while away some time.

ART BLAKEY

A Night in Tunisia

MOBILE FIDELITY 601 (52 min)

Performance: Superb

Recording: Excellent

M uch has been said about Art Blakey and his Jazz Messengers, a group whose personnel changed through the years and proved to be a launching pad for jazz stars. There were many great Messengers groups, but the best one was probably the 1959-1960 edition heard on this reissue. With the crisp, plaint trumpet of Lee Morgan welded seamlessly to Wayne Shorter's sonorous, aggressive tenor, the result is, put it mildly, uncanny perfection. Add the rhythm section, with Blakey's drums, Jaymie Merritt's bass, and Bobby Timmons's bubbly piano, and you have a startlingly cohesive group.

Listen to the title tune. Dizzy Gillespie's "A Night in Tunisia," and you will literally be blown away. Blakey and his men frequently performed and recorded this bop classic, but rarely with such exuberance as here—this is a veritable orgy of sounds and invention, a masterpiece, right down to the obligatory codas by the two horns. The rest of the album is not to be sneezed at, either, but I recommend a slight rest period between the first cut and the remainder of the album. Technically, the original Blue Note recordings have never sounded as good as they do on this Mobile Fidelity "Ultradisc II" reissue, but I wish the company had also taken advantage of the CD's extended playing time and included other selections from these dates, even if it meant dropping the alternate take of "Sleeping Dancer: Sleep On. Still, time has not diminished the excitement generated by these performances more than three decades ago.
**ANDRÉ PREVIN**

**A Touch of Elegance**

*COLUMBIA/LEGACY 57637 (61 min)*

**Performance:** Excellent  
**Recording:** Very good

Although he became better known for his film scores and his work as a conductor in the classical field, André Previn first gained public attention as a jazz pianist. His most successful work as such was a 1956 Contemporary album of music from *My Fair Lady*, a collaboration with drummer Shelly Manne (the association produced many other fine releases and probably originated the idea of dressing Broadway in a jazz outfit).

The eighteen tracks in this new Previn compilation are taken from five Columbia albums he made between 1961 and 1963. Previn is an elegant player, and while he's never had a truly personal keyboard style, he has such exquisite taste that it almost doesn't matter. Here he performs standards, original songs, and songs by Duke Ellington and Kurt Weill in a variety of settings, often using his own arrangements for the string section. More adventurous ears will enjoy his work with trombonist J. J. Johnson, especially *Bilbao Song*, and Previn's original fans will recognize the old spirit on *Don't Sing Along* and *Intersection*, which reunited him with Shelly Manne. It is extraordinary that the most recent tracks here are thirty-one years old, because this music has the freshness of something that happened yesterday, and I happen to like it all. C.A.

**TOM TALBERT**

**Bix Duke Fats**  
SEA BREEZE 3013 (40 min)  
**Performance:** Frosty but delicious  
**Recording:** Very good

If you are not familiar with Tom Talbert's name, don't feel bad—even though he became active on the music scene in the middle Forties, his work has never cast him into the brightest spotlight. The band he led on the West Coast between 1946 and 1949 at one time included Art Pepper and Jack Montrose, and one edition made four Paramount sides in 1947. But nothing much happened, so Talbert broke up the band and wrote charts for other leaders, including Cab Calloway, Claude Thornhill, Stan Kenton, Oscar Pettiford, and Tony Pastor. In 1956, Talbert signed with Atlantic, and the result was two albums, "Bix-Duke-Fats" and "Wednesday's Child." The former set was later reissued on a small California label, *Modern Concepts*, and is now available again on Sea Breeze, another small label, along with "The Warm Cafe," recorded in 1956, 1957, and 1958.

The eighteen tracks in this new collection are taken from three Talbert albums recorded in the late fifties. Talbert made many other fine releases and probably originated the idea of dressing Broadway in a jazz outfit.

