DEALER'S CHOICE
DREAM SYSTEMS FROM THE PROS

TROUBLESHOOTING:
WHAT TO DO IF THE MUSIC STOPS

WAITING FOR BRYAN FERRY

TESTED:
Optimus DCC Deck, PSB Speaker, Hafier Amp, Polk Speaker
If you think viewing a movie at home is a mere spectator sport, you've never strapped yourself into the Pioneer Home Theater. With our leadership in both audio and video technology, the linking of the two produces unprecedented results.

What you see is the sharpest, brightest picture ever played on a 50-inch screen. Our ProVision line of projection TVs features a sophisticated new short-focus lens system for a 25% brighter picture. The new high-contrast black screen increases the contrast ratio by 20%. And an advanced three-line digital comb filter significantly enhances color accuracy and improves picture quality.

The result is that ProVision delivers a screen image that can't be matched by any other projection television. A key element of the home theater experience.

The picture source is a Pioneer LaserDisc Player, a technology in which we have led worldwide. The ultimate in sight and sound, it comes 60% closer to reality than ordinary videotape. And features the superior digital sound familiar to anyone who plays CDs.

LaserDisc is widely acknowledged as the finest medium for the electronic reproduction of picture and sound track. Without it, you're not getting the maximum spectacle that "home theater" can deliver.

Of course, what you hear is equally spectacular. The enveloping intensity of five channel Dolby Pro Logic Surround Sound. All delivered care of our industry leading audio/video receivers.

Because sound quality is such a key element in true home theater, Pioneer A/V Receivers are an
excellent core building block in your system, and a good place to start if you’re assembling your home theater one component at a time.

To maximize the quality of Surround Sound, Pioneer has assembled a superb—and exclusive—package of perfectly matched modular speakers specially designed to deliver a theater-like experience.

These speakers incorporate much of what we’ve learned from our highly regarded line of TAD professional studio and concert speakers, and take advantage of our 50-year heritage of craftsmanship and leadership in audio technology.

Of course, there’s a lot more to tell, so call us at 1-800-PIioneer for more information. Or, drop by a Pioneer Home Theater dealer.

You’ll find just what you’d expect from the leaders in audio and video: Home theater so advanced, you don’t just watch it:“

Our new ProVision S-D-P5065K Projection TV incorporates a host of technological innovations. Pictured here is an actual on-screen image.

The new Pioneer S-V401K Home Theater Experience Speaker collection is customized for our Home Theater Surround Sound system.

PIONEER
The Art of Entertainment
Sherwood's component style design approach to Audio/Video Receivers offers uncompromised home theatre experience without compromising audio reproduction. The RV-6010R's Dolby® Pro-Logic decoder manufactured by Analog Devices delivers a dynamic range of 103dB. That's the same as most video disc player's and up to 20dB better than the would-be competition's comparably priced receivers.

The RV-6010R boasts a full array of features including 105 watts per channel of power, Discrete Amplifier Stages (DAS), multiple Dolby and surround modes along with component style separate preamp outputs and powered amp inputs for A/V system flexibility.

In a test report published in the July 1992 issue of Stereo Review, noted audio critic Julian Hirsch commented "We found the RV-6010R to be a highly listenable receiver, with more power than most people will ever need and enough operating features to satisfy a confirmed button-pusher and knob twister...Few people will need more than it can deliver."

Better surround performance, more power and flexible system configuration. Audition the RV-6010R...don't be conned. For more information or the name of an authorized Sherwood dealer near you call (800) 962-3203.

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Cover
One dealer's $3,000 dream: the Hafler Model 945 tuner/preamplifier and Model 9180 power amplifier, Yamaha CDX-660 compact disc player, Sony TC-RX97ES cassette deck, and KEF Q90 speakers. See page 68.
Photograph by Hing Norton

EQUIPMENT

Buying Time
TV's and home theater—tenth in a series • by Ian G. Masters

Equipment Test Reports
Optimus DCT-2000 DCC Recorder, page 44
PSB 400 Loudspeaker System, page 52
Polk Audio LS-70 Loudspeaker System, page 56
Hafler Model 9300 Power Amplifier, page 58

User's Evaluation
AudioSource SS 3001 Surround-Sound System • by David Ranada

Dealer's Choice
Experts pick their own dream teams—three systems on three budgets • by Rebecca Day

Troubleshooting
What to do when something goes wrong • by Daniel Kumin

How to Buy Your Last Turntable
Consider the options now, before it's too late • by Robert Long

MUSIC

Special CD Offer
Fresh, different jazz from DMP

Bryan Ferry
“Your spend all your time trying to create the right setting to sing in.” • by Jim Farber

Best Recordings of the Month
Keith Richards, Mahler Symphony No. 4, Lucinda Williams, Verdi’s Luisa Miller
Resembling a small contained CD-ROM player, the MMCD, is billed as compatible with today's erasable compact disc by Philips executive. The Dutch electronics giant announced a licensing agreement with LucasArts to manufacture Home THX Audio System Products. The grand-piano models begin at $19,895 and range upward to $92,000. We've been very good, and we'll take whatever one Santa can get down the chimney.

Product Notes

Bose Corporation has received a vote of thanks from NASA astronauts for the Bose speaker specifically designed for the Endeavour mission earlier this year. "Awesome" was the crew's description of the new speaker, which provided such clarity in audio communications that members were able to work without headsets. All future NASA shuttles will use the Bose systems. The Cinergetics companies (Celestion, KEF Audio, and Cinergetics Research) have announced a licensing agreement with LucasArts to manufacture Home THX Audio System Products.

Disc Notes

The Dutch electronics giant Philips has said that it would be technically possible to introduce a recordable and erasable compact disc by 1996. The CD-E format would be compatible with today's CD format, according to a Philips executive. Sony's new Multimedia CD-ROM system, the MMCN, is billed as the first portable, self-contained CD-ROM player. Resembling a small notebook computer, it has a PC-compatible microprocessor and an LCD display panel. It also plays standard audio CD's.

Youth Will Be Heard

Fuji Tape has released figures resulting from its latest survey of Americans 18 to 24 years old. Asked if they think anyone has the right to control what prerecorded music is bought or sold, 70 percent said no. Of those who favor control, 26 percent would give it to local or state government, 25 percent to record companies, and 18 percent to the federal government.

Holiday Countdown

Books, candy, and flowers make dandy gifts, and you probably don't need guidance on the candy or flowers, but have we got some books to recommend! Toss on our list is Roll Road Trip (Pharos/St. Martin's, $14.95) by A. M. Nolan. It's a vastly entertaining guide to the shrines of rock, blues, and soul—Elvis's birthplace, Madonna's first New York apartment, Buddy Holly's crash site, and many more.


Compact Discs. We like a two-CD set of "Elton John, Rare Masters" (PolyGram 314 514 136). For country music fans we recommend The Bocephus Box (MCA Curb 45104), a three-CD collection of the work of Hank Williams, Jr. from 1979 to 1992. To classical piano fans give Chopin's scherzos, berceuse, and barcarolle ravishingly played by the Chopin specialist Maurizio Pollini (Deutsche Grammophon 431 623). For symphony fans buy Dvořák's "New World," newly recorded by the New York Philharmonic under Kurt Masur (Teldec 73244). You can make a vocal collector happy with a two-disc reissue set, "Rossini, Donizetti, and Verdi Rarities" (BMG 60941), sung by Montserrat Caballe. Rare arias, prime diva. BMG has also issued "The Joy of Classical Music" (RCA Victor 61378), a companion album to Joan Kennedy's book, and "Sleigh Ride" (RCA Victor 61373), a collection of Christmas favorites.

Pure fun. Rykodisc has brought out Volume 2 of the CD game "Play It by Ear." A little like Trivial Pursuit, it includes a CD with 350 sound bites and cards that ask 1,800 questions about them. Price: around $40. Worth it. Video. "For Those About to Rock," a videotape (Warner, $23.98) that documents a rock concert in Russia by AC/DC, Metallica, and others at the time of the failed coup of 1991. Permanent value.

Delius's A Village Romeo and Juliet on laserdisc (London 071 234) will please opera lovers' eyes as well as ears. The nudity is tastefully handled.

Wish List. All we want for Christmas is a Yamaha Disklavier, an up-to-date, digitally correct version of the player piano that recreates with computer disks, clever programming, and a real piano the performances of Dick Hyman, Liberace, Peter Nero, and many others. New models from Yamaha start at $7,495. The grand-piano models begin at $13,855 and range (gulp) to $52,000. We've been very good, and we'll take whichever one Santa can get down the chimney.

Product Notes

Bose Corporation has received a vote of thanks from NASA astronauts for the Bose speaker specifically designed for the Endeavour mission earlier this year. "Awesome" was the crew's description of the new speaker, which provided such clarity in audio communications that members were able to work without headsets. All future NASA shuttles will use the Bose systems.

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Cambridge SoundWorks has prepared a pamphlet explaining Dolby Surround, including advice on operation, hook-up, and speaker placement. For a copy of "Getting the Most from Your Dolby Surround System," call toll-free 1-800-FOR-HIFI.
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MIDNIGHT SUN

featuring:
"Someone To Watch Over Me"
"Mona Lisa"
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"I've Grown Accustomed To Her Face"

Cool sounds for the next generation from Herb Alpert.

Produced by Herb Alpert

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Groove with your brothers.

featuring "Fly Like An Eagle"

The new album, continuing the legacy of grace, groove and gratification that can only come from the first family of funk.
You don't make music like this, you're born with it.

Produced by The Neville Brothers, Hawk Wolinski and David Leonard

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FOR A LIMITED TIME, SAVE ON THE RM3000,
THE 3-PIECE SPEAKER SYSTEM THAT 1800 AUDIO EXPERTS
PICKED AS BEST FOR THE SECOND STRAIGHT YEAR!

Once again Polk's RM3000 walked away with another Grand Prix. Not only was it the top choice in the annual poll conducted by AudioVideo International magazine, but it won despite the fact that the competition had a whole year to catch up.

Stereo Review called us "...the best example of a three-piece speaker system that we have yet heard...try listening to the RM3000. It might eliminate some common misconceptions about how large (and expensive) a speaker has to be to provide plenty of high quality sound."

But big performance from this system is only half the story. Because the RM3000 really knows how to play hide and seek. As handsome as the satellites are to look at, in black granite matrix, gloss white or piano black, they neatly disappear into any size room or decor.

Even our bandpass subwoofer can easily be placed out of sight. Only its powerful, musical bass performance says it's in the room. That's the way it should be in this discrete 3-piece system.

This is the best time to make our cause for celebration your opportunity to save. Choose the RM3000, now and for a limited time, while they're specially priced at all participating Polk dealers.

Nothing else measures up to the size of the RM3000's sound or savings. And you can be the expert on that at your Polk dealer.

THE RM3000, FROM THE SPEAKER SPECIALISTS OF

For deep, well-defined bass, Polk uses twin drivers coupled with a sub-bass radiator. This bandpass technology produces greater low frequency performance and smooth response.

For the location of your nearest Polk Audio Dealer, call 1-800-992-2520.
In Canada, call 1-416-847-8888.

**RM3000 Celebration runs from November 20 to January 18, 1992.
Proof you can grow up without becoming square.

Four years ago NHT introduced a literally off-the-wall approach to sound. Our compact Model 1 bookshelf speaker featured an acoustic technology called Focused Image Geometry. Its baffles slanted 21°, projecting sound away from side walls and out into the listening area, dramatically improving the stereo image. It was a hit. Ever since then, people have expected more from us. Which is why we continue to incorporate this technology in a complete line of NHT loudspeakers, from our bookshelves to our elegant towers.

We're older now, but at 21°, we're still pretty cool.

EVERYTHING YOU HEAR IS TRUE.
Rule #23
All drivers are not created equal.

The speaker on the left is designed with Injection-Molded Polypropylene (IMPP®) cone technology. The speaker on the right is paper. The speaker on the left offers cleaner, richer bass. The one on the right doesn't. The one on the left can handle extraordinary amounts of power without distortion. The one on the right can't. The one on the left is from a full line of new high-performance component speakers from Pioneer. The one on the right isn't. To find out more, call 1-800-421-1604, ext. 444.
INTRODUCING

A new digital future. Take a good look at the letters DCC. Because if you love music, they’ll soon be as common as the letters CD. Created by Philips – the inventor of Compact Disc – the Digital Compact Cassette gives you crystal clear CD quality, along with all the advantages of a cassette.

You're the recording artist.

Even better than playing music with CD clarity, DCC records with the same digital sound quality. That means you can make a digital copy of your favorite CD. There's no loss of sound. Zero hiss. After all, it's fully digital.

Music on command. With DCC, you can directly access your favorite tracks. All you have to do is enter the track number, and the player automatically locates and plays it for you. But Philips DCC also has features even a CD player can't match.

See what you hear. Beyond track numbers and elapsed track time, prerecorded DCCs show the song title, album title and the artist's name. Searching for your favorite selection has never been easier.

Built to survive. Just look at

YOUR MUSIC WILL N
PHILIPS DCC

the cassette and you can see the future in it. It's beautifully sleek.

with the entire top side devoted to album art. All of the openings are concealed under a metal slider to keep it free of dirt and dust. Best of all, both the cassette and its case are built to survive.

Your favorite artists are here. Already there are literally hundreds of titles available on DCC. From all your favorite artists, in every style, from metal, pop, rap and jazz to country, oldies, classical and swing.

And there are more coming every day.

Don't throw it all away.

Because you weren't born yesterday, you probably have hundreds of conventional cassettes — the ones we invented over twenty years ago — so Philips designed the DCC900 to play them as well. Imagine — a system that doesn't expect you to simply dismiss the past.

Get in touch with the future.

Call 1-800-982-3737 for the Philips Dealer near you, because the DCC900 is here, now.

Another First From Philips

PHILIPS

EVER BE THE SAME
Perceptual Coding

Ken Pohlmann has gone "open-loop" on us in the "Perceptual Coding" sidebar to his article "The Sound of Things to Come" in October. The best perceptual coding can be easily shown to be inferior to linear coding in such important areas as low-level subtleties, reverb decay, intermodulation distortion, etc. The biggest problem I have with what Mr. Pohlmann said is the notion that "fidelity" in any sense of the word applies to recordings made with perceptual coding. Perceptual coding makes audio worse, and the people who tell us it is an improvement are marketing people, not engineers.

DREW DANIELS
North Hills, CA

Although perceptual coding can cause problems if not done carefully and can be tripped up by artificial signals concocted for that purpose, it can also be made to work extremely well with music and speech. We know this from our experience so far with the PASC system used for the Digital Compact Cassette, which seems to be capable of audibly perfect or near-perfect reproduction of 16-bit digital audio signals. A good perceptual-coding system might actually outperform linear coding in some cases, since bits saved by not encoding inaudible sounds can sometimes be applied to coding audible ones more precisely.

Buffy Sainte-Marie

I very much object to the way Alanna Nash reviewed the Buffy Sainte-Marie album in the September issue (page 82). I am an Oneida Indian, and her cute little comments hurt us all, even if she was only trying to be funny. We Indian people have very few visible role models. Do you really have to use such racially stereotyped language? Can't you just review a record by an Indian artist straight?

BUFFY SAINTE-MARIE

Ms. Nash intended no slight in her review, but we apologize to anyone who may have found her tone offensive.

CD Storage

In September "Audio Q&A," Ian Masters stated that CD's should not be stacked horizontally because the edges can sag and "deforestation could occur over time," but a reply to a letter in the May issue said that as long as the CD's are in their protective jewel boxes, there's no reason not to stack them. Which answer is correct?

MARTY TEICHOW
Streetsboro, OH

If you want to be as careful as possible, you should store your CD's vertically, but we have never encountered any problem caused by storing them horizontally.

ORDINARY SQUARE SPEAKERS DON'T JUST PLAY MUSIC. THEY PLAY PING-PONG. WITH TRAPPED SOUND WAVES THAT BOUNCE BACK AND FORTH OFF PARALLEL WALLS. RESULTING IN DISTORTION. WHICH IS PRECISELY WHY OUR ENGINEERS BUILT THE NEW SEVEN-SIDED HP LOUDSPEAKER. THE HP PROVIDES A MUCH FRIENGLIEMR ENVIRONMENT FOR ACCURATE SOUND.

Conventional speakers play ping-pong with your music, creating distortion.

The seven-sided HP loudspeaker produces dramatically lifelike imaging. (You'll discover pure sound doesn't come in a box).

The seven-sided HP loudspeaker produces dramatically lifelike imaging. (You'll discover pure sound doesn't come in a box).

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Waiting for Fagen

Donald Fagen, where are you? Your faithful fans have been waiting ten long years for a new CD. Please go to the recording studio as soon as possible. I will gladly pay your cab fare.

GREGORY SCHACTMAN
Plantation, FL

Our sources tell us that a Fagen CD is in the works, but no release date has been set.

Good Tunes

Concerning the final paragraph in October's "Time Delay," with respect to Cat Stevens and the Episcopal hymnal: When John Wesley (an Anglican priest and founder of Methodism) was questioned about his use of popular music in worship, he reportedly responded, “Why should the devil have all the good tunes?” Churches use good music of any sort, and it is neither surprising nor “alarming” to discover that a piece of popular music has made its way into a hymnal. In the case of Morning Has Broken, it is not so much that the church has adopted a popular song as that Cat Stevens popularized a religious song. Its text was written by Eleanor Farjeon, and the tune is the traditional Gaelic melody Bunessan.

O. FRENCH BALL
Hayesville, OH

External Equalizer

In October’s comparison tests of three audio/video receivers, Edward Foster states: “In the Marantz SR-92 and the Pioneer VSX-D901S, each power-amplifier channel is connected individually to its drive preamplifier with a removable jumper. This enables you to add an external speaker equalizer or to replace the internal amplifiers with external power amps.” I don’t understand how you could add an external speaker equalizer through these connections.

JAMES A. ODRO
Brooklyn, NY

You would remove the jumpers between the appropriate preamp-output and power-amp-input jacks on the receiver, then connect the preamp outputs to the inputs of the equalizer and the outputs of the equalizer to the power-amp inputs. Most add-on equalizers are two-channel devices, so if you wanted to equalize all the speakers in a surround-sound system you’d need multiple equalizers. But a few speakers come with equalizers specifically designed for them (the Bose 901, for example), and the jumpered connections on these receivers greatly facilitate using such speakers in combination with others in a multichannel system.

Nils Lofgren

Regarding Parke Puterbaugh’s October review of Nils Lofgren’s latest release, “Crooked Line,” perhaps someone who “can’t get enough.....jangle” is not the person to review this particular artist. Mr. Puterbaugh reviewed four albums in October: four thumbs down. Maybe it’s not Lofgren who needs to “loosen up, lighten up”?

CAL BENTHEIMER
Madison, WI

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.

The Double Chamber Bandpass is made from two bass drivers mounted together. (It’s impressively loud & impressively quiet at the same time).

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ADVENT
Advent is celebrating its twenty-fifth anniversary with a limited-edition update of the original Large Advent, a two-way speaker popular in the 1970's. It features a variation on the original woofer and a modern polyamide tweeter. The walnut-veneer cabinet and grille are like the original's. Price: $590 a pair. Advent, Dept. SR, 25 Tri-State Intl. Office Ctr., Lincolnshire, IL 60069.
* Circle 120 on reader service card

CARVER
Carver's AL-III speaker, 6 feet tall and 14½ inches wide, features carved oak panels flanking its wide-range dipolar ribbon driver, which was adapted from the one used in Carver's original Amazing Loudspeaker. The AL-III also has a 10-inch woofer for frequencies from 200 down to 34 Hz. Price: $1,500 a pair. Carver Corporation, Dept. SR, P. O. Box 1237, Lynnwood, WA 98036.

MAXELL
Maxell's core line of audio cassettes is now packaged for easier selection. Colored symbols indicate normal-bias, high-bias, and metal tapes along with their recommended recording applications. Maxell Corp. of America, Dept. SR, 22-08 Rt. 206, Fair Lawn, NJ 07410.
* Circle 122 on reader service card

MARANTZ
Marantz's CD-11mkII CD player employs the latest generation of Philips Bitstream 1-bit digital-to-analog converters. It can store the user's favorite-track sequences for as many as 195 discs. Price: $2,500. Marantz, Dept. SR, 1150 Feehanville Dr., Mt. Prospect, IL 60056.
* Circle 123 on reader service card
Nothing more to buy...EVER!

Olive Newton-John: Back To Basics (Warner Bros.) 53336
Van Halen: 5150 (Warner Bros.) 25487
Billy Idol: Vital Idol (Warner Bros.) 114620
Kiss: Revenge (MCA) 90177
Jodeci: Forever My Lady (Warner Bros. 164585
Olivia Newton-John: Olivia: Member (Capitol) 07724
Bette Midler: The Rose (A&M) 72386
Motley Crue: Ten Big Hits (MCA) 25425
George Harrison: Best (Choral) 25147
Blue Öyster Cult: Decorative Decadence (Elektra) 34018
Color Me Bad: Bad Boy (Capitol) 25479
Alabama: American Pride (RCA) 20614
Eagles: Greatest Hits, Vol. 2 (Atlantic) 83318
Yes: Classic Yes (Atlantic) 50248
Joe Cockers: Night Calls (Polydor) 04971
The Very Best Of Cream: Strange Brew (Polydor) 04971
A Brick (Chrysalis) 01023
Guth Brooks: No Fences (Capitol) 73266
Starship: Greatest Hits (RCA) 02870
R.E.M.: Out Of Time (Warner Bros.) 24762
Eric B. & Rakim: Don't Sweat The Technique (MCA) 43039
Mr. Big: Lean Into It (Warner Bros.) 24762
Buddy Holly: From The Cradle To The Grave (EMI) 73237
Paul Overstreet: Watch Me (Warner Bros.) 43747
Bryan Adams: Reckless (A&M) 51540
Bing Crosby: Greatest Hits (MCA) 40766
Marty Robbins: Many Rivers To Cross (RCA) 10741
Joe Cocker: With A Little Help From My Friends (Warner Bros.) 20971
Bob James and Earl Klugh: Cool (Warner Bros.) 63299
Jeff Healey: Universal Joint (A&M) 53358
For My Broken Heart (MCA) 27542
Little Village: Greatest Hits, Vol. 1 (Elektra) 53879
Reba McEntire: For My Broken Heart (MCA) 27542
Dana DeVore: All About You (BMG) 73622
Linda Ronstadt: Greatest Hits, Vol. 1 (Elektra) 63906
Kenny G: Live (Warner Bros.) 45480
The Essential Canadian Brass (Philips) 35043

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Shirley Horn: Here's Life (Shirley Horn w/Strings) (Verve) 11354
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Bonnie Rain: Yellowjackets (Atlantic) 53358
Marc Cohn: Walking in Memphis (Atlantic) 83815
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NAKAMICHI
The AV-1 is Nakamichi's first audio/video receiver. It offers Dolby Pro Logic decoding with adjustable surround-channel delay and has 100 watts of power for each main front channel, 50 watts for the center, and 30 watts each for two surround speakers. Price: $1,200. Nakamichi, Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502.

CAMBRIDGE SOUNDWORKS
The PL-100 from Cambridge SoundWorks is a Dolby Pro Logic decoder/amplifier that is being offered both separately and as shown above with the company's Center Channel speaker (right in photo) and a pair of its Surround II speakers. Prices: PL-100 only, $399; PL-100 and three speakers, $750. Cambridge SoundWorks, Dept. SR, 154 California St., Suite 1020, Newton, MA 02158; telephone, 1-800-367-4434.

THE WESTWOOD GROUP
The KM-1 Analog Rainbow interconnect from the Westwood Group is made of solid-core and oxygen-free stranded copper and is "burned in" for 48 hours before shipment. Price: $90 per 3-foot pair. The Westwood Group, Electronics Division, Dept. SR, 1115 Inman Ave., Suite 330, Edison, NJ 08820.

ALTEC LANSING
Altec Lansing's Essentials speaker line includes eight models. Shown here are the Model 115 (foreground, $275 a pair), a two-way bookshelf system; the Model 215 (left, $500 a pair), a three-way system with an 8-inch woofer; the Model 315 (right, $650 a pair), a three-way with a 10-inch woofer; and the Model 515 (rear, $700 a pair), a three-way tower speaker. Altec Lansing, Dept. SR, P.O. Box 277, Millford, PA 18337-0277.
NEW PRODUCTS

\section*{\textbf{INFINITY}}

The SSW-210 (front, with and without end caps) and SSW-212 (rear) powered subwoofers from Infinity feature dual IMG (Injection-Molded Graphite) drivers, 12 inches in the 212 and 10 inches in the 210. Prices: SSW-210, $1,089; SSW-212, $1,598. Infinity Systems, Inc., Dept. SR, 9409 Owensmouth Ave., Chatsworth, CA 91311.

\section*{\textbf{TECHNICS}}

The SE-TX200 from Technics is a six-channel power amplifier for use in home theater systems. It is rated to deliver 70 watts to each channel with less than 0.05 percent distortion. While it can be used in any system, it is designed to complement the Technics SH-TX200 Home THX audio/video controller. Price: $1,200. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

\section*{\textbf{PARADIGM}}

Paradigm’s Monitor series includes five loudspeakers with advanced features such as pure-aluminum tweeters with treated-textile suspensions. Shown at left are the Compact Monitor, $599 a pair; the Export Monitor, $849 a pair; the Esprit, $1,199 a pair; the Eclipse, $1,499 a pair; and the Studio Monitor, $1,899 a pair. Paradigm, distributed by AudioStream, Dept. SR, MPO Box 2410, Niagara Falls, NY 14302.

\section*{\textbf{CAIG LABORATORIES}}

The ProGold conditioners and preservatives from Caig Laboratories are designed to improve the conductivity and protect the surfaces of gold and other metal connectors. The undiluted liquid comes in three sizes (a 2-dram vial is $17). The spray can ($16) has a metered valve. Also shown are wipes ($19) and a pen applicator ($20). Caig Laboratories, Dept. SR, 16744 W. Bernardo Dr., Rancho Bernardo, CA 92127.
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NEW PRODUCTS

NHT
The HDPI surround speaker from NHT combines dipolar radiation in the midrange with a conventional woofer for improved ambience and surround effects. Price: $349 a pair. NHT, Dept. SR, 537 Stone Rd., Bldg. E, Benicia, CA 94510.

FOSGATE AUDIONICS
The Model Four surround-sound processor and audio/video control center from Fosgate Audionics provides Dolby Pro Logic decoding as well as the company’s own surround mode and user-set parameters. It has six audio, four composite-video, and two S-video inputs. Price: $999. Fosgate Audionics, Dept. SR, P.O. Box 70, Heber, UT 84032.

LEBO
Lebo’s Voyager CD case, with a movable divider, can hold up to thirty single or fifteen double CD’s, several CD changer magazines, or a portable player and accessories. The cover has a double zipper and Velcro closure. A removable shoulder strap is included. Price: $38. Lebo, Dept. SR, 33 West St., Bloomfield, NJ 07003-4998.

A/D/S/
The a/d/s SC6 preamplifier ($1,800), matching PH6 six-channel amplifier ($2,200), and CP6 wall-mounted controller keypad ($350) enable users to control multiple sources in different rooms. Additional units can be linked for up to ninety-six different listening zones. a/d/s/, Dept. SR, One Progress Way, Wilmington, MA 01887.

RCA
RCA’s RP-7901 portable CD player, which runs on four AA batteries, comes with a carrying case and an AC adaptor and patch cord for use at home. Price: $150. Thomson Consumer Electronics, Dept. SR, 600 N. Sherman Dr., Indianapolis, IN 46201-2598.
Technics' open-drawer policy is very simple. It enables you to change any four discs while the fifth keeps on playing. And it's standard policy on all our new 5-disc rotary CD changers. So no one ever has to miss a beat. Or wonder why the music stopped.

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Julian Hirsch, after reviewing the Polk S4 in Stereo Review, also invites comparison: “The S4 is an outstanding contender in its class, and it should be heard (you might be surprised by it in a side by side comparison with some much larger and more expensive speakers).”

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THE NEW S & LS SERIES FROM THE SPEAKER SPECIALISTS OF

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*Offer valid on the purchase of any pair of speakers in excess of $259.00.
30 years ago

In an ad in the December 1962 issue, Audio Fidelity Records announced “the most amazing stereo record ever made!” Featuring a string orchestra in the left channel and a jazz band in the right, “Triple Play Stereo” was said to offer “at least three times more musical entertainment than the conventional stereo album.”

Technical Talk: Julian Hirsch tested Fisher’s XP-4A loudspeaker and called it “one of the best, most truly musical reproducers available today,” although “the bass was not the most overpowering I have heard.” He also examined the Weathers Model 66 turntable ($129.50 with tonearm and pickup) and praised its “freedom from acoustic feedback at any level.”

Installation of the Month: Billed as a “comeback for corner horns,” Kalamazoo reader Gordon Loscalzo’s system featured Electro-Voice Georgian speakers with 15-inch woofers, 8-inch midrange drivers, and horn tweeters. The speakers had louvered front panels, “giving them the appearance of traditional corner cupboards.”

Best of the Month: George Jellinek called Dietrich Fischer-Dieskau’s Angel recording of Schubert’s *Die Schöne Müllerin* “perfection itself,” and Nat Hentoff called Miles Davis’s “At Carnegie Hall” [a 1961 concert album not yet reissued on CD] “an important addition to the Davis discography.” Elsewhere, William Flannagan hailed a Robert Craft recording of music by Varèse despite Craft’s “avant-garde snobbery,” and Stanley Green found himself charmed by More Music to Break a Lease By,” a sing-along album featuring office employees of ABC-Paramount Records.

20 Years Ago

Twelve-year-old rock-critic Steve Simels made his first *Stereo Review* appearance with a review of “Full House,” a live album by the J. Geils Band.

Previewing new products for 1973, Associate Technical Editor Ralph Hodges marveled at the Concord-Nakam Studio Z cassette deck, dubbing it “a technological extravaganza of the first magnitude.” He also seemed somewhat awed by Sony’s ST-5555 tuner, with “if my count is correct, one hundred tuning pushbuttons.”

Installation of the Month: Billed as a “comeback for corner horns,” Kalamazoo reader Gordon Loscalzo’s system featured Electro-Voice Georgian speakers with 15-inch woofers, 8-inch midrange drivers, and horn tweeters. The speakers had louvered front panels, “giving them the appearance of traditional corner cupboards.”

The soprano Katia Ricciarelli told our interviewer, Susan Gould, “Please don’t write that I am ‘the new Tebaldi.’” Two pages later, in “Best Recordings of the Month,” an obviously contrary George Jellinek reviewed Ricciarelli’s debut recital disc and declared the twenty-six-year-old diva to be (what else?) “a natural singer in the Tebaldi tradition.”

Those Were the Days: Contributing Editor Lester Trimble weighed in with the latest in *Stereo Review*’s American Composers series—a nine (count ‘em) page appreciation of serious-music icon Elliott Carter.

10 Years Ago

This month’s cover proclaimed, “The Digital Audio Disc Arrives—First U.S. Lab Tests of a Digital Disc Player.” Inside the magazine, Associate Technical Editor David Ranada gave his first impressions of the fledgling CD technology after examining Sony’s CDP-101 and Hitachi’s DA-1000 players. His conclusion: compact disc systems have “the best potential sound quality yet to be offered to the home consumer.”

From our reviewers: Maturing enfant terrible rock critic Steve Simels, writing about Bruce Springsteen’s “Nebraska,” suggested that the song Highway Patrolman could “make a heck of a movie.” [A movie based on it was released in 1992 as *The Indian Runner*, directed by Sean Penn.] Elsewhere in the review section, Eric Salzman was enthusiastic about Georg Solt’s London recording of Berlioz’s *The Damnation of Faust*—“It has chills. Thrills. You’ll laugh. You’ll cry.”—and Mark Peel likened the Swollen Monkeys’ album “After Birth of the Cool” to “crashing a stag party at an asylum for psychotic jazz musicians.”

New products included Symmetry Sound’s Graphic EQ-3 single-channel graphic-equalizer kit and the Sansui P-L50 linear-tracking automatic turntable. In test reports, Julian Hirsch put the Folk SDA-1 Stereo Dimension Array speaker system through its paces, finding that its listening qualities “border on the spectacular.” He also proclaimed the Technics SL-Q30 turntable with P-mount cartridge “a fine product at a reasonable price,” and Craig Stark applauded the Kyocera D-801 cassette deck as “an auspicious beginning for a company we should be seeing more of.”

Decline of the West, Part 2: In an alarming “News Brief,” unwary readers were alerted that the Australian schlub-rockers Air Supply had just tied with the Beatles for the longest string of consecutive Top 5 hits by a debut act.

by Steve Simels
January 15, 1993 Drawing!

It's quick...it's easy. Just send in the attached entry card. At the same time, give a gift of STEREO REVIEW If your name is drawn as one of our lucky winners you'll receive $500...$1,000...or even $5,000 cash. Just in the 'Nick' of time to take care of your holiday shopping or treat yourself to a fabulous winter vacation!

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For the winners' names, send a stamped, self-addressed envelope to Winners List, Circulation Media Department, Room 3413A, Hachette Magazine, Inc., 1633 Broadway, New York, NY 10019. Please allow 30 to 60 days for delivery of the prize. All laws and regulations apply. Void where prohibited or restricted by law. All rights reserved.
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Picture This!
Television and home theater—tenth
in a series on the practical business of
buying audio/video equipment

BY IAN G. MASTERS

Well, it's happened. It's been decades since pundits first began to predict the marriage of audio and video equipment... and just as many pundits pooched the idea. There are still plenty of purists who believe that audio is audio while video is—yuk!—television, but in more and more homes, the two things are being interconnected. The more elaborate combined systems glory in the name "home theater," but where the audio/video system stops and the home theater begins is hard to determine. It may have to do with video-screen size, or projection TV vs. direct-view, or Dolby Surround sound vs. conventional stereo. In any event, there is a continuum of the video experience, with normal TV-watching at the lower end and full-blown home theater at the top. But the considerations in choosing equipment are similar at any level.

One reason the A/V partnership has finally come to pass may have to do with the strides video equipment has made over the past few years. This is particularly true of television sets (or monitors, or monitor/receivers, or display devices—whatever you wish to call them), which at their best have reached a level of quality that squeezes out of the North American NTSC television system almost everything that can be squeezed. The next step has to be a whole new system with a whole new technical level, and the various high-definition television (HDTV) systems are even now jockeying for position, each trying to become the standard.

But HDTV is a fair way off as a consumer product, while extremely fine conventional television sets are here now. In fact, there's such a profusion of them available that making a choice can pose the same sort of challenge as selecting audio components. And that is probably a good thing.

WHAT MATTERS
Because most of us spend a lot of time at home watching television, the things that are important in making a choice tend to be really important. Any faults a TV monitor might have, either in terms of performance or control, can soon drive you nuts.

• SHAPES AND SIZES. At one time, screen size was the only real consideration other than furniture finish, and it's still important. But what matters is not necessarily that the screen be as big as possible, but that it be an appropriate size. A screen that measures a yard from corner to corner (and size is always measured diagonally) is not only going to be overwhelming in a small room, but the scanning lines and inevitable blurred edges will be painfully obvious. By the same token, a tiny screen in a big room will be almost invisible. So before you head out to buy a TV, measure the distance from your viewing position to where the set will go, then look at prospective sets from that distance in the store.

Also consider fitting the set into

ILLUSTRATIONS BY MARK FALLO
your room. Monitors vary quite widely in how much space their cabinets take up, so a particular model might force you to choose a less-than-optimally small screen size to avoid having to look out of some of your furniture. Look around—you can probably do better.

For true home theater applications, a larger screen is preferable, with all its flaws. Cinema standards call for a screen size that fills a horizontal angle of 30 degrees in the field of vision of the most distant viewer. That's something you should try to achieve if you want to get the most from your system, and since most rooms are fairly inflexible as to screen placement, that means picking the right size.

- LINES. Makers of all video equipment are fond of specifying horizontal resolution, which is measured in the number of closely spaced lines a screen can display before they blur together. The higher the number, the greater the potential picture clarity or crispness, so it is definitely important, but bear in mind that no signal you are likely to feed to your set in the near future has much better than 400 lines of resolution. A monitor that boasts a lot more than 400 lines is unlikely to give you much extra visual benefit.

- PUSHING THE BUTTONS. Even a fairly simple audio/video setup is complicated, so the onus is on equipment designers to make it as easy as possible for nontechnical consumers to run their systems. Unfortunately, not all manufacturers seem to realize this, and there are many sets that are extremely difficult to operate. On-screen menus and such do help, as do well-thought-out remote controls, but you won't really know what you're getting unless you try the set out in the store. First, have a look at the owner's manual; if it's gibberish, forget it. If it's clear—or seems to be—try to follow its instructions for some fairly common function, like programming a station into memory or setting the internal clock. If you can do it with relative ease, the set is a good bet.

Also check out any special functions the set has. Most are of little use, but some do come in very handy. A last-channel recall button is wonderful, as it lets you toggle back and forth between two programs without having to enter the channel numbers each time. And an audio mute is useful for commercials or when the phone rings. Beyond that, most bells and whistles simply add to the confusion.

- SOUNDS. Television used to be notorious for its terrible audio, and some of it is still pretty wretched. But more and more programs are well recorded, and a large number of sets out there have audio sections that can do them justice. Unfortunately, there are also many sets that don't measure up, particularly when it comes to things like stereo separation. Unless you plan never to use the set's own audio section, be prepared to do some fairly extensive listening before you make a final decision.

WHAT DOESN'T

Most good TV monitors carry pretty hefty price tags, and many manufacturers seem to feel that they can justify the cost only by adding exotic features and functions that hardly anybody ever uses.

- PICTURE TRICKS. Somebody in a lab somewhere discovered that some neat effects could be designed into TV sets: to exaggerate the color and contrast (mosaic), to produce a jerky, sequential in little boxes on the screen. Everybody tries these out once and then forgets them. If they're free, fine; if not, not.

- MULTIPLE INPUTS. Many monitors enable you to hook up two or three audio/video sources and switch among them. There's nothing really wrong with this, as long as it doesn't add too much to the price, but most people with a system that complicated are likely to control their video sources by means of an external switcher or an A/V receiver, which also facilitates dubbing. Ditto S-video inputs, whose benefits are usually slight. When there are any at all.

- BEYOND STEREO. Above a certain price level you will not be able to avoid stereo sound—nor would you want to, as long as it's well executed. But any other audio effects, such as built-in surround decoding, are usually much better left to external components that are designed to do the job properly.
"Definitive Technology Has Hit the Bull's Eye."

— Julian Hirsch, Stereo Review

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The Lingo

The best favor you can do your video display is to give it the best possible signal. That may mean upgrading your videocassette recorder to Super VHS and adding a laserdisc player, but it can apply to broadcast signals as well. Many “broadcasts” are delivered only by cable, of course, and you will have little control over their quality (although persistently nagging the cable company sometimes helps get dubious signals improved). Local TV stations usually look much cleaner if you receive them directly, however, assuming the signals are strong enough and there are no serious multipath problems. A good antenna can deliver stunningly good pictures to your set; your particular circumstances will dictate whether the antenna should (or can) be roof-mounted and provided with a rotor.

A setup videodisc such as Reference Recordings’ “A Video Standard” will enable you to get the most from the available signals by helping you set up your monitor properly. And the addition of an external audio system—if you don’t start out with one—will enhance your viewing enjoyment considerably. Finally, make sure that your remote control is appropriate. It should be easy for you (and your family) to use, and it should control what you need controlled but not too much more. With home theater systems, having one remote to operate all the components usually simplifies matters. Such a system remote may come with the television set or may have to be bought separately.

Next: Small-scale audio equipment

EXTENT). Front-projection units usually consist of a separate projector, which can be mounted on the floor or ceiling, and a highly reflective curved screen designed to maximize brightness. Front units can also project onto flat screens, although the image is usually darker. Tiny portable TV’s often use flat liquid-crystal displays, or LCD’s, and these are now occasionally showing up as the image element in projection TV’s.

BLACK AND WHITE AND RGB ALL OVER. A television signal is made up of brightness, or luminance, and color, or chrominance, information. The technical abbreviations for these two elements are Y and C, respectively, and sets that have separate connections for the two are said to have Y/C inputs (and, occasionally, outputs). More recently, these have usually been called S-video inputs, and they use a distinctive multipin plug. The S stands for “separate,” although many people assume that the letter is short for Super VHS, the system where it was first used. But Hi8 camcorders and a few laserdisc players now also have S-video outputs. Upscale TV sets designed to be driven by computers have RGB (red, green, blue) inputs too.