**MULGREW MILLER**

**With Our Own Eyes**  
NOVUS 63171 (60 min)  
**Performance:** Ach du lieber  
**Recording:** Fine

In the fourteen years since he emerged on the national scene with the Duke Ellington ghost orchestra, Mulgrew Miller has honed his style to a point where it is recognizable for all the right reasons. "With Our Own Eyes" is the latest in a fast-growing catalog of Miller recordings, a trio session that focuses on the pianist's own compositions but also includes the classic *Body and Soul*, Michel Legrand's *Summer Me, Winter Me*, and *Another Type Thing*, by fellow pianist James Williams. It's a typical Miller set—imaginative, lyrical, and apt to swing. There is also a measure of whimsy, such as *Ach Du Lieber Augustine*, which creeps into the end of *Carnival*, but what's most important is that something worth our attention is happening throughout. C.A.
P E T T I F O R D, and drummer Osie Johnson. The arrangements are written in a style that reflects the mid-Fifties' jazz trend, which was to make it all somewhat frosty. The sessions were made in New York, but Talbert's approach is very West Coast—we get burnished brass and bouncy rhythm with good, solid solos. *Green Night and Orange Bright* is Talbert's own composition, a slow, oozing, personal impression of Bix and Fats that has some of the feel of Woody Herman. George Wallington plays superbly on the Waller pieces, without a trace of Waller's own style—*Black and Blue* is particularly effective. Wilder, Herb Geller, Aaron Sachs, and Barry Galbraith contribute fine solos.

Except for Cole Porter's *What Is This Thing Called Love*, Django Reinhardt's *Maman de Mes Reves*, and Fats Waller's * Ain't Misbehavin*, "The Warm Cafe" features Talbert's own compositions, and the stars here are alto saxophonist Don Shelton and trumpeter Steve Huffsteter. The rest of the cast on this set does not include any household names, but they're all excellent musicians, and the focus is where it really matters: Talbert. The sessions were made in New York, but Talbert's charts reflect the mid-Fifties' jazz trend, which was to make it all somewhat frosty. The opener, *Tea for Two*, features the sixteen-piece Carnegie Hall Jazz Band and a sextet whose all-star members include trombonist J.J. Johnson, who performed at the Jazz at the Philharmonic concert that started it all a half century ago. When the band kicks in so does Vanessa Williams, but her vocal is pitiful. Apropos weak spots, the next performance is a tribute to Oscar Peterson by seventeen-year-old Peter Delano; okay, the kid shows promise, but this was not the right occasion to display it.

Of the evening's vocalists, Dee Dee Bridgewater does a palatable job giving Ella Fitzgerald the nod with *Shiny Stockings*; Abbey Lincoln pays a fine tribute to Billie Holiday with *I Must Have That Man*; Antonio Carlos Jobim murmurs his own *Desafinado* and *How Insensitive* as if to himself; and Betty Carter manages to get *How High the Moon* off the ground without going into deep space. Carter returns to engage in some expendable scatting at the end of the final track, *Now's the Time*, which does better in the instrumental department. In fact, its opening choruses—playful brass banter by Ray Brown and Christian McBride—are among the concert's highlights, and the interactions between J.J. Johnson and Jackie McLean, Herbie Hancock and Hank Jones, Roy Hargrove and Joe Henderson, and the Kenny Burrell and Washington later in the track are fine too.

From an artistic point of view, Hank Jones's solo rendition of *Willow Weep for Me* and a sextet performance of *The Eternal Triangle*—with Hargrove, McLean, and guitarist Pat Metheny—are the set's most satisfying tracks. Jimmy Smith's organ roaring *Down by the Riverside* is most apt to set your fingers snapping, and *Yellowstone*, featuring saxophonist Art Porter with Jeff Lorber and Bruce Hornsby on keyboards, is most likely to be heard at your local supermarket or at a Kenny G Appreciation Society meeting. *Manteca* is enlivened by Roy Hargrove's sparkling trumpet—it is a worthy tribute to Gillespie. Was this a worthy tribute to Verve? I suppose so, but it does point out how jazz has lost much of its freshness. We are on a treadmill, and some of these feet are getting more tired at each turn.

C.A.

SOUND INVESTMENTS

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C.A.
**QUICK FIXES**

**ADIOS AMIGO: A TRIBUTE TO ARTHUR ALEXANDER**

RAZOR & TIE 2814 (54 min)

All-star—Graham Parker, Elvis Costello, Marshall Crenshaw—interpretations of songs by the R&B cult figure who died last year in the midst of a major career renaissance. High points: soul great Chuck Jackson and Mark Knopfler on You Better Move On, Roger McGuinn's chiming twelve-string on Anna, and Robert Plant's understated but moving If It's Really Got to Be This Way.

S.S.

**JOHN CALE**


RHINO 71685 (two CD's, 154 min)

An excellent overview of Cale's work après the Velvet Underground, which is more substantial and stylistically varied than I remembered. Rhino's remastering is particularly noteworthy—for example, the songs from "Paris 1919" (for my money Cale's masterwork) seem to be missing about seventeen layers of gauzy sonic muck compared with the Warner Bros. reissue.