DIGITAL. Don’t be fooled! Television today is almost entirely analog, the exceptions being some special effects that may be accomplished digitally, such as picture-in-picture (or PIP), freeze-frame, zoom, and a few others.

AUDI0 FOR VIDEO. While advanced audio/video systems, including virtually all home theater setups, mostly ignore whatever audio features happen to be included in their television sets, many modest systems use some or all of these amenities, at least until a full-blown outboard system can be assembled. Stereo—multichannel television sound, or MTS—is now included even in midprice models, and more upscale versions often include some sort of surround-sound decoding. The simplest decoders use phase manipulation to widen the apparent sound stage, and are thus not true surround circuits. More sophisticated are matrix surround circuits that extract out-of-phase information encoded in many movie soundtracks; if these circuits comply with a particular set of standards, they can be designated Dolby Surround. Sets with matrix or Dolby surround provide rear-channel outputs, and a few contain rear-channel amplifiers to drive the surround speakers directly. Some also let you connect external speakers to the main channels, as do some stereo-only sets. The most advanced form of surround extraction is Dolby Pro Logic, which provides a separate center channel. The most stringent set of standards for home theater equipment is Home THX, which is not a decoding system but rather a set of technical guidelines aimed at making the sound in the home as close as possible to what a movie sounds like in a well-equipped theater.
Definitive Technology's Award Winning C1 Center/Main and BP2 Bipolar Satellite/Surround Speakers

Enthusiasts and world renowned experts acknowledge the dramatic sonic superiority of Definitive loudspeakers for both the superb reproduction of music and the dramatic special effects and dialogue of home theatre surround sound.

**C1: World's Finest Center Channel Speaker**

Optimum surround sound reproduction places heavy demands on the center channel speaker which in effect is the main speaker and handles 50% or more of the program material. It is no place to settle for second best. Definitive's C1 is the finest shielded, low profile, high resolution center channel/main speaker available. It uses superior state-of-the-art components and technology for extraordinary ultra high definition articulate clarity and 200 watt power handling.

**The BP2's Bipolar Advantage**

The BP2s are unique ultra compact high resolution bipolar (front and rear radiating) systems intended primarily for use on the rear/side surround channels of the finest home theatre systems. Experts agree that bipolars provide a perfectly diffuse sound source which is ideal for these applications. The use of BP2s results in a much more lifelike, dramatic all-enveloping listening experience than is possible with conventional speakers. In addition, because of their superb performance characteristics, the BP2s also make exceptional main channel speakers.
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In 1979, Mitsubishi introduced the world’s first one-piece big screen projection TV. Since then, we haven’t been able to take our eyes off of it.

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In short, a big screen TV with a picture as impressive as its pedigree.

Take the VS-50VF2 displayed on the left. Like the rest of our 1992 line of big screen televisions, its predecessors include not only the aforementioned world’s-first-one-piece projection TV, but also the world’s first 50”, 60”, 70”, and 120” screens. As well as the first slim cabinet big screens ever to be offered to the viewing public.

Blue blood, indeed.

Of course, for those more interested in technology than genealogy, rest assured our latest models continue to offer innovations you won’t find in any other big screen.

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The final result is a family of big screens whose picture quality rivals even our best direct-view TV’s.

So even if you just sat there for the rest of your life watching every movie from Annie Hall to Ziegfeld Girl, it would be a very rewarding life indeed.
Excess Sibilants

Q I have a powerful system consisting of a 200-watt-per-channel amplifier driving high-output speakers with 102-108 sensitivity. For tone correction, I have a thirty-band equalizer, but even when I use it I am plagued by unpleasant hiss when vocalists sing Cs or Ss. If I cut the top frequencies to fix that, I lose the cymbals. Since I've heard the same thing at live concerts, I wonder if playing my music loud is causing the problem. If not, is there a simple cure?

A I doubt that loudness itself is the cause, but you can easily check it out: Play something softly—c'mon now, just this once—and note whether the effect is still there. If it is, then the cause is elsewhere.

The problem may stem, indirectly, from your speakers' ability to play loud, even if you don't always use it. Some designers are prepared to live with anomalies in their speakers' sound in the interest of very high output. Taming response errors often involves some sacrifice in sensitivity, so the more such errors that are left alone, the better a speaker may be able to really belt out the decibels. Your speakers may have spectral peaks or resonances that tend to emphasize the frequencies of spoken sibilants.

These effects might be correctable by careful adjustment of your equalizer, especially as it offers very narrow bands of adjustment. But simply cutting everything above a certain frequency is unlikely to do the trick. Experiment to discover which single band has the most effect on sibilants and play with that until you achieve a pleasant balance; some slight adjustment in adjacent bands might be required as well. Don't expect miracles, however: If the problem is a complex one—occurring only in the off-axis response but contributing to the overall sound field, for instance—you may not be able to do anything about it short of replacing the speakers.

Dolby On or Off

Q I have read that when copying a tape you shouldn't bypass the noise-reduction dec/encode cycle but should be sure to decode the original noise reduction before rerecording the material. I'm not sure about the exact procedure. When I make dubs now, I leave the noise reduction switched on in both tape decks. Is that wrong?

A No, that's the proper way to do it. It might seem that if the original is encoded and you want the copy to be encoded, going through the decoding/re-encoding process would only degrade the sound, and that a copy should be made "straight" with as little manipulation as possible. That would be true if you could be absolutely certain that your recorders and tapes matched perfectly in terms of level. A perfect match is rare, however, so since the Dolby systems are very sensitive to level, it is far better to decode the original, feed the flat signal to the second recorder, and re-encode it. That way you're vulnerable only to slight misalignments in each machine rather than a massive mismatch overall.

Speaker Outputs

Q My amplifier has two pairs of speaker outputs, and I have been wondering what would happen if I connected them together. Would it double the output?

A No. Extra outputs are provided on many receivers and amplifiers as a convenience, but they are simply connected together inside the box. Duplicating the connection at the terminals themselves would serve no useful purpose.

Muffled Tapes

Q The two transport mechanisms in my dubbing cassette deck have very different performance. Everything is fine when I record on Deck A from an external source, and even when I dub to Deck A from Deck B the results are acceptable, though Deck B has somewhat worse response than A with prerecorded tapes. But if a tape made on Deck A is played back on B, the treble is cut dramatically, giving me a very muffled sound. Is my recorder defective?

A Not defective, but probably out of alignment. I'd say that Deck B definitely has an azimuth problem: The head gap is not quite perpendicular to the direction of tape travel, which means that it reads a particular bit of audio information at slightly different times from one edge of the recorded track to the other. At low frequencies this doesn't matter very much, but in the treble, where the wavelengths are very short, severe high-frequency rolloff occurs. The amount of attenuation depends on how far out of whack the gap is; small azimuth errors may not be noticeable.

From what you say, the heads in both your transports are probably out of alignment, but in opposite directions, with Deck A not very far out. In such a situation, external signals that are both recorded and played back on Deck A would sound fine (there's perfect azimuth alignment between record and playback because the same head is used). Prerecorded tapes would sound okay on Deck A because that head is only a bit out of true, and not too bad on B, but noticeably more muffled because of the greater misalignment. Tapes recorded on Deck B but played back on A would combine the errors of both decks and sound horrible.

Professional servicing is required, but I suggest that if you have a large collection of tapes that were recorded on Deck A, leave that mechanism alone and realign only the heads in Deck B.

Shielding Speakers

Q My speakers are about ten years old but still sound great, so I would like to use them as the front speakers in my home theater setup. Is there any simple way to shield them properly so their powerful magnets won't disrupt the picture on my video monitor?

A Sheets of 12-gauge cold-rolled steel affixed to the sides of the speakers nearest the monitor will effectively prevent the magnets from deflecting the electron beams inside it. But before you go to that trouble, you should determine whether you actually need any shielding.

If your setup is a fairly conventional one, with the main speakers 8 to 10 feet apart and the monitor in between, shielding is probably unnecessary because of the distance: Magnetic fields decay sharply as you move away from them. Depending on the amount of magnetism radiated by the speakers and the monitor's sensitivity to them—and both factors vary widely from one model to another—you may be able to place the speakers as close as 1 foot away from the monitor without problems. Alternatively, since virtually all the magnetic force radiates from the speaker's sides, rather than the front or back, angling them so that their magnetic fields are strongest behind the monitor might avoid disruption (moving the set forward would do the same thing). The only way to be sure is to move the speakers around and see what they do to the picture in different positions.

As you try out the various options it may appear that the color impurities induced in the TV set have become more or less permanent, but turning modern sets off and on a few times will usually demagnetize them totally, although with some you'll have to wait a few hours before the residual magnetism disappears completely. A more subtle problem is the gradual magnetization of the TV set or monitor's chassis over time, which may take months to have any visual effect. If that happens, demagnetizing by a professional will probably be required.

If you have a question about hi-fi, send it to Q&A, Stereo Review, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.
If it's less conductive and harder to work with, why do we use flat aluminum wire in every 901 speaker driver?

Remember the first time you heard a compact disc? How other recordings paled in comparison?

Much of the excitement you felt for that recording came from its broad dynamic range – the ratio of the loudest passages to the softest. Reproducing that range is the mission of the Bose® 901® system.

But, besides handling up to 106 dB of dynamic range, the 901 system is also very efficient. So it uses as little as 20 watts of power to re-create the most powerful music. A feat made possible by the combination of many technologies. Like those we use to wrap flat, aluminum wire around the bobbin of each driver to form a voice coil.

Now, wrapping wire on a bobbin may not seem very technical. But at Bose, it's a science. In fact, we not only invented Helical Voice Coils (HVC), we invented the machinery to make them. And we make all of them ourselves.

Which brings us to why we use flat, aluminum wire – even though it is difficult to wind and doesn't conduct electricity as well as copper. We use it because what it lacks in convenience it makes up for in performance. In a voice coil, air spaces steal power. But, because flat wire winds tighter, our coil has less air. And because aluminum has lower inductance, it enables the driver to deliver more high end frequencies.

Which means the 901 system comes closer to reproducing the broad dynamic range heard in a live performance – and in digital compact discs.

The Bose 901 Direct/Reflecting Speaker System

The 901 speaker system is the best sounding speaker Bose makes. And the most highly acclaimed speaker in the world, regardless of size or price.

Why? Because it sounds so much like a live performance, where you hear mostly reflected sound. Conventional speakers produce mostly direct sound, so they cannot achieve the realism of a live performance.

Bose Direct/Reflecting® speaker technology delivers a balance of reflected and direct sound. Combined with other proprietary technologies (such as active equalization, an Acoustic Matrix enclosure, and HVC drivers), this gives you sound very much like that of a live performance.

But nothing is as convincing as hearing the 901 yourself. Listen to it at your Bose dealer. Then, to hear what the 901 can really do, take a pair home.

To read more about the Bose 901, ask for an informative brochure, and names of Bose dealers near you. Call toll free:

1-800-444-BOSE, Ext. 199

Engineered to be the closest you can get to the sound of a live performance without leaving home.
EVOLUT ANALOG COMPACT CASSETTE 1965

INTRODUCING THE WORLD'S FIRST DIGITAL

DCT-2000 DIGITAL COMPACT CASSETTE TAPE DECK
Now enjoy the best of both worlds.

With the new Optimus® DCT-2000 you can record and play true digital audio on convenient Digital Compact Cassettes... and play your existing library of analog cassettes, too. Make perfect copies of your CDs—indistinguishable from originals—plus superb recordings from sources such as LPs and analog tapes.

The DCT-2000 incorporates the best in audio technology. 64-times oversampling. Fiber-optic, coaxial and analog inputs. Even a unique display that shows titles and performers' names on prerecorded DCC tapes. All the result of American—yes, American—craftsmanship.

Join the Revolution.
The only reason not to buy an Onkyo Pro Logic Receiver is if you're into antiques.

The World's First Full Digital Dolby Pro Logic Receiver

Onkyo's new Integra TX-SV909PRO offers home theater performance so advanced, other receivers are destined for some unhappy endings.

The TX-SV909PRO is the world's first receiver to feature a full digital Dolby Pro Logic surround decoder. The technical benefits are significant: improved signal-to-noise ratio, lower distortion and greater separation. To your ear this means Dolby surround sound that is identical to a first class theater, with pinpoint imaging of all dialog, music and sound effects.

The TX-SV909PRO is also the world's first receiver to incorporate the acclaimed Ambisonic Surround Sound System, which is to music what Dolby Pro Logic is to movies. The Ambisonic process recreates a 360° soundstage, with a seamless, natural transition from the front to rear speakers. Ambisonic recordings (such as those on the Nimbus label) played back through the decoder on the TX-SV909PRO deliver a sense of musical time and space that is more lifelike than anything you've ever heard.

The high technology found in the TX-SV909PRO can only be achieved by Onkyo's dedication to uncompromised engineering. That's why the TX-SV909PRO features 7 Discrete Power Amplifier Sections and 3 Independent Heavy-Duty Power Transformers. True Multiple Room/Multiple Source capability is assured via this 7 channel design as well - you can have full 5 channel Pro Logic in your home theater/media room while someone in the bedroom listens to a CD in stereo.

In addition to the TX-SV909PRO, Onkyo offers an entire family of advanced Pro Logic Receivers. Which means if you're looking for unequalled home theater performance, Onkyo is really the only choice you have.

Unless you're into antiques.
The current worldwide renaissance in jazz is partly due to the activities of a number of small labels. They kept the beat going even in lean times by presenting new technology as well as new trends and new talent. One of these dedicated small jazz labels is DMP, and the editors of STEREO REVIEW are quite pleased that DMP has prepared the latest sampler in our series of special CD offers designed to help our readers expand their musical horizons at minimal cost.

The sampler DMP is offering exclusively to STEREO REVIEW readers contains ten tracks by the principal jazz artists on the company's roster with a playing time of more than fifty minutes. To get your copy all you have to do is fill out the coupon below and send it in with a check or money order (made out to Allegro Imports) for $4, which covers postage and handling.

DMP (which stands for Digital Music Products) is celebrating its tenth anniversary this year. Founded in 1982, the company was among the first to issue compact discs, and its founder, Tom Jung, prides himself on keeping DMP in the vanguard of digital technology. What Jung hopes to provide on every DMP CD is a fresh and different brand of jazz that sounds as close to live music as is possible in a recording.

The company says it is the first jazz label to use 20-bit digital recording technology, which permits its engineers to work above the threshold of the CD's full capacity. According to Jung, DMP's use of the Yamaha DMR8 20-bit recorder interfacing with custom-made Wadia analog-to-digital converters produces far greater musical accuracy than can be achieved with conventional 16-bit technology and creates a compact disc with less low-level distortion and with the widest possible dynamic range.

The company has acquired the reputation of an "audiophile label," technology is only a means to an end for Jung. "The music is the most important thing," he says. "My goal, through audiophile techniques, is to make the technology disappear, to make the listeners so unaware of the production process that they focus only on the music."

Performers who have been prominent in DMP's catalog of fifty-two CD's include the guitarist Chuck Loeb, the saxophonist Bob Mintzer, the pianist Warren Bernhardt, and the piano-sax duo of Dial and Oatts. All are represented in the sampler, along with the Dolphins, Jay Anderson, the Robert Hohner Percussion Ensemble, the Vivino Brothers, David Charles & David Friedman, and the Bob Smith Band.

Although they may not be big names, Tom Jung says these artists have "big-name talent." Overall, their music represents the positive, upbeat, good-time strain of jazz without the aggressiveness that sometimes irritates newcomers to this kind of music.

Jazz is a distinctly American product, whose origins go back to the bars and bordellos of New Orleans and other cities along the Mississippi River. Once the popular music of an oppressed urban people, it has now achieved almost classic status. Whether you are already a jazz connoisseur or an explorer looking for new horizons, we urge you to order the DMP sampler. Be a part of the jazz renaissance!

DMP'S 20-BIT ALL-DIGITAL JAZZ COLLECTION

For STEREO REVIEW readers only

Send coupon and check or money order for $4 (covers postage and handling) made payable to Allegro Imports to:
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ADDRESS __________________________

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WE HOPE YOU’LL LIKE
OUR NEW CHESTERFIELD FILTERS
AS MUCH AS WE DO.

Full Flavor King Size: 16 mg. “tar,” 1.6 mg. nicotine; Lights King Size:
11 mg. “tar,” 1.2 mg. nicotine, av. per cigarette by FTC method.

SURGEON GENERAL’S WARNING: Smoking
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Slow to burn. Sure to satisfy.
Audio Mythology

In its relatively brief existence, the world of high fidelity has seen the appearance (and, eventually, the disappearance) of many fads and odd beliefs, most of which could not be justified on any scientific basis or even by blind listening tests. I prefer to consider many such ideas as myths, which I would define as fictional half-truths. Even when an audio "myth" might have some validity, the subtle and subjective nature of the claimed effect often makes it difficult, if not impossible, to prove or disprove. For instance, there is the matter of "burning in" an amplifier or another electronic component by operating it continuously for many hours or days. This is said to improve the sound, usually in vaguely described ways that are not susceptible to proof. I have never seen a reasonable or believable explanation of why that should be so, nor have I ever heard any demonstration that it is so. But, given the totally subjective character of amplifier "sound" (which I consider to be largely a myth, and in any case a very minor term in the high-fidelity equation), I am not surprised. You have to be a true believer in order to experience a mythological event.

Similar, but with considerably more plausibility, is the claim that extended breaking-in of loudspeakers, by operating them at a moderate or higher volume for days, will bring their sonic performance to the ultimate of which they're capable. I can imagine that cone suspensions, voice-coil spiders, and the like could undergo a change in their physical properties during such a procedure, and such changes could very slightly affect the magnitude, frequency, or "Q" (bandwidth) of the mechanical resonance of a cone-type driver. And theoretically, I suppose, such effects could make a subtle change in the speaker's sound. But I am afraid my perceptions are not quite that subtle. I will have to grant the possibility that some people can hear these effects, but I think their significance is greatly overstated.

Probably the most widely known fad is the use of special speaker cables, which are highly touted for their wondrous effects on the sound. Some of these cables are very well made, and I use them for speaker tests because they are very convenient for snaking across the floor without tangling. But affect the sound? Hardly.

The only function of a speaker cable is to conduct the output of an amplifier to the speaker terminals. Its resistance should be low enough to avoid significant power loss in the transmission, which is unlikely to occur within the confines of a normal home installation with copper wire of reasonable gauge. The capacitance between the cable conductors should not be excessive—it could cause some amplifiers to become unstable. But that is really a fault of the amplifier, not the cable or speaker, and it is a relatively rare problem these days. Like capacitance and resistance, the inductance of a cable is a function of its physical geometry, and it is unlikely to cause any problems.

So what is special about those sometimes unbelievably expensive speaker cables (they can cost hundreds of dollars a foot)? They offer a wide variety of wire-weaving configurations, exotic materials, and, mostly, the sense that having paid a healthy sum for them, you must hear wondrous improvements in the sound of your music system.

That is pure, highest-grade snake oil. At audio frequencies, with the kind of cable lengths typically found in the home, the only meaningful electrical parameter of a cable is its resistance. The only likely effect is a minute (undetectable) loss of power delivered to the speakers and some reduction of damping factor. There is no reason why a cable would have excessive capacitance in the lengths found in the home; if it does, you are using the wrong cable. Ordinary parallel-conductor wire is perfectly satisfactory. The conductors (the wires themselves) should be at least 18 gauge in size for short lengths (10 to 15 feet), and it doesn't hurt to use thicker wire (lower gauge number). A 14-gauge cable is normally more than adequate for lengths of 30 to 50 feet or more.

Special cables for interconnection within the system, usually fitted with phono plugs, also have no effect whatever on the sound under normal conditions. Some interconnects are fitted with deluxe plugs that may make a better and longer-lasting contact with the socket, but the few deluxe interconnects I have used over the years have often been unwieldy because of their thickness and, sad to say, actually less reliable than the inexpensive cables furnished with most audio components.