S.S.

**FRANK CHRISTIAN**

Where Were You Last Night

GAZELL 2009 (41 min)

Frank Christian, a singer/songwriter/guitarist with a strong jazz/blues bent who's versatile enough to have recorded with both the Smithereens and Nanci Griffith, made this album for a tiny Greenwich Village-based label in the early Eighties; consequently, few people have heard it, and that's a genuine shame. As this handsomely remastered CD version proves, it's got late-night, back-room ambience to burn, and the title tune is a should-be classic that somebody (k.d. lang?) ought to cover, pronto.

S.S.

**GILBY CLARKE**

Pawnshop Guitars

VIRGIN 39567 (43 min)

Adequate but mostly unexciting heavy-metal noise from the guy who replaced Izzy Stradlin in Guns 'n Roses. Things threaten to perk up when Clarke covers the Stones (Dead Flowers) and the Clash (Jail Guitar Doors), but the latter only proves that he's got good taste, and the former demonstrates that Axl Rose may be the cheesiest piano player in rock-and-roll history.

S.S.

**COUNT FIVE**

Psychotic Reunion Live!

PERFORMANCE 396 (53 min)

Count Five was the quintessential one-hit wonder—the band's 1966 Yardbirds knockoff, Psychotic Reaction, was the on-ly time anybody outside of their home town ever heard of them. This reunion show, however, recorded live in the late Eighties with all the original members, is a minor knockout. The guys sound exactly like they must have sounded as teenagers in their garage in San José, California. S.S.

**ROGER DALTREY**

Daltrey Sings Townshend Live at Carnegie Hall

CONTINUUM 19402 (71 min)

Given the existence of any number of live Who recordings of these songs (sans the overblown orchestral accompaniments here), the pertinent question is: "Why did he bother?"

S.S.

**EROTIC SOUND EFFECTS**

BAINBRIDGE 2009 (67 min)

The 147 sound effects on the 90 tracks here begin with some corny pick-up lines, include raunchy messages to put on your answering machine (when you're sure mother isn't going to call), and extend to moans, groans, and the sounds of "plain ol' sex on a squeaky bed." The actors sound amateurish, but they make up in enthusiasm whatever they lack in professional polish.

William Livingstone

**KRISTEN HALL**

Be Careful What You Wish For

HIGH STREET 94-11 (51 min)

Acoustic singer-songwriter. Half-baked songs. Forgettable voice. Amateurish production. Just because somebody paid money to release it doesn't mean you have to buy it, no matter how guilty you feel about the world. A.N.

**SCOTS PIRATES**

SCHOOLKIDS 1508 (55 min)

Led by justifiable Detroit legend Scott Morgan (his Sixties outfit, the Rationals, was an astonishing blend of the Rascals' blue-eyed soul and the metallic fury of the MC5), this band purveys atmospheric, no-frills, guitar rock that makes most of what passes for same these days sound puerile. As they used to say in Morgan's home town, it's killer.

S.S.

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SE HABLA ESPANOL
Browning, whose piano playing has rarely been more articulate or authoritative, accompanies the soloists in everything but Dover Beach, where Hampson is joined by the Emerson String Quartet. Browning also deserves credit for shepherding the whole project to completion and for researching and writing the comprehensive notes. D.P.S.

BEETHOVEN: Piano Quartet, Op. 16
SCHUMANN: Piano Quartet, Op. 47

Ax: Stern: Laredo: Yo: Ma
SONY 53339 (53 min)
Performance: Warmhearted
Recording: Rich

The affection shared by Isaac Stern and his three younger associates—Emanuel Ax (piano), Jaime Laredo (viola), and Yo-Yo Ma (cello)—for the smallish but distinguished repertory of Classical and Romantic works for piano quartet, and the enthusiasm generated by their collaboration, illuminate this Beethoven/Schumann presentation perhaps even more strikingly than their earlier Brahms and Fauré recordings. Beethoven’s Op. 16 is far less frequently heard in this version than in his original one for piano and wind quartet, while the latter remains the “basic” version, the one with strings sounds hardly less idiomatic to these instruments in this warmhearted realization.

Among recent recordings of the Schumann, one of the genuine masterworks of the genre, my preference is for the one on RCA by André Previn (as pianist) and his group of string players— their essentially similar approach benefits from a touch more drive. But those attracted by the Beethoven coupling will find only pleasure in this richly recorded Sony CD, which comes with annotation by Ax that is as characteristically lucid and stimulating as his playing.

K.F.

BRAHMS: Viola Sonatas, Op. 120;
Songs for Alto, Viola, and Piano, Op. 91
Zukerman: Neikrug: Horne: Katz
RCA 61276 (57 min)
Performance: Sonatas lovely
Recording: Very good

I grew up with the original clarinet versions of Brahms’s Op. 120 sonatas (No. 1 in F Minor, and No. 2, in E-Flat Major), so I am more than usually aware of the change in character wrought by the composer in transcribing these masterpieces for viola, especially given the dark and dusky tone quality with which Pinchas Zukerman imbues them in these performances with pianist Marc Neikrug. The opening of No. 1 is somber and deliberate, and there’s no
lack of sentiment in the slow movement. While the Allegretto grazioso has delicacy, I'd have liked a bit more lift. Passion and a swift flow mark the finale. In No. 2, the first movement, marked animale, is gentle to a fault. There is more of a legato style to the middle movement than I'm used to and more sweetness than ruggedness in the marvelous quasi-chorale middle section. I like the easy agility that Zukerman and Neikrug bring to the penultimate set of variations. Fine, rich recorded sound in both sonatas.

The two Op. 91 songs for contralto, viola, and piano—performed here by Marilyn Horne with Zukerman and the singer's ever-dependable accompanist, Martin Katz—are among Brahms's loveliest and most cannily woven creations. Gestilte Selbsucht, on a text by Friedrich Rückner, is by turns calm and agitated, with an independent viola line. In the more celebrated Geistliches Wiegenlied, the viola interweaves the melody of the carol Joseph, Lieber Joseph Mein, with the vocal line, a setting of a poem by Lope de Vega (in a German translation). Regrettably, Horne is rather off-form in these performances, tending to swell her words in the Rückert song and to let the line get a bit out of focus. Geistliches Wiegenlied fares somewhat better. In any case, Zukerman and Katz are admirable partners. D.H.

BRUCKNER: Symphony No. 5

BACH/WEBERN: Ricercare

Cleveland Orchestra, Dohnanyi
LONDON 436 153 (63 min)
Performance: Squeaky clean
Recording: Very good

Bruckner's Sixth Symphony, in A Major, is the most compact and textually uncontroversial of his nine symphonies, and if it does not scale the empyrean heights of his Fifth and Eighth, it does not scale the empyrean heights of his Ninth. Its symphonic density is closer to Beethoven's Sixth than to his later symphonies, and it is written in the key of A Major, rather than the key of D Major, which is the key of his Sixth Symphony. The symphony is divided into four movements, the first movement is a sonata form, the second movement is a slow movement, the third movement is a scherzo, and the fourth movement is a finale.

The first movement is a sonata form, with a fast allegro opening, followed by a slow andante middle section, and a fast allegro coda. The second movement is a slow movement, with a melody that is based on a simple harmonic progression. The third movement is a scherzo, with a fast and playful tempo, and the fourth movement is a finale, with a fast and lively tempo. The symphony is a powerful and moving work, and it is one of Bruckner's most popular and frequently performed symphonies.

KOECHLIN: The Jungle Book

Charles Koechlin is remembered, insofar as he is remembered at all, as that French composer who was fascinated by Kipling's Jungle Book. Beginning at the turn of the century with vocal settings of three of Kipling's poems and continuing in the 1920's and 1930's with four substantial symphonic poems, Koechlin hitched his star to a once-adored poet who has gone even further out of fashion than Koechlin himself. Every once in a while, someone comes up with the idea of reviving, if not Kipling, then at least Koechlin. This current attempt is perhaps the most credible of all, if only because conductor David Zinman gives us, for the first time on records, the whole Kipling cycle in all its diversity and colorful sincerity.

CHAUSSON: Poème de l'Amour et de la Mer

RAVEL: Une Barque sur l'Océan

Both sonatas.

RAVEL: Jeux d'eau (Ricercare from Bach's Clavierbuch)

KOECHLIN: The Jungle Book.

Recording: Sumptuous

The last and best-known of these pieces, Les Bandar-log, is a bit of a satire scherzo (the banderlogs are monkeys), is not the most typical. Most of these curious and original works suggest a kind of nature mysticism that ought to appeal to a modern environmental consciousness. Koechlin's musical voice is not quite consistent, and sometimes he wanders down the oddest bypaths. He speaks in a twentieth-century European language about curiously old-fashioned and exotic things. There is nothing specifically Indian about his jungle; it's not exactly a real place but more like a landscape of the imagination.