When we come to the really "way out" fads in audio, we are dealing with outright fantasy or fraud. I would not dignify such aberrations as placing heavy bricks on top of a cabinet, applying green ink or Armor-All to compact discs, and so forth with the term "myth." They claim to cure flaws in system components that have not been shown to exist—or even that have been proven not to exist. Use your own good sense in dealing with this category of mysticism.
Turn Your Stereo Into An All-Out Dolby Surround Pro-Logic System.

NEW FROM CAMBRIDGE SOUNDWORKS

Our new PL100 Dolby Pro Logic decoder with 3-channel amplifier; magnetically shielded Center Channel speaker; The Surround II dipole radiating surround speakers. Factory-direct price, $799

Until now, adding Dolby Surround to a stereo system has been complex and expensive. Add-on decoders were inadequate, costly, and often required separate amplifiers. We've changed all that with our affordable, high performance Pro Logic Add-On Systems.

Both systems are centered around our new PL100—a Dolby Pro Logic decoder with three channels of amplification (40 watts to the center channel, 15 watts to the surround channels) and a wireless remote. Its built-in signal generator enables precise balancing of the left, center, right and surround speakers. The signal delay applied to the surround channel is selectable for room size. Other controls include master volume, rear

$799 Dolby Pro Logic Add-On System.

The center channel speaker in our $799 Dolby Pro Logic Add-On System is our new magnetically shielded Center Channel (see ad on following page). The rear/side speakers are a pair of The Surround II. Unlike any other surround speaker in its price range, The Surround II uses advanced dipole radiator technology. Properly mounted on the side walls of a listening room, their high frequency drivers direct out-of-phase sound signals towards the front and rear of the room. The sound then reflects off the surfaces in the room, finally reaching listeners from all directions.

Because the drivers are out of phase with each other, they create a null area directly in front of the speakers, so listeners can't pinpoint the source of the sound. The result is surround sound the way it was meant to be heard.

$999 Dolby Pro Logic Add-On System.

Our $999 Dolby Pro Logic Add-On System combines the PL100 with our new low-profile Center Channel Plus speaker and our highly acclaimed surround speaker, The Surround. Center Channel Plus is a magnetically shielded speaker with four 3" long-throw woofers and a ring radiator tweeter. Because of its wide, low profile (25" wide, 4" high, 6 1/2" deep), it is ideal for placement directly on top of, or, with optional support unit, beneath a TV. The frequency range of the outer pair of 3" woofers is intentionally limited to maintain proper dispersion. We don't know of any speaker, at any price, that outperforms Center Channel Plus.

The surround speakers in this system are The Surround, a dipole radiating speaker with higher volume level capability than The Surround II. We feel The Surround is one of the very best surround speakers made, despite the fact that it costs hundreds less than competing models. So if you already own a fine stereo system, TV and VCR, why not create an all-out home theater with one of our Dolby Pro Logic Add-On Systems?

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CIRCLE NO. 6 ON READER SERVICE CARD
TEST REPORTS

Optimus DCT-2000 DCC Recorder
KEN C. POHLMANN
HAMMER LABORATORIES

The Texas-built Optimus DCT-2000 is the second Digital Compact Cassette recorder to hit the bench at Hammer Laboratories, just weeks after the Philips DCC900. It may surprise some readers to see Radio Shack on the leading edge of DCC technology, but Tandy Corporation, its parent company, was the first hardware manufacturer to join Philips on the DCC bandwagon, so it makes perfect sense that Radio Shack's Optimus recorder is among the first on the market.

But even as an early entrant, the DCT-2000 has a clean appearance and no-nonsense construction that suggest thorough engineering. Clearly, the Tandy designers focused on streamlined function rather than cosmetic frills. Still, DCC technology is almost thirty years beyond the analog cassette, so even a modest DCC recorder such as this one boasts some high-powered features, not to mention high-quality sonics.

The DCT-2000's front panel is concise indeed. Nevertheless, all the primary transport controls are at hand, with six large buttons for drawer open/close, record, pause, tape direction, play, and stop. Underneath are six smaller buttons, including fast-forward, rewind, and forward and backward track-skip. A reverse-mode button enables you to select single-side, dual-side, or continuous-autoreverse operation. And a recording-mute button inserts a 4-second blank on the tape (or a longer one if you hold the button down)—useful for separating tracks or editing a false start. You'll also find a headphone jack, headphone level control, and power switch.

Lesser controls are hidden behind a flip-down panel. A slide switch selects analog, coaxial digital, or optical digital input, while another selects Dolby B or C noise reduction (or no noise reduction) for playback of analog cassettes. There is a knob to adjust the analog input level, another for channel balance during recording, and no fewer than eight buttons dedicated to the manipulation of ID markers, which are cueing signals written to a DCC tape's subcode track to help in locating specific points on a recording. When the Auto-ID button is engaged, the deck automatically writes a start marker at the beginning of the tape, track numbers at the beginnings of selections, a tape-reverse marker at the end of a side, and a start marker at the beginning of the next tape side. Using six different write and erase buttons, you can add, delete, or edit a tape's start, reverse, and skip markers. (A skip marker tells the transport to fast-wind

Dimensions
17¼ inches wide, 5½ inches high,
12 inches deep
Price
$700
Manufacturer
Tandy Corp., Dept. SR, 700 One Tandy Center, Fort Worth, TX 76102
NEW FROM CAMBRIDGE SOUNDWORKS

Our new Center Channel and Center Channel Plus speakers are magnetically shielded, so they won't cause video interference, even when placed very near a TV screen.

Our New Center Channel Speakers Deliver Optimum Pro Logic Performance At Factory-Direct Prices.

We're pleased to announce two new speakers designed by Henry Kloss specifically for use as center channel speakers in Dolby Surround Pro Logic systems—the Center Channel and Center Channel Plus. Our experience with Dolby Surround Pro Logic systems has shown that the center channel is very important. A significant portion of movie soundtracks is directed to the center channel. It's very important to use a speaker that reproduces that material accurately, with the proper volume level and dispersion pattern.

Center Channel by Henry Kloss.

Center Channel is a compact, two-way acoustic suspension speaker with a 4" woofer and a ring radiator tweeter. Because of its compact size (8½" x 3½" x 4"), it's simple to place Center Channel directly on top of or below your TV screen, so that dialog and sound effects will seem to emanate from their on-screen source.

Center Channel is well shielded magnetically so that it can be placed very close to your TV without causing video interference. Acoustically identical to our Ensemble satellite speakers, it's ideal for center channel use in a Pro Logic system. The factory-direct price of Center Channel is $149.

Center Channel Plus by Henry Kloss.

The Center Channel Plus is a larger speaker recommended for achieving theater-like playback levels in the most sophisticated and powerful home theater systems. It uses four 3" long-throw woofers and a tweeter that perfectly matches the acoustics of our Ensemble and Ensemble II systems. The frequency range of the outer pair of 3" woofers is intentionally limited to maintain proper dispersion characteristics.

Because of its wide, low profile (25" wide, 4" high, 6½" deep), Center Channel Plus is ideal for placement directly on top of or uniquely for a product of its type, beneath a TV—with optional support unit, it can act as a base for your TV. We don't know of any speaker, at any price, that outperforms Center Channel Plus. The factory-direct price of Center Channel Plus is $219.

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### MEASUREMENTS

Record/playback measurements were made through the analog inputs, playback measurements at the analog outputs. Measurements listed are for the worse of the two channels.

<table>
<thead>
<tr>
<th>Distortion (THD + N at 1,000 Hz)</th>
<th>1.11%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise-to-signal ratio</td>
<td>0.0067%</td>
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</tbody>
</table>

### DIGITAL PLAYBACK

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>+0.06, -0 dB, 16 to 20,000 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel separation</td>
<td>1,000 Hz: 75.6 dB, 10,000 Hz: 76.5 dB</td>
</tr>
<tr>
<td>Signal-to-noise ratio</td>
<td>A-weighted: 113.5 dB, unweighted: 108.6 dB</td>
</tr>
<tr>
<td>Distortion (THD + N at 1,000 Hz)</td>
<td>0.0032%</td>
</tr>
<tr>
<td>Linearity error (at -90 dB)</td>
<td>+0.4 dB</td>
</tr>
</tbody>
</table>

### DIGITAL RECORD/PLAYBACK

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>+0.04, -0 dB, 16 to 20,000 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel separation</td>
<td>1,000 Hz: 69.6 dB, 10,000 Hz: 50.4 dB</td>
</tr>
<tr>
<td>Signal-to-noise ratio</td>
<td>A-weighted: 93.1 dB, unweighted: 90.1 dB</td>
</tr>
<tr>
<td>Distortion (THD + N at 1,000 Hz)</td>
<td>0.0067%</td>
</tr>
<tr>
<td>Linearity error (at -90 dB)</td>
<td>+0.6 dB</td>
</tr>
</tbody>
</table>

### ANALOG PLAYBACK

<table>
<thead>
<tr>
<th>Frequency response</th>
<th>+0.8, -4.1 dB, 32 to 18,000 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel separation</td>
<td>1,000 Hz: 37.6 dB, 10,000 Hz: 36.2 dB</td>
</tr>
<tr>
<td>Dolby B (unweighted)</td>
<td>65.9 dB</td>
</tr>
<tr>
<td>Dolby C (unweighted)</td>
<td>67.6 dB</td>
</tr>
<tr>
<td>Distortion (THD + N at 1,000 Hz)</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

### ANALOG RECORD/PLAYBACK

Dolby C (unweighted) 65.9 dB
Dolby B (unweighted) 62.6 dB
Dolby A (unweighted) 54.0 dB

### TEST REPORTS

The supplied wireless remote is very compact (and consequently easy to lose between the cushions of your sofa). Its twelve buttons duplicate the front-panel play, pause, stop, direction, track-skip, fast-wind, record, record-mute, display-mode, and text buttons.

The DCT-2000's back panel sports the expected complement of connectors. Four phono jacks provide line-level analog input and output, while two more jacks provide 75-ohm coaxial digital input and output using the standard multiplexed SPDIF interface. Two Toslink connectors permit digital input and output through fiber-optic cables. The digital inputs can be used to make direct digital recordings from a CD, DAT, or DCC player with digital outputs, eliminating a signal-degrading cycle of digital-to-analog (D/A) and analog-to-digital (A/D) conversion. (The Serial Copy Management System, or SCMS, will prevent the resulting tape copies from being copied again digitally, however.) Finally, the DCT-2000 has a rear-panel switch to turn its wireless remote-control circuit on and off.

A look inside the DCT-2000 revealed a main printed-circuit board with two plug-in cards, a power-supply board, and a front-panel board. The primary chip set consists of eight Philips DCC, A/D, and D/A chips, along with a Motorola microprocessor. Although the layout is tidy, there are several very long wiring harnesses that should have been trimmed to proper length instead of being coiled up and tied back. The tape transport is housed in a plastic chassis, but the inner mechanism surrounding the reversible tape head is made of metal. Overall, the DCT-2000 is not a technological work of art but a good piece of utilitarian engineering.

The deck performed very well in both digital and analog modes. Digital playback, for example, was extremely CD-like, with almost perfectly flat frequency response, high signal-to-noise ratio, wide (though not extraordinary) channel separation, very low distortion, and outstanding low-level linearity. The digital record/playback measurements, using an analog input signal, were almost as good, which is remarkable considering the A/D converter and other electronics added to the chain. The main differences were a reduction in signal-to-noise ratio, a doubling of the distortion (to a still inconsequential 0.0067 percent), and a surprisingly tiny 0.2-dB increase in low-level nonlinearity (to a total error of 0.6 dB)—a tribute, perhaps, to the quality of the Philips Bitstream 1-bit A/D and D/A converters. All in all, it's a superb set of measurements.

Analog playback performance was, as one would expect, clearly inferior to the digital performance and about on a par with that of a good mid-line analog cassette deck. Frequency response was ragged at the low end, with
The Powered Subwoofer That Has The Audio And Video Press Jumping Out Of Their Seats.

A jet roaring in *Top Gun*. The heavy-footed killer robot in *Robocop*. A semi hitting concrete after a 20 foot fall in *Terminator 2*. These are examples of the substantial, very low-frequency effects on the soundtracks of today's movies. Such frequencies are rare in music, and are beyond the capabilities of most speakers designed for music.

The new Cambridge SoundWorks Powered Subwoofer by Henry Kloss was created to reproduce those ultra-low, ultra-strong bass signals with the power and impact you would experience in movie theaters with the very best sound systems. It's designed to supplement (not replace) the subwoofer(s) of Ensemble or Ensemble II. It will also work with speakers from other companies.

Remarkable bass performance.

The Powered Subwoofer consists of a heavy-duty, 12 inch long-throw acoustic suspension woofer integrated with a 140 watt amplifier—all in a high-pressure black laminate cabinet. Its control panel includes a bass level control and an 18 dB per octave, four-position electronic crossover frequency selector (to match the subwoofer to your other speakers).

Additionally, an optional electronic crossover* will provide 18 dB per octave, high-pass, line-level filters for the main and center amplifiers. These filters allow you to keep strong, low frequencies of sound effects out of the front speakers. These signals can cause distortion, even in speakers designed for full-range music.

The Powered Subwoofer's bass performance is simply awesome. It reproduces accurate bass to below 30 Hz. You'll hear soundtracks the way they were meant to be heard. In fact the bass is better than most theaters! At the press event when we introduced our Powered Subwoofer, we had startled members of the audio and video press literally "jumping out of their seats" during demonstrations of movie soundtracks. The factory-direct price of the Powered Subwoofer is $599.

Optional "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. Amplifier output jumps from 140 to 200 watts when the Slave Subwoofer is connected.

The combination of the two speakers can reproduce a 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, and the most demanding listeners. The factory-direct price of the Slave Subwoofer is $299.

No compromises. No apologies.

The combination of our Ensemble speaker system, Center Channel Plus speaker, The Surround rear/side speakers, Powered Subwoofer and Slave Subwoofer (see photo at left) creates a home theater speaker system that we believe is the best of its kind.

Although you can spend thousands more on competing systems, we don't know of any that outperform this $1,999 package. If you'd like more information, a free catalog or our new booklet, "Getting The Most From Your Dolby Surround System," call our toll-free number any time.

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Cambridge SoundWorks changed the audio world when we began direct-marketing Ensemble® by Henry Kloss. Ensemble is a revolutionary dual-subwoofer/satellite speaker system offering all-out performance, without cluttering up your room with huge speaker cabinets. Available only factory-direct from Cambridge SoundWorks, with no expensive middle-men, Ensemble is priced at hundreds less than it would have sold for in stores. Audio magazine says Ensemble "may be the best value in the world."

And Then There Were Two.
Now Cambridge SoundWorks has introduced Ensemble II, a more affordable version of Ensemble using only one cabinet to hold both subwoofer drivers. Ensemble II has joined Ensemble in the ranks of the country's best-selling speakers. We believe Ensemble II is a better system than the new Bose® AM-5 Series II. And because we sell it factory-direct, it's half the price. Stereo Review said "Ensemble II performs so far beyond its price and size that it can be compared only with much larger speakers at substantially higher prices." We agree with the writer who said, "It's hard to imagine going wrong with Ensemble." The question is, which Ensemble system is right for you?

The Critics Love Ensemble And Ensemble II. What's The Difference, Anyway?

The Same Satellite Speakers.
When you listen to either Ensemble system, almost 90% of the music you hear is being reproduced by the satellite speakers. Both Ensemble and Ensemble II use satellite speakers that are virtually identical. Unlike many competing systems, Ensemble's satellites are true two-way speaker systems, each containing a high performance tweeter and a 4-inch woofer. Stereo Review said, "The Ensemble satellites delivered a smoother output than..."
many larger and more expensive speakers." Small (8¾" x 5¼" x 4") and unobtrusive, they'll fit into the decor of any room. They're available in scratch-resistant gunmetal grey Nextel, or primed so you can paint them any color you wish.

**The Same Overall Sound.**

In many rooms, Ensemble II sounds virtually the same as Ensemble, especially when Ensemble's two subwoofers are placed right next to each other. The real difference between the two systems is that Ensemble, with its two ultra-compact subwoofers (12" x 21" x 4½"), gives you ultimate placement flexibility.

**The Same Attention To Detail.**

Ensemble and Ensemble II are constructed with the very best materials and no-compromise workmanship. Their subwoofers use heavy-duty woofers in true acoustic suspension enclosures. The satellites are genuine two-way systems with very high quality speaker components. Individual crossover networks are built into every cabinet for maximum wiring flexibility. Robust construction is used throughout, featuring solid MDF cabinets and solid metal grilles.

**The Same Factory-Direct Savings.**

Cambridge SoundWorks products are available only factory-direct. By eliminating the middle-men, we're able to sell Ensemble and Ensemble II for hundreds less than if they were sold in stores.

**The Same 30-Day Total Satisfaction Guarantee.**

Choosing a loudspeaker after a brief listen at a dealer's showroom is like deciding on a car after one quick trip around the block. So we make it possible to audition our speakers the right way—in your own home. You get to listen for hours without a salesman hovering nearby. If within 30 days you're not happy, return your speaker system for a full refund. We even reimburse original UPS ground shipping charges in the continental United States.

Ensemble satellite speakers are available primed for painting, so they can match your decor exactly.

**The Real Difference: The Ultimate Placement Flexibility Of Dual Subwoofers.**

Placement of bass and high-frequency speakers in a room—and how these speakers interact with the acoustics of the room—has more influence on the overall sound quality of a stereo system than just about anything. As an alternative to spending hundreds (or thousands) of dollars on this or that "latest" amplifier or CD player design, you should invest some of your time experimenting with various speaker positioning schemes. Ensemble's two ultra-slim (4½") subwoofers give you more placement flexibility than any speaker system we know of (including Ensemble II), and is most likely to provide the performance you want in real world...in your room.

**How To Order.**

The dual-subwoofer Ensemble system is available in two versions. With handsome black-laminate subwoofers for $599. Or with black vinyl-clad subwoofers for $499. Ensemble II is priced at $399. For more information, a free 48-page catalog, or to order...

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**STEREO REVIEW**

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

**STEREO REVIEW**

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CIRCLE NO. 6 ON READER SERVICE CARD

Mechanical checks and measurements showed that the deck's fast-wind time was reasonable, and though speed error and wow-and-flutter in analog playback were on the high side, we would rate the transport's overall performance as acceptable. We hope later models show some improvement in these categories, however. In digital playback, speed error and wow-and-flutter were below the resolution of our Audio Precision test system.

Although the DCT-2000's measured performance in digital mode was reassuring, we cannot infer as much from the measurements about the deck's sound quality as we could in the case of a CD player or DAT deck. The reason is that the DCC format is built around a perceptual-coding system known as PASC (for Precision Adaptive Sub-band Coding), which is designed to record signals in a way tailored to how we actually hear. For example, sounds that are too soft to be heard or that would be masked by louder sounds at nearby frequencies are not recorded at all, freeing up space on the tape for more accurate recording of the sounds that are audible. How successful the system is at distinguishing between what will be audible and what won't be is something that can be determined only by careful, controlled listening. That, in fact, is how PASC was tested during development.

To evaluate the DCT-2000's sonic performance, I inserted it in a high-quality audio system including an excellent CD player, the Marantz CD-11mkII, as the sonic reference. I digitally recorded several CD's onto the DCT-2000, then compared the taped copies with the originals. The analog output signals were carefully matched in level and switched with an ABX blind-comparator box, which enabled me to compare the entire playback signal chains, including the D/A converters and analog output stages of the CD player and DCC deck.

I listened to a wide variety of music but focused on classical music because its wide dynamic range is useful for exposing both high- and low-level
distortion, as well as the noise floor (most pop music is useless for these purposes, though usually better for dancing). After many hours of critical listening, I concluded that with most music I could not reliably hear any difference between the original CD and the DCC copy. With one recording, however, of solo harpsichord, I was able to identify the players successfully about 80 percent of the time, indicating that a very slight difference did exist. On the other hand, I had no preference for one over the other; there was just a barely distinguishable difference.

Whether the difference I heard in that one case resulted from an artifact of the PASC system or from something more mundane, such as a small frequency-response discrepancy between the D/A converters or output stages of the two machines (a very common cause of subtle sonic differences between components), is impossible to tell without a more thorough investigation. It was, in any event, a very, very minor effect. The deck's playback of analog cassettes was good, but not as good as that of high-end analog-only cassette decks.

I had a number of reservations about the mechanical operation of the deck. For example, it did not anticipate the shortest distance to a selected track on the opposite side of the tape: It would fast-forward to the end of the tape, then reverse and fast-wind to the desired track, regardless of where it was located in relation to the starting point of the search. That entirely defeats what is supposed to be one of DCC's benefits—smart track search.

When we selected a new DCC track during playback, the display showed how many tracks we skipped beyond the current one instead of the actual track numbers. For example, if you're playing Track 10 and then select Track 15 with the track-skip button, while the deck searches for the new track the display will show "1,2,3,4,5" instead of "11,12,13,14,15." This is very annoying: The machine should be doing the mental arithmetic, not the user. Even worse, when you're playing an analog cassette, you can skip only one track at a time.

The DCT-2000 took about 10 seconds to close its drawer, load a DCC tape, check the contents, and start playback—a rather tiresome wait for anyone accustomed to CD or analog cassette. Moreover, during the checking process there was brief low-level audio output, which should have been muted. I was also bothered by all the loud, low-tech solenoid clicking that went on during the loading process. As with other DCC decks I've seen, the DCT-2000's mechanical performance simply doesn't do justice to its sound quality.

On the plus side, the DCT-2000 did not exhibit any of the head-clogging with analog cassettes that we ran into with the Philips DCC900 reviewed last month. I ran many hours of analog and digital tapes through the machine without observing any dropouts or increase in errors. Preproduction units, such as the DCC900 sample we tested, often exhibit operational quirks that vanish in production models, like the DCT-2000 reviewed here, and we now suspect that the problems we encountered with the Philips deck were a fluke.

Overall, the Optimus DCT-2000 is very mature for a first-generation product. The Tandy engineers did their homework and have brought forth a very competitive recorder. Given the high state of competition from CD, DAT, and analog cassette recorders, this is quite an accomplishment. In particular, the sonic performance of the PASC system is remarkable and points to a not-so-distant time when perceptual encoding will outperform linear coding and become the norm. And the DCT-2000, along with its fellow DCC decks, does something that approaches magic in our format—a month age of incompatibility: It accepts both analog and digital tape. That is DCC's greatest strength, and it is a remarkable one.
PSB 400 Loudspeaker System

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

The PSB 400 is one of a new series of speakers from the Canadian designer Paul Barton. One of Barton's goals was to provide as much as possible of the essential quality of the PSB Stratus speakers, widely recognized for their uncolored, musical sound, in relatively small, inexpensive speakers.

The PSB 400 is a compact two-way system with a 6½-inch polypropylene-cone woofer operating in a vented enclosure. A ¾-inch soft-dome tweeter radiates the higher frequencies. No specifications were provided in the installation-instruction booklet, which deals only with general considerations, but the Model 400 appears to use the same drivers as the even smaller PSB Alpha.

The all-black cabinet is 16 inches high, and each speaker weighs 17½ pounds. The tweeter is recessed slightly, and its rim flares out to make a smooth transition with the speaker panel. The woofer basket is also mounted flush with the panel. A removable black cloth grille is retained by plastic snaps.

The connecting terminals are multi-way binding posts on ¾-inch centers, recessed into the rear of the cabinet. They are compatible with single or dual banana plugs as well as wire ends.

We placed the PSB 400 speakers on the optional 27-inch-high PSB stands, approximately 9 feet apart and 2 feet in front of a wall, for our room measurements and listening tests. The room-response curve, averaged for both speakers at a single microphone location, sloped downward slightly above 500 Hz but varied only ±3 dB from 300 to 20,000 Hz.

The close-miked woofer response (including the contribution of the port) reached its maximum at 100 Hz, sloping downward at 6 dB per octave below 80 Hz and more gradually above 100 Hz. The composite response curve, which agreed fairly well with the sound quality of the speakers, indicated a smooth, gradual downward slope from 100 Hz to at least 5,000 Hz, with a more uniform average output from 5,000 to 20,000 Hz.

Response measurements at 1 meter on the tweeter's axis, with a swept one-third-octave band of pink noise, indicated a remarkably uniform output, varying only ±2 dB from 50 to 20,000 Hz and falling off precipitously at lower frequencies. That was generally consistent with what we heard from the speakers.

Other measurements, made with a variety of quasi-anechoic techniques, showed a rough agreement with the earlier measurements. Some of the peaks and dips in the measured response occurred at the same places in all the measurements, but others did not necessarily coincide.

One fact was evident from all our data. Whatever the method of mea-
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measurement, the response of the PSB 400 was strikingly smooth, with a typical output uniformity of ±2 dB from a few hundred hertz to 20,000 Hz (at lower frequencies there is unavoidable and frequently unpredictable interaction with the room boundaries).

The use of a ¾-inch tweeter not only contributes to the system's extended high-frequency response but gives it better angular dispersion over its full frequency range. At 45 degrees off the tweeter's axis, the output dropped only 3 dB at 10,000 Hz and 8 dB at 20,000 Hz. Phase linearity in the tweeter's range was also excellent, with a total group-delay variation of less than 100 microseconds from about 4,000 Hz to 20,000 Hz and about 200 microseconds at 2,000 Hz (close to the probable crossover frequency).

Impedance was a minimum of 4.5 ohms at 170 and 40 Hz and a maximum of about 17.5 ohms at 68 and 1,900 Hz. Since the impedance fell below 6 ohms over much of the lower midrange, we would rate the system at 5 to 6 ohms. Sensitivity, with an input of 2.83 volts of pink noise, was 87 dB sound-pressure level (SPL) at 1 meter. With 4 volts drive (corresponding to a 90-dB SPL), the woofer distortion was comfortably low, ranging between 0.6 and 1 percent over most of the frequency range from 80 to 2,000 Hz. It rose to 2 percent in the range of 45 to 60 Hz. The lower frequency limit of the PSB 400 could be rated at 45 to 50 Hz, which is very good performance for a single 6½-inch woofer in a small cabinet.

The power-handling ability of these small drivers was surprisingly high. At 10,000 Hz, the tweeter had no difficulties coping with the 735-watt clipping-level output of our amplifier, and at 1,000 Hz the woofer cone handled 500-watt single-cycle bursts without complaint. Not surprisingly, a 100-Hz burst at 190 watts drove the woofer cone to its limits, with an audible rasp.

It would appear that Paul Barton has achieved his goal in the Model 400. Although we did not compare it directly with one of the PSB Stratus systems, we would hardly expect it to match their qualities. Nonetheless, it managed to sound like much more of a speaker than its dimensions, weight, and price would suggest. Both the quality and quantity of sound it can generate belie its appearance, and we have no doubt that if it were hidden it would be able to deceive many listeners into thinking they were hearing a far larger speaker.

But that is really beside the point. The PSB 400 is a musical speaker, unlikely to offend the sensibilities of the most critical listener. It is also not going to cause financial hardship, nor mar the decor of any room that is likely to be devoted to a music system. It is an excellent example of what can be done with a modest budget and enclosure size in the current state of the loudspeaker art.

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Polk Audio LS-70
Loudspeaker System

JULIAN HIRSCH
HIRSCH - HOUCK LABORATORIES

The LS-70 is one of a new series of floor-standing tower speakers from Polk Audio. Like the Polk S4 bookshelf speaker we reviewed in September, the LS-70 features newly designed drivers and construction techniques intended to improve response smoothness and minimize diffraction from the speaker's enclosure boundaries.

Like most other Polk speakers, the LS-70 is a two-way system. It uses two 7½-inch woofers located about halfway up the front panel. Above them is a 1-inch dome tweeter, and the port of the vented enclosure is near the bottom of the panel. Although this is not an unusual driver configuration, the drivers were designed specifically for these speakers and differ in several respects from earlier drivers made by Polk or anyone else.

The woofers are larger than those in most other Polk speakers. Their injection-molded cones contain Aramid fibers, said to result in lower mass with no reduction in stiffness. The rubber surrounds extend beyond the cone edges in order to make smooth transitions to the wooden speaker board. The central dust caps are also made of soft, flexible rubber. Finally, the woofers feature low-resonance baskets, vented voice coils, and newly designed high-performance magnet structures.

Stacking the woofers one above the other controls their vertical dispersion, minimizing floor and ceiling reflections in the critical midrange. Polk found, however, that this configuration also produced comb-filtering effects (response irregularities) in the critical listening range between 1,500 Hz and the crossover to the tweeter at 3,200 Hz. The problem was solved by using an additional crossover filter that reduces the output of the bottom woofer by 6 dB at 1,500 Hz, so that the system's behavior at higher frequencies is that of a conventional two-way system, while retaining the advantages of two woofers at lower frequencies.

The tweeter features a trilaminate dome made of polyamide, aluminum, and stainless steel. According to Polk, this layered construction produces the smooth response of a soft-dome tweeter along with the clarity and precision of a metal dome. The tweeter's faceplate is also shaped for optimum efficiency and dispersion to provide a more accurate stereo image.

The LS-70's enclosure is slightly tapered, and the black cloth grille is removable. Each speaker weighs about 50 pounds. Two pairs of gold-plated input terminals are inset into the bottom of the rear panel. They are normally joined by jumpers, which can be removed for biwiring or biamplifying the system. The connectors accept single or dual banana plugs, lugs, or stripped wire ends.

In our lab tests, the averaged room response of the two Polk LS-70 speakers was relatively smooth and free...
from the boundary-reflection effects that appear in most such measurements, varying only ±4 dB from 100 to 20,000 Hz. The close-miked response of the woofers from 20 to 500 Hz combined with the room curve to produce a composite frequency response of ±5 dB from 42 to 20,000 Hz. Including the port radiation, the bass extended down to 20 Hz within the same limits, but under actual listening conditions the effective bass extension will depend on the speakers' environment. In our room, the audible response was clean and usable down to about 35 to 40 Hz.

Measurements with a swept one-third-octave pink-noise signal showed a response variation of ±2.5 dB from 40 to 20,000 Hz. A quasi-anechoic (MLS) frequency-response measurement was within ±3.5 dB over its valid range of 300 to 20,000 Hz. Polk rates the LS-70's response as 3 dB down at 37 and 25,000 Hz. Although we did not test beyond the audible range, these figures are consistent with our results.

Impedance measured a minimum of 4 ohms at about 150 Hz, rising to 15 or 16 ohms at 60 and 1,500 Hz. Polk says the speaker is "compatible with 8-ohm outputs," and it is, but we would rate its nominal impedance at 4 to 6 ohms.

Sensitivity with a 2.83-volt input measured 91 dB sound-pressure level (SPL) at 1 meter (the rating is 90 dB). With 2.52 volts input, equivalent to a 90-db SPL, the woofer distortion varied between 0.5 and 2 percent between 42 and 2,000 Hz, reaching 9 to 10 percent between 20 and 30 Hz. The group delay in the tweeter's operating range was constant within ±150 microseconds.

At 1,000 and 10,000 Hz, the LS-70 easily absorbed the maximum output of our driving amplifier with a single-cycle tone burst, reaching 600 watts at 1,000 Hz and 1,065 watts at 10,000 Hz. At 100 Hz, the woofer sound gradually took on a sharp, rapping quality as the power was increased beyond a few hundred watts. We stopped at 555 watts, though we hadn't yet reached the physical limits of the drivers.

The tweeter's horizontal dispersion was typical of a good 1-inch dome radiator, with the output 45 degrees off-axis down 2 dB from the on-axis readings at 5,000 Hz, −6 dB at 10,000 Hz, and −9 dB at 20,000 Hz.

Quite apart from the LS-70's measurements, which indicate that it is a very fine speaker, how did it sound? In a word, superb. Its spatial imaging, both lateral and vertical, was outstanding. Imaging tests using the Chesky JD-37 disc produced what was probably the most accurate localization we have yet experienced from a pair of speakers playing that CD. There was a completely unambiguous placement of the sound in accordance with its announced position. Many speakers do a reasonably good job in this test, but the LS-70's put the sound exactly where it belonged.

Another interesting property of the LS-70 was that it sounded natural and listenable even at a distance of only a foot or so. Although stereo imaging is lost when you listen that close, the quality remained as unified and balanced at 1 foot from the speaker as at 10 feet (this quality is not typical of most loudspeakers we have used).

And that sound quality, under more normal listening conditions, was notable for its smoothness and balance. There was occasionally a slight tendency toward warmth, but the flatness of the overall response generally prevented the bass from dominating the system's sound. Nevertheless, when the program material called for it, the LS-70 put out a quantity (and quality) of bass that belied its modest price.

In its price range, where a number of good speakers are available, the Polk LS-70 is an exceptional value. You would have to pay a lot more to gain (maybe) a small improvement in overall quality. Like its smaller relative, the S4, the LS-70 dramatically demonstrates the success of Polk's engineering effort to create a line of speakers embodying the latest technology in materials and acoustics.

The Polk Audio LS-70 speaker's spatial imaging, both lateral and vertical, was outstanding.

STEREO REVIEW DECEMBER 1992 57
Hafler Model 9300
Power Amplifier

JULIAN HIRSCH
HIRSCH-HOUCK LABORATORIES

The Hafler Model 9300, a basic stereo power amplifier, is rated to deliver 150 watts per channel into 8-ohm loads with less than 0.03 percent total harmonic distortion (THD) from 20 to 20,000 Hz. Its 4-ohm rating is 225 watts into 4 ohms.

The front panel contains only a rocker-type power switch with a green pilot light. The heat-sink fins for the output transistors extend out from the sides of the chassis and wrap around the back.

The rear panel is almost as simple, with heavy-duty gold-plated multiway binding posts for the speaker outputs (the two hot terminals are used for bridged operation) and gold-plated phono-type input jacks. The heavy-duty power cord plugs into a recessed socket on the rear. There is also a rear mono/stereo pushbutton switch that converts the left- and right-channel amplifiers into one bridged mono amplifier rated at 450 watts into a single 8-ohm load.

The Hafler 9300 features the company's patented TransNova (trans-conductance nodal voltage amplifier) circuit, which employs grounded-source MOSFET output transistors that are said to provide a considerable voltage gain compared with conventional transistor output stages. Hafler says the advantages of this design include wide bandwidth with low distortion and noise. The MOSFET output transistors (six per channel) are also immune to thermal runaway, eliminating the need for protective circuits to guard the output devices against destruction from excessive current.

The massive power transformer has three separate secondaries for the two output stages and the low-level portions of the amplifier. A useful feature is the Soft Turn On/Off system, which monitors the regulated low-voltage power supply. When the amplifier is turned on, its circuits are disabled until the system determines that voltages are normal; then it activates the amplifier through a small MOSFET switch in its input stage. When the amplifier is switched off, the system rapidly cuts off the amplifier circuits before the power-supply voltages begin to collapse. The result is a complete elimination of thumps and noises from the speakers when the amplifier is turned on or off.

The Hafler 9300 is a compact, solidly built amplifier with ½-inch-thick, removable mounting feet. The case is extensively perforated with ventilating slits and, like the heat sinks and front panel, is finished in black. An optional rack-mount version has a silver-finish 19-inch front panel slotted for an EIA-standard rack or installation in a cabinet. The amplifier weighs 36 pounds.

During preconditioning at one-third rated power for an hour, the Hafler 9300 became quite warm, though not too hot to touch. In later listening tests we found that it ran nearly as hot as it did during bench testing, suggesting that its operating conditions may have been closer to true Class A (in which the power dissipated in the amplifier is relatively independent of signal level) than to Class B.

The amplifier exceeded its continuous power ratings by a substantial margin and was able to deliver almost 400 watts into 4 ohms in the dynamic power test. Noise was very low, and frequency response was almost perfectly flat across the audio band, dropping off by less than half a decibel at 100 kHz and 2 dB at 200 kHz.

Overall, the Hafler 9300's measured performance was as close to ideal as we have seen in some time. Most amplifiers using Class AB output-
Stage biasing showed a steady increase in distortion at low levels as power is reduced (especially below 1 watt). The Hafler amp’s distortion, however, was not only low at any level short of clipping but was still decreasing as the power dropped below 1 watt, where it had already fallen to 0.0025 percent into 8 ohms and 0.004 percent into 4 ohms. This may or may not have any relationship to the Model 9300’s sound quality, but it is certainly evidence of careful and thorough circuit design.

The exterior of the amplifier presented a finished appearance, with no sharp corners on the panel or heat sinks. The same thoroughness was apparent in the owner’s manual, which included not only complete electrical and mechanical specifications, drawings of the front and rear panels, and useful suggestions on installation and operation, but also a parts list, a drawing of the main circuit board with part-number ID’s, an electrical schematic diagram, and a functional block diagram.

The manual, one of the most complete and businesslike we have seen for a power amplifier (or any other consumer product, for that matter), is consistent with the performance, workmanship, and attractive design of the Hafler 9300. Clearly, it is a class act, especially among amplifiers in its price range.

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"No visible speakers, no stack of components, nothing that looks like sound equipment...Hit the start button and suddenly the room fills with music of exemplary clarity and fullness."

AudioSource SS 3001
Surround-Sound System

BY DAVID R ANADA

For someone just getting started in assembling a home theater system, the selection of components can be a daunting prospect. The extreme solution is to retire much of your present audio system and replace it with a set of components specifically designed with home theater in mind. The various THX-licensed and one-brand systems fall into this all-or-nothing category. A less costly alternative is simply to add components that bridge the gap between the stereo system you have already and a full-fledged surround-sound system. Those components usually include a surround-sound decoder, a center-channel "dialogue" speaker to be placed near the video screen, two surround-channel speakers for ambience and sound effects, a subwoofer for those earth-shaking explosions so popular in today's movies, and enough amplifiers to drive the additional speakers.

In an admirable attempt to simplify the process of upgrading, AudioSource offers the SS 3001 system, which includes its latest Dolby Pro Logic surround-sound decoder, the SS Three/II, and three loudspeakers of the kind you'll probably need to approach full surround performance, all for $580. The speakers are a VS One for the center channel and a pair of LS Ten/A surround speakers. The SS Three/II decoder itself contains small power amplifiers (rated at 30 watts "peak") suitable for driving these speakers, so the only thing missing for a complete setup is a subwoofer and its associated amplifier. The decoder, which can also be purchased separately ($400), does provide a line-level subwoofer output (with a crossover frequency switchable between 80 and 150 Hz) suitable for driving an external amplifier or a powered subwoofer.

The decoder's circuitry is based on a single complex Analog Devices integrated circuit. Although some of AudioSource's literature on the product might be misinterpreted as indicating that the Dolby Pro Logic decoding in the SS Three is performed digitally, the Analog Devices chip is an analog Pro Logic circuit boasting unusually wide dynamic range. Along with the channel-steering "logic" circuits used for enhancing apparent channel separation and for locking the dialogue into the center channel, it carries the circuitry for some of the SS Three's most useful features. Among these is an auto-balance system able to correct up to 4 dB of interchannel-balance error, which would otherwise cause the sound-steering circuits to direct some signals to the wrong outputs. Another feature built into the chip is the Dolby 3 Stereo mode of operation, which turns off the output to the surround speakers and distributes their signals into the three front channels. This is useful if you don't have surround speakers, but of course they're included in the SS 3001 system. The chip also contains a test-signal generator used during setup to balance the speakers.

Aside from Dolby Pro Logic surround and Dolby 3 Stereo, the SS Three has two operating modes suitable for broadcast or recorded material that is not surround-encoded. The Hall mode creates a concert-hall ambience, and the Matrix mode synthesizes pseudo-stereo sound from mono signals. These modes make use of what appears to be the same delay circuit that is otherwise employed for the 20-millisecond surround-channel delay mandatory in Dolby Surround decoders. The delay can be set for either 20 or 30 milliseconds in the Hall or Matrix modes. And if you don't have a center-channel speaker, the decoder can be switched to generate a phantom center image from the front left and right speakers.

Operating modes are selected either by front-panel pushbuttons (which light up when activated, a very nice touch) or via the supplied infrared remote control. In addition to these switches and one for a tape-monitor loop, the front panel contains a useful bar-graph display indicating either the relative volume settings or relative signal levels in the four decoded channels (left, center, right, and surround). The latter mode is extremely useful for checking whether you should be hearing anything out of the surround speakers. It's very rare that there are high-level surround signals.
Additional front-panel features include rocker switches to adjust volume in the main (left and right front), center, and surround channels, an input-level knob to optimize the SS Three's dynamic range, and a power switch. The power-indicator light glows green when the unit is off and red when it is on.