I wish I liked these performances better. The lyrical sections work well—listen to "Night" from The Spring Running or to The Meditation of Purni Bhagat. At such moments one can really believe in Koechlin. But the livelier and more dramatic sections are a bit rough, and the performances overall are merely workmanlike. Still, even with their shortcomings, they help open up the exotic and private imagination of one of the strangest and most neglected figures in twentieth-century music.

E.S.
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Mussorgsky: Boris Godunov

Soloists: Chorus, Berlin Philharmonic, Abbado
SONY 58977 (three CD’s, 201 min)

Performance: Outstanding
Recording: Orchestra highlighted

Although this is a lavishly cast Boris, with no weak elements among the singers, the real stars are Claudio Abbado and the Berlin Philharmonic. That conjunction may bring Karajan to mind, as well as the memory of his own Boris, which, however, he recorded with the Vienna Philharmonic (on London). But there are other major differences between that performance and this new one. Karajan favored the Rimsky-Korsakov edition, whereas Abbado opts for Mussorgsky’s original—the 1872 edition with the St. Basil Scene added along with the Kromy Forest finale (minus the Simpleton-Urchins episode). Abbado’s way with the music is more urgently propulsive, avoiding Karajan’s expansions and lingerings while at the same time equaling the virtuosity of execution he was able to elicit from his players. The engineering keeps the remarkable Berlin orchestra in the foreground throughout, though it frequently overshadows the principals and, particularly in the early scenes, accords insufficient presence to the chorus as well.

Anatoly Lotchetra does not portray the title character in the exuberantly theatrical manner of Fecodor Chaliapin or Boris Christoff (the most famous exponents of the role). His Boris is even more subdued than the figure that such relatively restrained interpreters as Nicolai Ghiaurov and Martti Talvela have made him: an inwardly guilty and melancholy ruler and a tender father whose ferocious streak is rarely in evidence. What Kotcherga brings to his portrayal is an impressive and unfailingly musical command of a warm, powerful, yet firmly focused bass-baritone that ranges effortlessly over its full extension. His Boris is even more subdued than the figure that such relatively restrained interpreters as Nicolai Ghiaurov and Martti Talvela have made him: an inwardly guilty and melancholy ruler and a tender father whose ferocious streak is rarely in evidence. What Kotcherga brings to his portrayal is an impressive and unfailingly musical command of a warm, powerful, yet firmly focused bass-baritone that ranges effortlessly over its full extension.

In the other main roles, Sergei Larin makes a lyrical yet convincing Dimitri, on a par with the best on record: Samuel Ramey is bel canto-trained yet remarkably Russian-sounding as Pimen; Marjana Lipovsek is a rich-toned and vivid Marina; and Sergei Leiferkus is a steely, sinister Rangoni. Philip Langridge (Shuisky), Elena Zaremba (Hostess), Gheb Nikolsky (Varlaam), Albert Shagidullin (Shelkalov), and Alexander Fedin (Simpleton) all turn in excellent cameos, and Abbado molds the cast into a remarkable ensemble. In sum, this Boris is an outstanding achievement musically, if not ideally balanced sonically.

G.J.

NYMAN: The Piano Concerto; MGV
(Musique à Grande Vitesse)
SONY; Royal Liverpool Philharmonic Orchestra;
Michael Nyman Band and Orchestra
ARGO 443 382 (59 min)
Performance: Balanced
Recording: Somewhat flat

Michael Nyman has never claimed to be a profound composer, and it’s to his credit that he hasn’t acquired any pretensions because of the success of his score for the movie The Piano. The concertos draw from it is somewhat like Korngold’s Violin Concerto, which re-creates that composer’s movie themes. In both cases, superficially ingratiating qualities compensate for the lack of symphonic argument.

Rooted in minimalism, Nyman isn’t concerned much with traditional forms, and his “concerato” has little of the usual tension between soloist and orchestra. Formally, it’s more like a suite than anything else. Mosaic-like modules of music—often with moderately engaging textures and surprising instrumental sonorities—are strung together in a complementary way, many times with little transition between them. But even if you expect no more than that, the music’s lack of emotional range makes it seem more relentless than the movie’s soundtrack album. Nyman fans will want both, though the filler on this disc, a piece titled MGV (Musique à Grande Vitesse) written for the inauguration of a new high-speed European train, isn’t an attractive bonus. Like Honegger’s Pacific 231, it celebrates the intoxicating energy, force, and regularity of a railroad, but it’s so emotionally and stylishly contrived it would benefit from being half as long.