On the rear panel are phono jacks for the optional line-level center-channel and surround outputs, a tape-monitor loop, the main inputs, the main outputs (front left and right), and the line-level subwoofer output with its level adjustment. Push-type speaker terminals are provided for the center and surround speakers.

The speakers supplied in the SS 3001 package are rather simple. The VS One center-channel speaker is magnetically shielded, which is appropriate for a unit that should be placed as close as possible to the center of the screen in a home theater system. Stray magnetic fields can disturb the color and picture geometry of a television screen. The VS One is a vented system containing two 4-inch cone woofers and a 1-inch dome tweeter with ferrofluid cooling. Its crossover frequency is 5,000 Hz.

The LS Ten/A surround speakers each have a 4-inch paper-cone woofer crossing over at 5,000 Hz to a 2½-inch cone tweeter. They seem to be sealed systems. All three speakers are finished in black vinyl over particle board. Stick-on felt pads are provided for shelf mounting, and the surround speakers also come with wall-mounting brackets. As on the decoder, the terminals are push-type connectors.

The remote control uses two AA batteries and duplicates all the front-panel controls except the input-level knob. It is well laid out with one exception: The eight mode-switching pushbuttons are arrayed in a different order from that on the front panel. This can be a minor but continuing annoyance for anyone who operates such controls by position and feel rather than by rereading the labels.

That, I'm pleased to say, is my only complaint about the SS Three, which struck me as a very nice performer. Its Pro Logic steering action seemed right on the money with all the surround-encoded movies I tried. Noise and distortion were very low—just about

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NOTHING BUT THE MUSIC

Paul Barton, a concert violinist, and world-renowned speaker designer and founder of PSB, is a firm believer in natural sound. He shudders at speakers that color musicians' notes. Shown here, the PSB 300, 500 and 800 are part of an affordable priced line of high-performance speakers which allow you to listen to the music naturally - as it was intended to be heard.

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The End
as low, I'd say, as the noise and distortion from costly all-digital Dolby Pro Logic decoders.

The Matrix and Hall modes were useful for playing music unaccompanied by video. The Hall mode added spaciousness to natural-ambience acoustic music (folk or classical) and did not add too much echo to popular material. The Matrix setting worked well enough except that it tended to add a comb-filter effect, or “recirculated” tone quality, to some music. Its “stereo” effect from mono signals was subtle; the Hall setting was equally effective in this function.

The bar-graph display was quite useful in setting and evaluating speaker levels, although it sometimes took quite a few pushes of the volume buttons to move the indicators one notch. Volume changes were accompanied by low-level thumps, but these were not very disturbing. There were no turn-on or turn-off transients.

I was, however, disappointed with the sound quality of the supplied AudioSource speakers. Although it would be better to use them than nothing at all, neither the center-channel VS One nor the surround-channel LS Ten/A impressed me as fully adequate for their tasks. In a full Dolby Pro Logic surround-sound installation, the center-channel speaker is arguably the most important of all. Most of the sound you will hear from a movie soundtrack will emerge from it, so it should be at least as good as your main left and right speakers. And while surround speakers only occasionally have to play loud, when they do you’re going to want at least a little bass response out of them, which cannot be supplied by the 4-inch woofers of the LS Ten/A’s, even if you place them in corners.

So while the $580 price of the SS 3001 system is less than you’d pay if you bought separates, I’d still recommend buying the SS Three/II decoder separately (it’s a “best buy” even at $400) and spending a little more on auxiliary speakers of your own choice. There are many suitable models, and you could run them directly from the decoder’s speaker outputs, though you might want to use a heftier amplifier for the center channel than the SS Three/II provides. Upgrading an existing system for surround sound may still be a daunting task, but you’ll be halfway there with the AudioSource SS Three/II decoder.

AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.
For over eighty years Denon has *lived* the definition of high fidelity—producing sound faithful to the original. Whether recording and pressing records or Compact Discs, making the world's first commercial digital recording; building professional recording and broadcast equipment or producing the CD Players ranked Number One in Consumer Satisfaction (Verity Research, 1991) the Denon name has been synonymous with high fidelity.

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Three systems on three budgets—experts pick their own dream teams

SPECIALTY audio/video dealers probably see more stereo components than anyone else. They are constantly reviewing their stores' product mixes, talking with manufacturers' reps about new lines, learning features and benefits of new models, and dealing with repair headaches. They know audio/video equipment. So we wondered what they would buy for their own listening rooms. We asked three prominent members of the Professional Audio/Video Retailers Association to come up with a "dream system" for a total of $1,500, $3,000, or $4,500. Here's what they said they would buy on the budgets we gave them, along with some upgrade recommendations.
Pure, sweet music for $1,500

It's not easy to find gold in a $1,500 audio system, but Fred Montgomery, the owner of Chelsea Audio/Video in Beaverton, Oregon, says that the system he chose for us is 24 karat. You won't find any bells or whistles here, he says, just pure, sweet music that will wow anyone who hears it.

When customers enter Chelsea Audio/Video, the salespeople ask about their musical tastes, the size of their listening rooms, and how loud they like to listen. Montgomery designed this system for someone who likes vocals, jazz, classical, opera, r & b, or soft rock. "It will do magic on anything with voice," he says. "It creates a three-dimensional sound stage that on some recordings will be downright spooky because the music seems to come from space, not from the speakers." He says the bass response will be natural, not exaggerated or boomy.

At the heart of the system is an NAD Model 705 receiver. Its Power Envelope design will deliver high dynamic power when needed, and according to Montgomery it also provides "good clean sound" at its modest 40 watts-per-channel rated output. The primary music source for the system is a Yamaha CDX-560 CD player. To prevent any kind of distortion from mechanical noise or vibration, he would use a set of Allsop Navcom isolation pucks on the bottom of the CD player.

Montgomery chose Magnepan's entry-level SMGa planar-magnetic loudspeakers for their smooth handling of middle frequencies. "With planar speakers you hear music like you've never heard it," he says. "Slam-dunk piston box speakers can't do for the midrange and voice what they can."

To determine the best placement of the speakers, Montgomery would begin 30 inches from the rear and side walls. The dipole speakers would be cramped if placed too close to the wall, he says. Then the speakers must be tuned to the room by moving them 12 inches one way or the other until the "sweet spot" is found. Montgomery says he'd use a small piece of tape to mark each speaker's floor position so that, if it has to be moved for any reason, it can be easily returned to the right location. He also chose Signet MLA 14-gauge speaker cable and a pair of MIT PC2 interconnects from the CD player to the receiver.

"With this $1,500 system we've thrown convenience and features to the wind," Montgomery points out. "There's no CD changer, no remote control, but it's a real system. What comes out is hard to beat. For the money, this is the best-sounding combination we could come up with."

Still, Montgomery says, he'd be itching to upgrade in a few months. He'd add a solid, no-gimmick single-well cassette deck—the NAD Model 6325 ($279), which offers "the stuff you need to make a good recording—Dolby B, C, and HX Pro." There's no autoreverse. "It's convenient, but it affects the sound," he explains.

He would also move up to Magnepan's MG.5QR speakers ($995 a pair) to get "tighter, more authoritative bass" without losing "the magic of the midrange." The upgrade wouldn't cost too much if the original system were bought at his store. Chelsea customers can trade in their original speakers within a year for full credit toward an upgrade costing roughly twice as much.

$1,500 SYSTEM
Chelsea Audio/Video, Beaverton, Oregon

- Magnepan SMGa speakers ($575 a pair)
- NAD Model 705 receiver ($499)
- Yamaha CDX-560 CD player ($249)
- Signet MLA speaker wire (25 feet for $23)
- MIT PC2 interconnects ($50 a pair)
- Allsop Navcom Isolation pucks ($20 a set)
HERE'S nothing wrong with a little convenience as long as you don't compromise sound quality, according to David Young, owner of The Sound Room in Chesterfield, Missouri. After all, you don't want to have to work hard in your dreams.

We gave Young a budget of $3,000 for his dream system. With that kind of money, he went the separates route for a "higher level of performance" than he could get out of a receiver-based setup. He chose as his control center the Hafler Model 945 tuner/preamplifier with remote control. Its partner is the Hafler Model 9180 105-watt-per-channel amplifier, which can easily be run in bridged mode with a twin to provide double the power.

Young felt that convenience would compromise performance if he chose a CD changer, so he picked the Yamaha CDX-660 single-disc player, which he describes as "better sounding than most without getting ridiculous."

A dual-well cassette deck was out of the question, but Young did select an autoreverse deck, the Sony TC-RX79ES. It provides "good features for accurate recording," he says. Among those features are Dolby B, C, and HX Pro, user-adjustable bias, and laser-amorphous heads, which he says wear longer and have better recording and playback properties than other kinds of heads.

"Dual-well tape decks are popular," Young points out, "but this is a system chosen for performance. The Sony deck offers good performance and the most asked-for convenience features, remote control and autoreverse." And its autoreverse function is "quick-acting," he adds. "You can record straight through with only a fraction of a second's delay for reverse."

Flexibility is also a key aspect of Young's system. He likes to crank up his music every now and then, so he wanted to leave open the possibility of adding more power. He chose the KEF Q90 speakers with this in mind since they can be biamplified when supplemental power is needed.

The KEF tower speakers produce very accurate sound and can hit a "pretty high sound-pressure level," he says from experience. "If you want to go for it, with the Hafler [amp] you have enough power to do it. You can get pretty good levels." He would position the speakers in his room about 6 inches from the front wall and 2 feet in from the side walls, forming an equilateral triangle with his listening position. "If I'm sitting 10 feet back, the speakers should be about 10 feet apart," he says.

Despite Young's desire to have the potential for wall-pounding sound-pressure levels, he listens most often to fusion at moderate levels. Pat Metheny, Lee Ritenour, and Dave and Don Grusin sound just as they should on the KEF's, he says. "They reproduce the sound accurately and without coloration, especially on acoustic instruments. They sound very lifelike."

Young's $3,000 system would impress anybody, he says. "It has lots of components that are solidly built," and the system's value is increased by the seven-year warranty on Hafler products and the full three-year warranty on the Sony cassette deck.

Like most audiophiles, however, Young can't leave well enough alone. As funds allow, he would add another Hafler Model 9180 power amp to give himself a healthy 210 watts a channel. He'd also add a Velodyne Servo 1200 powered subwoofer ($1,095) to handle the lowest bass octaves so the KEF's don't have to work so hard.
LEXIBILITY is a major selling point at Absolute Sound in Winter Park, Florida. Owner Charles O'Meara thinks that audio/video equipment should be able to accommodate future technology as well as the changing needs of the owner.

His $4,500 dream system was designed with maximum flexibility in mind, especially in terms of future growth. "This A/V system performs well with music as well as video sources," he says.

O'Meara chose as the centerpiece the Carver CT-17 remote-controlled tuner/pre-amplifier. It incorporates Carver's enhanced Dolby Pro Logic surround-sound decoder, which O'Meara says works well with all A/V sources. It also has separate play and record source selectors, enabling a user to assign one set of record-out jacks to a remote zone, where the volume can be adjusted by an independent control.

For the main front left and right channels, O'Meara chose the Carver TFM-15, a 100-watt-per-channel power amplifier, for "reliability, value, and sound quality." Besides driving the main speakers to the levels required for dynamic realism, he says, the TFM-15 looks very high-tech with its large, circular level meters.

Flexibility was also a governing factor behind the choice of the NAD Model 906 power amplifier, which can be configured for either three, four, five, or six output channels, to power the center and surround speakers in O'Meara's setup. In its three-channel mode, the NAD 906 delivers up to 90 watts to each channel. If O'Meara decides to add another room and speakers later on, he will switch the amp to five-channel mode, in which it can deliver 90 watts to the center speaker and 30 watts each to the surround and remote speakers.

The Model 906 has separate inputs and level controls for each channel so that users can balance it for any combination of source and speakers.

The system's primary source component is the NAD Model 505 carousel CD changer. O'Meara says that extensive research and development went into its digital-to-analog converters, and the result is a "wonderfully musical" sound. The transport, he says, "glides like butta."

O'Meara chose Definitive Technology speakers all the way around. For the front left and right, the bipolar BP-10's give a spatial image that's larger than life, he says. "Extremely musical and very emotional, these speakers are quite fast and can reproduce the demanding dynamics of Bela Fleck, Bela Bartók, or Beverly Hills Cop." He would place them 8 to 18 inches from the front wall for best results.

A Definitive C-1 center-channel speaker would rest on top of the video monitor. Magnetically shielded for video use, it sounds "smooth, articulate, and crisp," O'Meara says, creating the proper center image for accurate dialogue reproduction. For the two surround speakers he chose Definitive BP-2's, which he says give the best of both worlds: "the emotional impact of a traditional direct-firing Dolby Pro Logic surround speaker and the open, nondirectional image of a THX dipolar."

O'Meara decided that in addition to the five Definitive Technology speakers, a Velodyne VA-1012 60-watt powered subwoofer is a must for full impact. Although its placement isn't critical, this front-firing subwoofer "would be most at home manipulating the pressure zone right near the listener," O'Meara says. "It would make his pants shake." The sub also frees up the BP-10 main speakers to play more smoothly in the midrange, since they no longer have to reproduce deep fundamental tones. Similarly, he says, the Carver amp has more power to drive the midrange and high frequencies cleanly.

Although O'Meara thinks this system sounds great as is, he would love to upgrade it. He'd add a Pioneer Elite CLD-52 combi-player ($949), which can play both sides of a laserdisc without turnover and has twin digital-to-analog converters, a digital comb filter, and a two-year warranty.

As far as the loudspeakers go, bigger is better, according to O'Meara, so he'd trade up the front pair to Definitive Technology BP-20's ($799 each) for a larger image and louder, fuller sound. And he'd exchange the Velodyne VA-1012 subwoofer, along with $400, for a 100-watt Velodyne Servo 1200 ($1,095) for even deeper, tighter bass.
In any endeavor there are individuals and companies that come to exemplify the spirit of an idea and a time. These are the people and organizations that have made a difference in history, science, and music.

In high-fidelity, Acoustic Research is one of these companies. The seminal work of this company has actually formed the cornerstone of an industry, as much from a business standpoint as a technological one.

AR's approach to developing products has brought the world the acoustic suspension loudspeaker, dome high frequency and midrange drivers, the three-point suspended subchassis turntable and liquid cooled drivers. Each of these has become an industry standard because each bettered musical reproduction in a tangible, practical way. These successes come directly from two principles: First, the products must set a standard not previously achieved, or they must perform far beyond similarly priced competitors. And, second, no matter how advanced the technology may be, music is always the essential purpose and ultimate measure.

CLASSIC

The AR Classic loudspeakers are the first products to come from a new AR engineering team. Their research encompassed acoustics, physics and pure mathematics. They listened and measured — in labs, in sound rooms and in their own homes. The remarkable loudspeakers that they designed are classic AR products in every sense of musical performance and honest value.

For middle and high frequencies, the AR Classics employ a Symmetrical Radiation Array (SRA) that acts as a virtual point source. The SRA is made
up of an all-new soft cloth dome
tweeter, flanked above and below by
die-cast mid-bass drivers. A sophisti-
cated third-order crossover network,
derived by extensive computer model-
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bring along music you care about. Ask
your dealer to play the AR Classics
and hear the difference between the
ordinary and the classic.
What To Do When Something Goes Wrong

Soon or later, it’s going to happen. You’re going to switch on your hi-fi system, and—phhht! Or no sound at all. Even worse is an aroma of burning silicon—the smell of money going south.

That’s not to say modern audio equipment is unreliable. On the contrary, today’s hi-fi components are generally far more robust, long-lived, and idiot-proof than those of decades past. Nevertheless, most of us will eventually experience an equipment failure of some sort. And on that woeful day, who you gonna call?

Start by calling yourself. The road to a speedy recovery begins with self-help: identifying the offending unit, performing some basic diagnostics, and choosing the best course of action.

The most typical problems are the most easily fixed: loose, unplugged, or faulty cables and wires. Before assuming the worst—a major failure in one or more components—be dead certain the culprit isn’t a faulty connection or cable. Symptoms include a left or right channel that refuses to play, whether from a single source component, such as a CD player, or across the board; a persistent or intermittent hum or buzz under the music when you listen to a particular source; and, less commonly, distorted sound in one channel.

If you do find a suspect cable, make sure the connections are tight at both ends. If the problem doesn’t disappear, try a different cable in that hook-up. Cable troubles are often intermittent, with the fault manifesting itself only when the cable is twisted or turned a certain way—usually the way it is when you put everything back into place and sit down to listen. A cable that tests okay on its own may still be potential trouble as part of your whole system.

Troubleshooting usually begins with cable checking. Doing that on a routine basis can nip some failures in the bud. Every year or so, even if everything is working perfectly, turn off all your components and unplug all the AC power cords. Then check all your cables, beginning with your interconnects, the cables between your source, control, and power components. Most or all of these will have phono (RCA-type) plugs at each end. One at a time, unplug each connection, burnish the jack’s perimeter and the plug’s tip with an ordinary pencil eraser, and blow off any clinging rubber shreds. (The truly meticulous will use a contact cleaner such as Cramolin.) Re-insert the plug in the jack and rotate it a quarter-turn in each direction to insure that it’s solidly connected. Finally, inspect the full length of each interconnect for physical damage or extreme kinks or bends. (If any of your interconnects are optical or use DIN plugs, you can’t clean them as described. Just un-
plug, replug, and check for bends or kinks.)

Now turn to speaker wires. If yours have banana plugs at either end, clean the plugs with a pencil eraser as described above. If the ends are bare wire inserted into a push-type terminal or screwed to a binding post, make sure that the connections are tight, that not too many wire strands are broken, and, especially, that there is not so much as a single wayward strand joining one terminal to its neighbor. If you still have a problem after doing all that, you can be pretty sure it's internal to one or more of your components.

Receivers and amplifiers are more likely to fail than most other components, if only because they have the most electricity running through them and are most likely to heat up in operation. There are at bottom three basic failure modes: dark, dead, and dirty.

**Lights Out**

Perhaps the most common problem of all is a dead receiver or amplifier: no lights, no sound. Before calling the undertaker, confirm that the unit is powered from a live AC outlet (connect a desk lamp or other small household appliance to the same wall socket). If the outlet is okay, the component's main fuse is probably blown. Unplug it from the wall socket and look on the rear panel for an external fuse holder, usually a round, black knurled knob. (If there's no external main fuse, you should probably take the component to a repair shop.)

Unscrew the fuse knob, withdraw the fuse (a small glass tube with a metal cap at each end), and hold it up to the light. There should be a thin wire inside running from cap to cap; if the wire is broken, the fuse is blown. If you can't tell by looking, you could test the fuse with an ohmmeter or continuity checker—or just try a new fuse.

Although a blown fuse almost always indicates deeper woes, simple replacement is worth a try. But never ever replace a fuse with anything but another fuse of the identical size, shape, and rating. The rating is printed in tiny figures on one of the end caps (dig out a magnifying lens and a strong light to read it). For example, "AGC 2A, 250V" means an AGC-type fuse rated for 2 amperes at 250 volts. AGC-type fuses are available at good hardware store and at electronics stores such as Radio Shack.

If a new fuse immediately blows again, stop right there: Power-supply troubles are a sure bet, and there's nothing more you can do yourself. Repairing such problems is usually fairly straightforward for a qualified technician, and it's often relatively inexpensive, providing nothing more has failed elsewhere in the circuit.

**Lights On, Nobody Home**

Another common problem is when everything lights up and looks okay but you get no sound—nada, zip, bupkus. Before you do anything else, be sure you haven't made a mistake on your end. Return the volume control to a low level (to avoid unpleasant surprises if and when you find the problem), then check the following: Is everything truly turned on? Did you press play on the source component? Is there a disc or tape in it? Does the tape have something recorded on it? Is the correct source selected on your receiver, amp, or preamp?

Check for less obvious errors, too: Are the speaker switches on? Is a tape-monitor or a tape-play or external-processor switch unintentionally engaged? Look behind your components as well—especially if there are small children in the house—to confirm that all the interconnects and speaker wires are still properly hooked up.

If everything appears "nominal," as they say at Cape Canaveral, it's time to begin isolating the problem. Try an alternative signal source: If CD's and FM play fine but you get no LP sound, the problem almost certainly resides in the turntable, the cartridge, or the wiring between the record player and the preamp. But if you hear nothing from any source, you've probably got receiver or amp trouble.

You can confirm that by listening to your CD player or tape deck via headphones plugged directly into it. If you can hear the music on phones but not from your speakers, the control unit or amplifier is probably at fault.

Plug the headphones into the receiver or amp, too. If you still hear sound from the phones but not from the speakers, check the speaker switches and wiring one more time. If they're okay and the lights are still on with no sound, you've probably blown an internal fuse. Don't fool around inside any electronic gear unless you have a very good idea what you're up to. Removing the top cover of a receiver or amplifier to replace a fuse (or for any other reason) could not only void the warranty but will expose you to a shock hazard—even if the unit is disconnected from AC power (all amplifiers have power-supply storage capaci-
After going round and round about how to improve our CD player, it finally hit us.

"This is it!" cried Phil, "Now all we need is a laser beam!"
No Sound, One Channel

More often than not, a single dead channel is caused by a faulty connection or a misadjusted balance control, so eliminate that possibility first. Try several sources. If the missing channel occurs only with one source, the fault is in that interconnect cable or the source itself. First replace the suspect cable; if the fault disappears, discard the guilty interconnect and consider yourself lucky. If the fault remains and all other sources play okay, the source component is in trouble.

But if one channel stays dead with all sources, a bad speaker wire is the first suspect. Swap the speaker connections (left for right) at the receiver end. If the missing channel stays put (for example, no sound from the left speaker), the speaker wire on that side has a break in the circuit somewhere. Replace it and recheck all connections, and your problem should be solved. But if the problem moves from the left to the right channel (or vice versa) when you swap connections, and you have the same dead channel with all sources, you have a nonfunctioning channel in your receiver or amplifier. That could be caused by an internal fuse failure, but it’s probably something more serious—and more expensive to fix.

Bad Sound, One Channel

Dirty, fuzzy, distorted sound in one channel can be diagnosed in exactly the same fashion as a dead channel. Assuming it’s not limited to one source, if the problem switches sides when you swap speaker wires at the receiver or amp outputs, a receiver or amp channel is malfunctioning—see the doctor. If the problem stays put when you swap wires, a poor connection or speaker-wire fault is probably the culprit, although there’s a chance that the speaker itself is to blame.

Bad Sound, All Channels, All Sources

This almost always indicates a major receiver or amplifier failure. But before you pack up the component to take it to the shop, double check that the sound is really bad, not just less than perfect, and that the problem really occurs with every source. Anyone can be fooled. You could, for instance, simultaneously have a dirty stylus and a bad antenna connection, resulting in dirty sound from records and your favorite FM station. You can easily rectify both problems yourself, for pennies. If the sound isn’t obviously awful, solicit a second opinion from someone whose ear you respect, and confirm that all sources are equally affected.

Speaker Sorrows

Loudspeakers fail far more frequently from abuse than from defects or old age, but however they occur, the problems are simple: One or more drivers either don’t operate at all or operate at reduced level with inferior sound. The most common problem is a dead tweeter; the symptom is dull, lifeless sound from the same speaker even when the speaker wires are reversed. Check the back of the speaker for built-in tweeter-protection fuses. Though far from universal, you’ll bless these if you find them. A blown fuse usually means that the tweeter itself is okay, and you can solve the problem just for the cost of a fuse, usually about 50¢.

A damaged woofer is less common, and woofers rarely fail completely silent. Instead, you’ll hear normal sound at moderate levels, but if you play music with strong bass content at high levels you’ll hear buzzing or scraping sounds or other obvious symptoms of woofer distress. A blown midrange driver in a three-way system is rare but not unheard-of, and it can be tough to spot. The best method is to play a broad-band noise source, such as interstation FM hiss, and put your ear right next to the driver; if you hear nothing, it’s gone.

Failures in a speaker’s internal crossover network, though very unusual, are not unknown. The symptoms may be identical to those of a blown driver, so without replacing the crossover it’s difficult to be sure. A dealer or service technician can quickly check a suspect driver. (You can do this yourself by removing the driver, unclipping its leads, and—with a very low volume setting—touching both strands of the speaker’s input wire directly to the driver’s terminals. If the driver plays it is almost certainly okay.) Damaged drivers are almost never repaired but are exchanged for exact replacements.

Disc Distress

Compact disc players seldom fail, but when they go, they usually go in a big way. Rather than subtle degradations in sound quality, a damaged or worn-out CD player will usually have such symptoms as skipping, looping, or failure to play at all. (In rare cases a player misbehaves because its lens has become filthy. A commercial lens-cleaning disc may help.) To be certain that the problem is not caused by defective, dirty, or damaged CDs, try a selection of discs, including some that are brand-new or known to play fine on another machine.

Most CD problems are traceable to servo-circuit misalignment or failures in an integrated-circuit chip. A trained, qualified, well-equipped technician can repair either condition; often an adjustment is all that’s required. But because of a CD player’s complexity, it’s a very good idea to take or send it for repair only to a service center that’s authorized by the manufacturer.

Tape Troubles

Tape decks, being full of motors, belts, gears, and who-knows-what other mechanical gizmos, tend to break down more often than most other components. A deck that refuses to wind tape, eats cassettes, or is suffering obvious mechanical ailments—such as gross wow-and-flutter (pitch warbling)—should visit a service center. But less clear-cut woes, such as dull sound or poor recording quality, may be traceable to dirty or magne-
It has been, perhaps, Adcom’s toughest act to follow. The GCD-575 CD Player achieved breakthroughs in musicality unsurpassed by CD players at almost any price. *Stereophile* writes, "...in the under $1000 class the Adcom is the player to beat — or, more to the point, the player to buy."* Stereo Review credits the GCD-575 with "in general pushing the state of the art in digital-disc playback."**

So when the engineers at Adcom went back to the drawing board to try to top their latest success, they were hard-pressed to find areas for improvement. The electronics and sound reproduction were already near perfect. And then, *Voilà!* The idea: add a carousel changer.

**Round and round she goes.**

One disc, superbly reproduced, was a magnificent accomplishment...but five discs mean five times the enjoyment. In typical user-friendly fashion, the Adcom GCD-600 lets you change four discs while one is playing, offers true random capability for one disc or all five, allows direct clockwise or counterclockwise access for faster searches, and plays 3" discs without an adapter. The standard remote control gives you complete access to all playback features—including variable volume control—from the comfort of your favorite chair.

**Class “A” without compromise.**

The GCD-600’s Class “A” analog audio amplifier section uses very fast, low noise, linear gain semiconductors. These no-compromise audio circuits — based on the proprietary amps used in Adcom’s GFP-565 preamplifier — more clearly define low-level information for superior resolution and dramatically more musical CD reproduction. You will not find such superb component parts in any other CD player at any price.

**The cure for “digititis”.**

The GCD-600's technically advanced analog and digital circuits and the user-selectable polarity inversion switch are designed to overcome the problems inherent in CD sound. Midrange harshness and glare are dramatically reduced. Sound stage imaging is deeper, more focused, more musically natural. The benefits of digital sound are realized, without the accompanying drawbacks.

**Take the GCD-600 for a spin.**

If you’ve been searching for a CD player that offers the convenience of a carousel changer and the sonic superiority of high-end single-disc models, take the GCD-600 for a spin at your authorized Adcom dealer. You won’t have to go round and round to decide which CD changer gives you the most sound for your money.


**Stereo Review, 1989
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For great music entertainment, watch for the Billboard Music Awards on Fox Television, December 9, 1992.

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Turntable Trials

Record players are simple: There's a motor, maybe with a drive belt, a platter, a tonearm, a cartridge, a stylus, and some wires. If the platter spins at the right speed, the cartridge is functioning, and the arm is properly adjusted, it's got to work. Nevertheless, turntables are more likely to develop audible problems than any other component in an average system—usually because of poor installation or lack of maintenance.

A missing channel or a persistent hum or buzz from LP's is usually caused by a faulty or misconnected cable between the turntable and the phono inputs on your receiver or amplifier or by a bad cartridge connection. The interconnect can be checked like any other cable (see above). The cartridge is connected to the turntable (and thence to the rest of the system) by four tiny wires running from its headshell back through the tonearm. If any of the wires at the back of the cartridge are loose or dangling, there's your problem. Just reconnect them. Occasionally, however, a wire will break somewhere up in the tonearm, and that requires a professional to fix.

Bad sound from records in one or both channels often means nothing worse than a dirty stylus. Get a stylus cleaner and use it regularly (don't use your finger—it's too dirty and oily). A severely worn stylus exhibits the same symptoms, but to check it you'll need to take it to a qualified technician or dealer equipped with a stylus-inspection microscope. If the stylus has had more than around 500 hours of use, consider replacing it even without visible wear. Sometimes (rarely) a cartridge will drop out one channel or produce consistently bad sound even with a good stylus tip because its elastic elements have gotten brittle over the years. Again, you will need a new stylus or possibly a new cartridge.

Excessive pitch variations (wow-and-flutter) from a belt-drive turntable can often be rectified by replacing the belt (see your dealer or an authorized service center for the right one). If you install a new belt yourself, first clean the motor's drive pulley and the platter's drive surface thoroughly with isopropyl alcohol or tape-head cleaner and cotton swabs. If the problem persists, you may need a new motor. Audible wow-and-flutter from a direct-drive turntable, though rare, generally means it's time to replace the motor or the whole turntable.

Where to Take It

Once you've determined that a component truly needs professional help, the first step is to pack it up in its original box—you did save it, didn't you? You then have three basic options: 1. Take it to a local fix-it shop. 2. Take it to a factory-authorized service center for that brand (often the dealer you bought it from). 3. Send it back to the manufacturer.

Check the warranty statement in the box (or in your files, if you're unusually well organized). It probably includes a list of authorized service centers around the U.S. If the component is still under warranty, your choice is simple: No. 2 or No. 3. Paradoxically, returning it to the manufacturer may be faster than local repair, though you'll have to pay for shipping one way. Sending it to the manufacturer may be a good choice even for out-of-warranty fixes. In any case, call first: Call a dealer or service center to confirm that it's an authorized warranty station for that brand and to ask about turnaround time. Call a manufacturer to insure that your return will be accepted—ask for a return-authorization (RA) number. For any warranty repair, you'll be required to provide your original sales receipt from an authorized dealer (you did save it, didn't you?) as proof of purchase.

Many loudspeakers carry long warranties—five years is not uncommon—so you may be able to have a blown driver serviced, no questions asked, for free. It's often possible to take a malfunctioning speaker that's still under warranty (packed in its original carton and accompanied by your original sales receipt) to an authorized dealer of the brand for an on-the-spot driver-swap. But call first.

Out-of-warranty components raise more possibilities. A loudspeaker should still go to an authorized dealer or service center for that brand—but don't replace a blown driver with anything but the exact same part. CD players, tape decks, receivers, tuners, and so on should probably also be taken to factory-authorized technicians, as these complex components are virtually sure to require unique parts and expertise. But many turntables and simpler electronic components such as power amplifiers (particularly older models) may be repairable at a good price by a competent general electronics technician. It's worth a visit first to scope out the shop and perhaps to get some references.

Wherever you go, begin by determining the minimum "bench charge," which can be as much as $50 or $75 even if no problem is found or fixed. Before leaving your precious component, ask the technician or sales desk clerk to quickly confirm the problem. It's not unknown for a fault to vanish mysteriously, never to reappear. Also, be sure to get a drop-off receipt and an approximate date of completion. And always request a cost estimate by phone after the diagnosis is made.

Is It Worth It?

Which brings up the question of whether to repair the broken component at all. It depends on its age, the cost of repair, and any sentimental or peculiar sonic values it may have. My personal formula is this: If \( R \times A \) is greater than \( C \) (where \( R \) = repair cost, \( A \) = the component's age in years, and \( C \) = its original purchase price), consider putting your money into an upgrade instead of a repair. Of course, rules are made to be broken. This formula works well for relatively young components in areas where the technology is changing fast, such as inexpensive tape decks, tuners, and CD players. But applying it to a classic late-1960's tube preamplifier or power amp, or a well-loved loudspeaker, would be madness.

Service turnaround time can vary enormously, so it pays to shop around for speed as well as cost (if the unit's out of warranty). Nevertheless, a week or two of down-time is just about inevitable. But a fortnight or so without music, though torturous, need not be entirely a bad thing. Catch up on your correspondence. Read War and Peace. Learn a musical instrument—a simple one like harmonica or lap dulcimer. Or, if all else fails and the season is right, do your taxes. Provided you've played your cards right all year, your refund just might cover the repair.
Ferry does everything slowly. Even answering questions. Sitting in the conference room of Master Disk studios in New York, Ferry chewed over each of my queries, rolling it around while staring off wistfully before, at last, emitting a tidy answer. It isn't wariness that makes him reserved but a desire for clarity, a need to get everything right before letting it go.

Which is exactly why Ferry was still fiddling around the studio nearly five years after he began recording "Horrorscope," his first album since 1987's "Bête Noire." Characteristically, the album's title is still tentative, and so is its release date. (When I interviewed Ferry it was loosely planned for this fall.)

"I don't know why these things take so long," the forty-seven-year-old Ferry said with genuine regret. "Simply because of the writing, I suppose. Trying to write a new repertoire gets harder each time."

Especially when your persona and style are as focused as Ferry's. Over his twenty-year career, initially as frontman with the glam-rock group Roxy Music and later on his own, Ferry has explored the depths of rejection and the heights of ecstasy associated with impossible romance. The music he made with Roxy in the Seventies remains as shocking and uncategorizable today as when it first appeared: a noisy traffic jam of glitter-rock outrage and grand balladry, all topped by Ferry's vibrato-laden, flagrantly ironic vocals.

By 1980 Ferry had begun planing down his approach, smoothing the music into sensual sound sculptures while wiping the smirk off his face to croon straightforwardly about a universe of dashed dreams. His solo albums since the 1985 collapse of Roxy Music have featured ultradense, supersophisticated musical dreamscapes, full of tastefully muted rhythms and mysteriously buried vocals. It's a style he still uses for "Horrorscope," though initially he headed in another direction.

"When we first started recording [back in 1988], I was filled with this idea that the sound had to be as live as possible," he explained. "We tried putting the bass and drums on together at first." But he didn't like the result and wound up scrapping the tracks. It was the first of many delays.

For Ferry, the least problematical parts of the process have been his vocals. "It's weird, but as a singer you spend less time on that than anything else. You spend all your time trying to create the right setting to sing in."

Lately, that setting has featured a rich tapestry of overlaid guitars, bass lines, and keyboards, a soft quilt of interlocking sounds. It is a true audiophile record Ferry is making. "If you work on something for a long time you start to accept all this [musical] information," he said. "You can make sense of it all—maybe ten or twelve different guitar tracks. There is a danger in listening to it too much, but maybe it's a good thing, too. It gives the records a longer life for listening."

Unfortunately, Ferry's old manage-
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ment didn't agree. Shortly after he began recording the album, they put pressure on him to finish. "They really didn't understand how these sorts of records can go on." Worse, his managers weren't pleased once they got an earload of what he was working on. "They didn't think it was heading in a very commercial direction. That's always a problem—to try to do something you like that will capture the popular ear. It's the eternal riddle."

The managers weren't willing to wait while Ferry tried to solve it. So they parted ways, leaving the singer to reconnect with an old ally for new management: David Enthoven, one half of E.G., the company that first signed Roxy Music in 1972. A further allusion to the early days came last year when David Bowie recorded If There Is Something, a song from the first Roxy Music album, with his band Tin Machine. Ferry said he found the energetic result flattering, but he turned nostalgic discussing the different recording style he used back then. "Do you know, in 1973 I recorded three albums?" he said. "I still can't figure out how."

The 1973 records were "For Your Pleasure," the second Roxy album and Ferry's favorite, "Stranded," generally regarded as the best of the early ones, and "These Foolish Things," his first solo album, a set of ironic cover tunes. What marked all of them, in contrast to Ferry's later work, was a campy sense of humor. "There was more wit then," Ferry agreed. "[Brian] Eno and Andy [Mackay] were kind of zany players. And you were kind of having the fun."

"The irony of the music. The managers weren't pleased once they got an earload of what he was working on. "They didn't think it was heading in a very commercial direction. That's always a problem—to try to do something you like that will capture the popular ear. It's the eternal riddle."

The new style came to fruition with Roxy's 1982 album, "Avalon," widely regarded as the band's most beautiful. Still, it wasn't easy. "We had a lot of turbulence making that record," Ferry said, "because I kept bringing in other musicians to do certain things." It turned out to be the group's last studio effort together. "I'd taken Roxy as far as it could go. I never really said the group was finished. We just didn't work together again."

Ferry doesn't mind talking about such milestones, but when too much talk centers on his artistry, he withdraws. When I asked why he thinks "Avalon" is so highly regarded, he ducked the question, preferring to talk about technical matters. "That was the last twenty-four-track record I did," was his entire answer. Pressed about why he dislikes going into artier aspects of his work, he was direct: "I would hate to be thought of as a pseudo-artist."

Ferry may not like to overintellectualize his work, but in some people's view he certainly overdoes it. While admitting to a degree of perfectionism, he attributes his painstaking work habits mostly to a changed lifestyle. "During the making of this album I've had two children," he said with a smile. "That makes a huge difference. It slows you down."

Given that, one wonders anew about Ferry's lyrical concerns. While grounded in real-life family relationships he finds himself grappling in his songs with issues of extreme sexual lust and elusive romance.

How does a man of his status approach such material? "With great care," Ferry laughed. "I guess I have a good memory. That's the hard thing—to come up with lyrical ideas that are sexually potent that aren't too adolescent. I don't want to sing about children's tea parties, though that's a part of my life. And I find it slightly embarrassing to sing about saving the rain forest. For good lyrics it's either got to be sexual or it has to be about religion or death. There are very few of those big, emotional things we have that are worth exploring. I want to explore these things seriously because I don't want to find myself embarrassed about my work."

He has no need to be, given the sophistication of his approach. His view of romance is bound by no age barrier and he gains further longevity by never having sold himself as a figure of youth culture. He's more often compared to the actor Dirk Bogard than to any pop star.

Accordingly, Ferry's current struggle isn't against age so much as repetition. "It gets harder to say things differently," he said. "It's frustrating, because you get better at your craft, whether it's playing or singing or record making. And yet it's harder to complete it."

Ferry, locating the perfect lyric to complete his records is a matter of layering, of finding another meaning lurking beneath the surface. The lyrics mirror the irony of the music. His records these days are lush yet remote, full of sensuality yet also brimming with foreboding. "You want to find sounds and words that satisfy you on more than one level," he said. "To pretend to be throwaway but to hint at something else."

Right now, Ferry wishes he could throw away a bit more, to be able to bash records out like in the old days. In that spirit, he included a new version of an old song, his 1973 classic Mother of Pearl, in the new album, and he's planning on doing another quickie album of covers. "I feel like I've run the marathon on this last album," he summed up. "Maybe it's time I learned to sprint again."

Editor's note: As we went to press, we received word that Ferry, to no one's surprise, had scrapped his new album and begun work all over again. No projected release date has been set.
Life's little ups and downs, as we all know, can be quite trying. But when songwriter/guitarist Sara K. sings about them in her sparse folk/rock style, they can be trying for a speaker system as well.

The T830's 1-inch soft-dome tweeter, 3 1/2-inch midrange and 8-inch woofer are designed, built and tested by us. And they're ideally suited to reproducing Sara K.'s melodic songs. Chesky recording, you can almost feel the musicians in your room.

To capture Sara K.'s coffeehouse intimacy, engineer Bob Katz recorded Sara and her back-up band live, with minimalist miking techniques and no processing in the signal path. If you listen carefully, you can actually 'hear' the recording studio they're performing in.

And to combat the gritty edge of some digital recordings, Chesky uses a proprietary Mark III A to D converter with vacuum tubes in the analog stage, and 128x oversampling. Built by George Kaye, it maintains the sweetness of analog with the clarity of a digital recording.

The result is that Sara's voice blends with her unusual 4-string guitar for a haunting and personal delivery of her ballads and love songs. To hear it for yourself, visit a Boston Acoustics dealer and ask to hear Sara K. on a pair of Boston Acoustics T830 speakers. After all, music this good should be heard on speakers this good.
Remember the first time you heard a CD? It sounded so good, you hoped the music would never stop.