D.P.S.

RACHMANINOFF: Variations on a Theme of Chopin; Piano Sonata No. 1
Boris Berezovsky
TELEDEC 90890 (66 min)
Performance: Excellent
Recording: Richly beautiful

Among Sergei Rachmaninoff’s large-scale works for piano solo, the ones usually performed and recorded are the Second Sonata, composed in 1913, and the Variations on a Theme by Corelli, the first

Pianist Boris Berezovsky

Stereo Review October 1994
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The Sensible Sound Issue #47
of the handful of masterworks produced in his final dozen years. Young Boris Berezovsky, winner of the gold medal in the Tchaikovsky Competition in Moscow four years ago, has had the imaginativeness to direct his attention instead to Rachmaninoff's seldom-heard earlier works in both forms, and he does them both proud.

The Op. 22 Chopin Variations (on the Prelude in C Minor, Op. 28, No. 20) preceded the Corelli Variations by nearly three full decades; this was, in fact, Rachmaninoff's first big work for piano solo, and perhaps that is why he left various options for the performer. Berezovsky omits Nos. 12 and 14 of the twenty-two variations and chooses the less demonstrative of the two endings, arriving at what strikes me as ideal proportions for a work whose strengths he marshals with a seemingly instinctive understanding and commitment.

The three movements of the D Minor Sonata are "characteristic portraits" of Faust, Gretchen, and Mephistopheles—in other words, a pianistic counterpart to Liszt's Faust Symphony. In these extended fantasies, however, Rachmaninoff's obsession with the Dies Irae theme makes itself felt more than any literary allusion, putting what was for him the most personal stamp on the music.

Berezovsky puts his own personal stamp on both works, without at any point suggesting they are mere "vehicles" for him. Teldec has come through with a sonic frame that makes the most of the broad spectrum of colors and textures without the slightest hint of harshness or a single note that is less than richly beautiful.

R.F.

RAVEL: Bolero; Ma Mere l'Oye; Une Barque sur l'Ocean; Alborada del Gracioso; Rapsodie Espagnole

Berlin Philharmonic, Boulez

DEUTSCHE GRAMMOPHON 439 859

(76 min)

Performance: Polished
Recording: Translucent

For Pierre Boulez's disc debut with the Berlin Philharmonic, this generously filled CD of Ravel staples was recorded in Berlin's Jesus-Kristus Kirche. The complete Ma Mere l'Oye (Mother Goose) ballet is the prize item. The well-known five-movement suite is magical enough, but the full ballet with its eerily dramatic overture, additional spinning-wheel episode, and marvelous connecting interludes is an even more luscious listening experience. Boulez may have a reputation as a cool, unemotional conductor, but he surely weaves a spell in this performance. The unearthly curtain of sound that leads into the "Pavane of the Sleeping Beauty" is the most memorable moment.

Une Barque sur l'Ocefan, also superbly performed, may remind you fleetingly of Debussy's La Mer, but it actually has more in common with the seascapes of Rimsky-Korsakov's Scheherazade. With the remaining three works, we are on thrice-familiar territory. Alborada de Gracioso has less razzle-dazzle here than I am used to, but the texture and rhythms are precisely etched and the recitative episodes vividly characterized. There is atmosphere aplenty in the first three sections of Rapsodie Espagnole, and in the finale Boulez maintains a deliberate tempo, presumably in the interest of rhythmic articulation. His tempo for Bolero is a compromise—not as slow as the composer's own recording, but not as fast as most performances I've heard. The Berlin winds and brass acquit themselves splendidly, both solo and blended, and the climax has all the power one could ask. The sound throughout is resplendent.

D.H.
RUBINSTEIN: Symphonies No. 3 and No. 5 ("Russian")

Slovak State Philharmonic, Kolman
CENTAUR 2185 (78 min)
Performance: Idiomatic
Recording: Smooth

The current year marks the centenary of the death of Anton Rubinstein. Remembered both as a composer and as a pianist of towering ability whom Liszt himself acknowledged as a worthy rival, Rubinstein's large-scale symphonies enjoyed great popularity in the last century, and No. 5, the so-called "Russian," is one of the most fetching, filled with fine tunes, appealing colors, and infectious rhythmic vitality. In his annotation as well as his performance, the American conductor Barry H. Kolman conveys real enthusiasm for the work.

The Third Symphony appears here in the way of a discovery, as it had apparently been unheard since Rubinstein's death. It was Kolman who recently found the long-lost score, and Shana Ailwine put in hundreds of hours preparing orchestral parts. Somewhat less distinctive than No. 5, it is handsomely presented and makes an intriguing companion piece.

R. F.

SCHOENFIELD: Four Parables;
Vaudeville; Klezmer Rondos
Soloists: New World Symphony, Nelson
ARGO 440 212 (72 min)
Performance: Cooking
Recording: Neat

Paul Schoenfield, practicing the ancient and honorable profession of pastry cook, whips up some very tasty pastiches. The history of popular music is evoked here in classical form: klezmers and ragtimes, vaudeville, jazz and blues. Scott Joplin, George Gershwin, and Leonard Bernstein. Whips up some very tasty pastiches. The recording features an intimate yet warm acoustic surround that perfectly conveys the ambience of a musical house party. Recommended without reservation.

D.H.

SHOSTAKOVICH:
Symphonies Nos. 1 and 9
National Symphony, Rostropovich
TELDEC 901694 (59 min)
Performance: Top-drawer No. 1
Recording: Good

Shostakovich's remarkable First Symphony, written when he was only nineteen years old, has held a firm place in the repertoire ever since its first European per...
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motic, calling to my mind a picture of the young composer playing the piano to accompany silent movies.

The Ninth Symphony is as compact as No. 1, even though it's in five movements. From the seemingly innocuous but elegant first movement, the work passes through episodes of rapturous humor, menace, and sarcasm. Rostropovich does well generally with the somber elements, and the sizzling third movement (presto) and succeeding dark-hued largo are very good (with fine work by the solo bassoonist in the largo), but on balance his reading is on the heavy-handed side. For my taste Neeme Järvi has it right in his Chandos recording with the Scottish National Orchestra. The Teldec CD, however, has plenty of power and presence.

D.H.

**VOILANS**: String Quartets Nos. 2 and 3
Balancé Quartet
ARGO 440 687 (57 min)
**Performance:** Intense
**Recording:** Excellent

The South African composer Kevin Voilans has achieved a remarkably successful melding of native Zulu music with the modern string quartet. His Quartet No. 2 ("Hunting: Gathering")—previously recorded, and very effectively, by the Kronos Quartet—is frankly descriptive and atmospheric, but the Quartet No. 3 ("The Songlines") from 1988 verges on greatness. It's a spare, abstract musical journey that goes into deep, uncharted terrains full of insistently hypnotic rhythms, abrupt melodic slides, and closely voiced chords that suggest Aaron Copland on peyote.

From a formal standpoint, both works may seem misshapen, but there's a convincing and original internal logic to the individual movements. The Balancé Quartet's performances are tough and insightful, though that of the Second is less clean and stylish than the Kronos version.

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("Il Distratto"); Armida Overture;
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Orpheus Chamber Orchestra
DEUTSCHE GRAMMOPHON 437 783
(54 min)
The conductorless Orpheus Chamber Ensemble plays modern instruments and is not particularly tuned in to the niceties of period performance practice. But the players have a remarkable esprit as well as esprit de corps—along with wit, energy, and good humor. The vastly amusing
symphony Haydn made out of his theater music to a play entitled Il Distratto ("the absent-minded [one]"); the dramatic overture to the opera Armida, and the superb late symphony are all captured in a beautifully made recording.

E.S.

CHANCELLIER
Mexican Baroque
TELDEC 96335 (58 min)
Observances in 1992 of the 500th anniversary of Columbus’s arrival in this hemisphere brought to light a surprising amount of excellent music that resulted from the encounter of the indigenous culture with that of Europe. These Baroque compositions from Mexico rival in beauty what was being composed in Europe during the eighteenth century. The performances by the male vocal ensemble Chanticleer, accompanied by a small instrumental group, seem authentic and vigorous, and the recorded sound is warm.

William Livingstone

SHARON ISBIN
Nightshade Rounds
VIRGIN 45024 (62 min)
Sharon Isbin has commissioned and given the first performances of more new guitar music than just about anybody, including the title piece here, by Bruce MacCombie, and Joan Tower’s Clacks, both dedicated to her. She also has a wonderful mastery of her instrument, technical and musical, that permits her to make Britten’s difficult late masterpiece Nocturnal into something truly moving. That’s the highlight, but the two Gershwin piano preludes arranged by Carlos Barbosa-Lima, the new works, a short piece by John Duarte, and Walton’s amusing Five Bagatelles add up to an attractive program.

E.S.

CANADIAN BRASS
Gabriel for Brass
PHILIPS 438 392 (64 min)
Performance: Full-blast brass
Recording: Antiphony to the max
The Canadian Brass and their fans have been in love with Gabrieli seemingly forever. Some of the old favorites—the Sonate Pian’e Forte, for example—are included here, but this disc differs a bit from more typical Canadian Brass Gabrieli collections. It includes a large number of arrangements of mass sections, motets, and other period vocal music by Heinrich Schütz, Orlando di Lasso, Claudio Monteverdi, and both Andrea and Giovanni Gabrieli. That takes extra musicians, here a second brass quintet from the New York Philharmonic and a brass octet from the Philadelphia Orchestra. The result is antiphony to the max, and in modern digital sound. If you have a Dolby Surround decoder and four or five speakers, you can recreate the full effect, but even in plain old two-channel stereo it’s pretty impressive. Just don’t look for subtlety or authenticity: This is a purely modern, full-out brass blast with suitably loud touches.

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In his October 1964 editorial, Furman Hebb directed readers to STEREO REVIEW's second "Playable Page"—a detachable paper-based record featuring soprano Mirella Freni. Apart from its being the first bound-in stereo recording in magazine history, Hebb said, it was a "perfect choice to demonstrate the gifts of a remarkable new singing star."

New products this month included the Ampex PR-10-4 stereo tape deck, a two-speed, four-track version of the PR-10 professional deck; the Freeman 800 three-speed stereo tape recorder with built-in amp and speakers; and McIntosh's C24 solid-state stereo preamp with a frequency response of 20 to 20,000 cps [Hz]. In test reports, Julian Hirsch examined the Dynaco FM-3 tuner kit and the Uher 8000 portable tape recorder, a $500 machine he found versatile but inconvenient ("One cannot expect to use it without a careful study of its instruction manual and a good deal of practice").

About face. Reviewing "A Hard Days Night" and "Something New," Gene Lees, who had panned the Fab Four back in May, reversed himself after hearing Beatles songs in non-rock contexts. "As far as I'm concerned," he wrote, "they're the best thing to happen in pop music in years."

Abu Dhabi honeymoon: In "Audio Questions and Answers," reader Ronald Krausner, of Los Angeles, reflected anxieties over the energy crisis and the OPEC oil embargo. "I think that it is absurd," he wrote, "that you people continue to advocate the use of high-powered amplifiers. Have you no conscience?"

In Best of the Month, George Jellinek recommended John Denver and friends, 1974

The Superex EP-5, 1974

Georg Solti's version of Mozart's Cosi Fan Tutte on London ("extremely intense") and Chris Albertson endorsed jazzman Bob James's "One" on CTI ("A fine example of lush, jazz-flavored pop"). In other reviews, Latinophile William Livingstone was taken with a five-disc history of flamenco on Murray Hill ("No one will ever accuse the numerous performers here of not having suffered enough"). And John Denver fan Noel Coppage was appalled by the singer's "Back Home Again," suggesting that "this way lies self-parody, a network TV contract...maybe even Las Vegas engagements."

Among the new products featured were the Wollensak 4775 cassette deck, the company's first to provide Dolby B noise reduction using a single integrated circuit for each channel, the Fisher 634 four-channel receiver with both CD-4 and SQ circuitry, and the Kenwood KP-5022 automatic single-play turntable. Julian Hirsch tested the Sequerra Model 1 FM tuner, created by the same design team responsible for the classic Marantz 10B; the Jensen Model 15 Serenata speaker, a large floor-standing, four-way, ducted-port system with five drivers; the Superex EP-5 stereophones, a dynamic/electrostatic hybrid; and the Technics RS-676US cassette deck, an unusual front-loading model with solenoid-activated transport mechanism.

Taste Is Timeless: Usually serious prog-rock keyboardist Rick Wakeman of Yes told interviewer Steve Simels that his favorite single of the moment was Ray Stevens's ode to public nudity, The Streak.

John Denver and friends, 1974

ABC's TRX-3 cartridge, 1984

Phono cartridge, the AudioSource RTA-One spectrum analyzer, and (in a special report with Christopher Greenleaf) Sony's CDX-R7, the first car CD player.

Block that metaphor! Reviewer Mark Peel said of Josie Cotton's "From the Hip" that the album had "all the noisy hauteur of a Tex-Mex waitress explaining the menu to a party of Eskimos."

—Steve Simels
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