Which is the whole idea behind the CD changer.

Unfortunately most companies, in their rush to produce one, neglected to isolate the disc that's playing from the changer platform. A big mistake. (Not as big as the Hubble telescope, but pretty darn serious.)

One that transfers internal and external vibrations to the playing disc. Creates resonance. Distorts the sound. And defeats a primary reason for buying a CD player in the first place.

Fortunately Yamaha avoided this common problem by developing an entire line of CD changers that are virtually vibration-free. A pretty amazing feat in itself.

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And because you're supposed to spend your time listening to your CDs and not the machine that plays them, Yamaha's developed a new changing mechanism that's exceptionally quiet, quick and reliable.

But you can't judge a superior CD player merely by its changing mechanism. What makes the difference between a good player and a great one has to do with attention to details.

Take Yamaha's new CDC-835 for example. With Yamaha's S-Bit Plus Technology, twin balanced D/A converters and Class A amplification at every stage, the CDC-835 outperforms most single disc CD players on the market.

Its fluorescent display can be dimmed or set to automatically shut off during playback, eliminating any chance of interference.

And the CDC-835 is equally impressive in the convenience department. Its TOC Memory memorizes the contents on each disc, speeding up access to specific songs, especially during random disc-to-disc play.

And to give your favorite kind of music even more presence, there's a built-in equalizer with five digital presets.

In fact, the CDC-835 can remember your favorite songs on up to 100 discs and play them back in any sequence. It even remembers EQ settings.

Then there's 5-Disc Tape Edit. A useful recording feature that arranges the tracks you select so they fit neatly on two sides of your tape.

By now, if you're not quite sold on the CDC-835, you only have two options. You can drop by your nearest Yamaha dealer and let your ears make up your mind.

Or you can buy another changer. Which when you stop to think about it, would be a total shock to your system.

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HOW TO BUY YOUR LAST TURNTABLE

YES, your last one—because with the supply of vinyl records already no more than a trickle, there will be little if any market for equipment to play LP's and 45's in years to come. When the turntable you now have or buy soon goes belly-up, you’re likely to find few, if any, replacement options. So consider the problem now, before it’s too late.

Depending on your feelings about vinyl, or about vinyl vs. CD's, there are two basic approaches you can take—and the state of your checking account may be a factor as well. The first approach, which I suspect reflects the attitude of most STEREO REVIEW readers, is to see a turntable as a safety valve to keep an existing LP collection playable as a supplement to the CD's that will eventually replace most of it. The second approach is to view an LP collection as an irreplaceable heirloom for whose preservation and maintenance no pains should be spared. Both are valid approaches, but they create quite different sets of criteria for turntable shopping.

Let’s begin with the spare-no-pains approach. Its adherents again fall into two groups, though their interests are very similar. The first group—antiquarians, if you will—wants to be able to hear, for as close to perpetuity as anything phonographic can achieve, precisely what the original issues of their favorite recordings sounded like, or they may want to retain access to esoteric LP's that will probably never be reissued on CD. The other group includes everyone who considers the sound of CD's to be inherently inferior to

Bang and Olufsen's TX-2 ($400) is a direct-drive, tangential-tracking turntable with a patented suspension system said to resist the effects of external vibration.

By Robert Long
that of the finest analog recordings. If you're in this group, no CD reissue can possibly atone for a scratched LP, and no glittering newcomer can ever replace your vinyl treasures.

The two groups are not mutually exclusive, and both emphasize high performance in extracting sound from record grooves and in preserving those grooves for future listening. In the latter respect, the ultimate turntable is surely the legendary Finial, whose pickup system scans record grooves with a laser beam. No physical contact means no record wear, and the Finial is the only record-playing device that can make that claim. It's also the only turntable that costs $35,000, so if you decide to go for it, you may have to forget about that extra Mercedes . . . . (Finial turntables are distributed by Quest, 120 Woodbridge Place, Leonia, NJ 07605.)

Turning to gear for the rest of us, you should still be able to keep record wear minimal as long as you choose good equipment and maintain it carefully. For the finest possible performance, make sure that the cartridge's tracking force, antiskating compensation, and tracking angle (both lateral and vertical) are all spot-on. Even more important, be sure that the resonance of the arm/cartridge combination is close to ideal. There are two ways of addressing these issues: Buy an integrated turntable/tonearm/cartridge system, or mix and match.

To my mind, the better way is to choose an integrated system in which all the parts are engineered for each other. Many American audiophiles deeply resent the loss of choice that this approach implies, however, and have snubbed most integrated models. Bang & Olufsen has probably been the most visible proponent of integration. If you like B&O turntables and are thinking of mounting your favorite cartridge into one, be it from Shure or from Sota—forget it. You can't.

It's not just a question of plug compatibility and the like. You need to consider how the cartridge's compliance and the tonearm's mass will interact when you mix brands, and only separates will give you any help in that regard. Tonearm makers, and their dealers, are more likely to provide useful information than a cartridge manufacturer, most of which like to imply that their products will be ideal in all arms. This is where shopping at a specialist audio dealer can really pay off. If you make a bad match on your own, the result could be not only a pickup that pogo-sticks its way across...
A belt-drive turntable, the Linn LP12 Valhalla ($1,595) features a twenty-four-pole synchronous motor and adjustable three-point spring suspension. It has a stainless-steel top plate and a hardwood base.

The Denon DP-47F is a direct-drive, linear-tracking turntable ($450). Features include a quartz-lock/magnetic-pulse speed servo, automatic record-size and speed selection (33 1/3 or 45 rpm), a die-cast platter, a polished wood base, and shock-isolating feet.

Priced at $550, Sota’s Comet is the company’s least expensive turntable. Finished in glossy black acrylic, it features a resonance-free polymer platter, a synchronous AC motor, and an elastic suspension/isolation system.
every warped record, but massive groove wear where it alights—or, worse, where it tracks but fails to trace the groove. In this case, the stylus leaves the groove walls and bounces back into them with massive force, which results in severe, irrevocable damage to the record. A responsible dealer is unlikely to make such a mismatch, and if he does, he'll be happy to set it right.

The mix-and-match approach also leaves it up to the buyer or installer to optimize the tracking angles. Vertical tracking angle is usually adjusted by raising or lowering the arm's pivot, the lateral tracking angle by adjusting the overhang of the cartridge within its shell (that is, its distance from the arm's pivot). How complex these adjustments may be, and how helpful the supplied instructions are, can vary a lot between models.

Tubular tonearms with angled pickup heads usually yield the least resonance problems of any sort. Curved S- or J-shaped arms tend to be weightier, which may cause warp-tracking problems with extremely compliant pickups, and they may also resonate internally and thereby influence the output waveform. Some curved arms do have the virtue of ruggedness, however, and they should last at least as long as your records.

Both angled and curved arms are pivoted, of course. The alternative type of arm, called linear-tracking or tangential-tracking, moves the pickup straight across the disc's radius, the way the cutter head moved when creating the groove on the master. Properly set up, such arms eliminate all lateral tracking error and all skating force. Most are fussier and less rugged—and sometimes very much more expensive—than pivoted arms, but the various models available represent the state of the art in record playing.

Regardless of whether they're straight or pivoted, some arms are designed for use with P-mount cartridges, which offer some of the advantages of an integrated design because they are standardized in mass and overhang, enabling the tonearm to be optimized for known values. Going with a P-mount arm does limit your choice of cartridge, however. Ortofon, for example, has many cartridge models that will work in either P-mount or standard tonearms, but many other companies make standard-mount cartridges only. And usually the most sophisticated separate arms, with air bearings and such, will accept only standard cartridges.

Many of the best turntables are belt-driven. Since a belt can last for years, there may be no source for replacements when you finally need one. If the belt is made of a synthetic material, however, it shouldn't need to be replaced over the life of the turntable. Usually such a belt slips because it has stretched over the years or become contaminated with oil or grease—in either case, a thorough cleaning of all drive parts is required before a new belt is mounted. The alternative is a direct-drive turntable. When one of these fails, it usually means you need a new motor, but a good direct-drive motor will probably outlast a well-made belt. An inexpensive direct-drive motor may be another story.

If you hope to play a collection of 78's as well as LP's and 45's on your new turntable, a number of models are still available with a broad range of prices, that can play at 78 rpm—some even offer the most common variants of that speed found in acoustically recorded 78's. Be warned, however, that 78's require both special styli and special equalization to play correctly. This is, in fact, another advantage of the Finial turntable: You can get the necessary electronics for it to EQ 78's properly, and its laser beam will read 78-size grooves as well as the micro-grooves on LP's.

Even if you'd rather buy a utility-grade turntable at moderate cost, it's still important to understand the foregoing considerations. You might be able to save a bundle by buying a toptlight model that's being discontinued or even, if you're very careful, a fine used turntable in excellent condition. But don't buy a record changer at any price. The best models haven't been in production for years, they contain too many moving parts that can malfunction, and they're too hard on the discs—even in the single-play mode. If you must have continuous music, dub your discs to tape.

The trouble with used equipment is that you can't always tell whether it has been abused. The $500 Thorens you pick up for $30 at a yard sale is likely to be there for a good reason. You don't know who spilled coffee into it or how many times the kids knocked it off its shelf while hunting for the jellybean cache. Still, there have been some great turntables that are no longer in production, and some audio stores offer warranties on used equipment that they sell.

In any event, view simplicity as a virtue when you go shopping. Not only does a high parts count usually come with a high price, but it also implies extra opportunities for eventual misbehavior. And while battleship ruggedness may seem desirable for long-term operation, it's most often a characteristic of professional turntables and can be entirely unnecessary for occasional use at home. The featherweight parts and low motor torque of minimalist designs like the classic AR turntable promote longevity by reducing parts wear. A pro model with an armor-plate platter that reaches full speed in half a rotation (for back-cueing in a broadcast studio or a disco) might fail sooner through sheer overwork.

To save yourself grief from record warps, you might look for a turntable with a "decoupled" or "diffuse-resonance" tonearm, rather than one whose counterweight is rigidly attached to the arm, because such designs are less fussy about the compliance of the cartridge you mount in them. And a cartridge with an independently suspended dust brush—Shure and Stanton both offer this feature—not only sweeps up debris but helps stabilize tracking.

Most cartridge manufacturers offer very good cartridges and styli for around $100 or even less. You can get better performance at higher prices, but remember that the more esoteric a cartridge you choose, the greater the chance you won't be able to find a replacement stylus when you need one. If your interest in LP's wanes fast enough, and if you're careful to avoid stylus damage, maybe you'll never need one, but what if you do?

Finally, don't overlook record cleaning. This is not the place to go into that subject, but a fine playback system—particularly one intended for long-term use—is wasted if you don't keep your vinyl clean.
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Keith Richards's Offhand Genius

It's solo time in Stones-land, with albums in the racks from all but bassist Bill Wyman, who may not even be a member anymore. "Main Offender," solo studio album No. 2 from Keith Richards, is more of what we've come to expect: vocals sung in an affecting whiskey wheeze, skeletal tracks that groove snakily, an airtight fusion of rock and rhythm-and-blues that's as solid as bedrock. Richards favors a live sound, human-played drums, face-to-face interplay, and a minimum of studio distraction. As with its predecessor, "Talk Is Cheap," when you listen to "Main Offender," you can hear the room it was recorded in and feel the music and rhythms in the pregnant spaces between notes. Richards and company make music the old-fashioned way: They play it.

He's backed by his usual collaborators again—drummer Steve Jordan, guitarist Waddy Wachtel, bassist Charley Drayton, and keyboardist Ivan Neville (though they all swap instruments here and there). "Main Offender" isn't a particularly ambitious album, just a solid and consistent one that's sparked by Richards's offhand genius. It's got its share of wicked rockers, particularly the sinuous opening track, 999, and the irresistible churning Bodytalks. A textbook study in setup, Bodytalks commences with a fragmented, uncertain riff, followed by a lone cymbal crash. Then the guitar cranks out a smoldering riff for real, the drummer picks up the beat, and the band falls in, placing you in groover's heaven for the next five minutes.

As a vocalist, Richards projects surprising soulfulness in a trio of numbers that reveal a vulnerability that's been masked by bad-boy behavior for three decades. Hate It When You Leave is a tough-tender heart-on-sleeve confession that's got a good beat and a measure of Al Green-style Memphis bounce. Richards croons like Caruso in Eileen—"This is no life living here without you," he sings, elongating that last word with deep feeling and real control. Finally, he owns up to his demons in the album-closing Demon, asking, "Which way to go?—I don't know / There's a demon in me," while picking out spare, haunting chord fragments. There are a couple of tracks in "Main Offender" that feel unfinished or unexceptional, but in the main Richards, as usual, makes the most music out of the least materials—the mark of a true craftsman.

Parke Puterbaugh
KEITH RICHARDS: Main Offender
999; Wicked As It Seems; Eileen; Words of Wonder; Yap Yap; Bodytalks; Hate It When You Leave; Runnin' Too Deep; Will But You Won't; Demon
VIRGIN 86499 (50 min)

Esa-Pekka Salonen's Mahler Fourth

To hear Esa-Pekka Salonen's new recording of the Mahler Symphony No. 4 is to fall in love with this often-heard piece all over again. While the performance is full of distinctive touches—even more than Leonard Bernstein's—Salonen doesn't deliver a series of hot moments instead of a well-integrated interpretation, the way many of his conducting contemporaries do. He has rethought the piece, deeply, and the result is an interpretation that occupies some of the same territory as the famous 1939 Philips recording by Willem Mengelberg with the Royal Concertgebouw Orchestra. Salonen, too, changes tempo with every new musical paragraph, but while Mengelberg's generous rubatos can seem willful at times, Salonen's more discreet fluctuations seem more deeply felt.

Virtually all of what he does has a basis in the score markings, but instead of merely following Mahler to the letter, he often uses the markings as imaginative jumping-off points. For example, Mahler asks for the peasant-like dance in the trio section of the second movement to be taken at a "leisurely" tempo. Salonen's pacing is so slow the "dancers"
These days “home theater” is a term liberally applied and widely advertised. But having defined the category in the first place, we reserve the right to redefine it. So here goes: True home theater must rival or exceed the very best movie theaters.

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We invite you to visit your Elite dealer to see Home Theater as intended by its maker. And discover the ultimate way to watch a movie.
Lucinda Williams: Straight to the Heart

Lucinda Williams may not ever be a household word—her raw, plaintive soprano and her songs about hard truths and desperation tend to make the Wal-Mart crowd anxious. But in the four years since her last album, the lyrical singer-songwriter has seen her status rise from cult figure to up-and-comer with Patty Loveless's exquisite cover of The Night's Too Long and Mary-Chapin Carpenter's recent rendition of Passionate Kisses.

Now comes "Sweet Old World," an album that will immediately endear Williams to fans of straight-from-the-gut songwriting. A record that embraces r&b and backwoods country while simultaneously flirting with rock and white gospel, "Sweet Old World" sidesteps easy genre classifications. Still, when it isn't calling on a mournful fiddle, dobro, or mandolin for a lonesome Southern mountain sound, or a spare slide guitar to convey the heave of a heavy sigh, it aims for a forthright, stripped-down Sixties sound—loose, jangly guitars and prominent drums—to carry Williams's poetic, short-story vignettes.

Most of Williams's songs are about the pain of not getting what you need or what you want. Her personal songs of love and disappointment (Something About What Happens When We Talk) hang like heavy smoke in the air, and the more hopeful ones ask for safe havens in an indifferent world or the mere pleasure of viewing the lines around a lover's eyes.

Her most potent songs, however, involve characters caught in the crosshairs, struggling with harsh moments of reality or vulnerability. Some are profiled posthumously, after their pain left them no choice but to blast out of life, or lovingly questioned after their departure ("Didn't you think you were worth anything?"). Rich in description and characterization, the songs highlight the dingy life of a doughnut-shop worker so infatuated with a woman who rejected him that he can hear her heart beat Six Blocks Away, explore the pathetic dime-store fantasies of the dead-end Memphis Pearl who longed only for the glamour of red lipstick and a dress that zipped up the side, and lament the no-chance existence of a teen who shoots a kid near a liquor store because He Never Got Enough Love ("His mama ran off/When he was just a kid/So he never really knew her at all/Just a picture of a girl/In a sad blue dress/Hanging beside a cross on a wall").

Williams has a colorful, no-frills voice fraught with rural-Louisiana soul. She delivers her searing lines without artifi-
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Levine Unleashes Verdi's Revolutionary "Luisa Miller"

Since Luisa Miller (1849) represented a significant departure for Verdi—turning away from Biblical and historical subjects and focusing on social and family issues—this important early opera has been often called a "domestic" tragedy. But let's not carry that point too far: The Schiller play on which the opera is based, Kabale und Liebe, overflows with a revolutionary spirit, seething with outrage against the oppression of the unprivileged classes by their abusive and unprincipled feudal lords. Some domesticity! Passion and violence are at the core of Luisa Miller, and by unleashing its dark sonorities and violence are at the heart.

Revolutionary "Luisa Miller" at the Met, and the recording reflects the spirit. James Levine does justice to its angry Miller, and by unleashing its dark sonority, seething with outrage against the oppression of the unprivileged class—by their abusive and unprincipled feudal lords. Some domesticity! Passion and violence are at the heart.

Happens When We Talk; He Never Got Enough Love; Sweet Old World; Little Angel; Little Brother; Pinocchio; Lines Around Your Eyes; Prove My Love; Sidewalks of the City; Memphis Pearl; Hot Blood; Which Will

CHAMELEON 61351 (45 min)

VERDI: Luisa Miller
Millo, Domingo, Chernov, Quivar, Plishka, Rootering, others; Metropolitan Opera Orchestra and Chorus, James Levine
SONY 48073 (two discs, 137 min)

INCE Luisa Miller (1849) represented a significant departure for Verdi—turning away from Biblical and historical subjects and focusing on social and family issues—this important early opera has been often called a "domestic" tragedy. But let's not carry that point too far: The Schiller play on which the opera is based, Kabale und Liebe, overflows with a revolutionary spirit, seething with outrage against the oppression of the unprivileged classes by their abusive and unprincipled feudal lords. Some domesticity! Passion and violence are at the core of Luisa Miller, and by unleashing its dark sonorities and fiery rhythms, the conductor James Levine does justice to its angry spirit.

Sony recorded this opera in May 1991, following several staged performances at the Met, and the recording reflects the cohesiveness of a well-drilled ensemble. Moreover, it benefits from the involvement of a well-chosen cast and the Metropolitan Opera Chorus in top form. This is Placido Domingo's second recorded portrayal of the idealistic and betrayed Rodolfo. There are echoes of Otello in his dark tenor, and little hint of youth, but he remains a tower of strength. The title character, too, should ideally be interpreted by a youthful-sounding soprano—such as Anna Moffo in the 1964 RCA Victor recording. Verdi's music, however, asks for a lot more than pure-toned lyricism, and in the Sony set Apriale Millo, with her mature dramatic sound, rises to the challenge despite a few instances of unsteadiness.

In Vladimir Chernov, formerly of the Kirov Opera, we may have found the Verdi baritone long absent from our stages. In the role of Miller, his rich tone is even throughout the range, and his style bespeaks good Italian training, enhanced by the most idiomatic diction in the cast. The supporting roles, too, are in good hands. Florence Quivar's opulent mezzo lends significance to Federica's bored affection for the RCA set (Moffo, Bergonzi, MacNeil, all at their best) remains unblemished, but I cannot deny the superior conducting and richer recorded sound, rises to the challenge despite a few instances of unsteadiness.

There is an anticipation of Rigoletto in that duet. We hear pre-echoes of La Traviata and even Otello elsewhere in this fascinating transitional opera, rescued from long neglect and deserving of its growing popularity. My long-harborred affection for the RCA set (Moffo, Bergonzi, MacNeil, all at their best) remains unblemished, but I cannot deny the superior conducting and richer recorded sound in this new one.

George Jellinek

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• HANDEL: Judas Maccabaeus. Harper, Watts, Young, Shirley-Quirk, Somary. VANGUARD OVC 4071/2 (two discs); highlights, OVC 4073. Handel's Hanukkah oratorio receives an authoritative performance from Johannes Somary, his distinguished soloists, and the English Chamber Orchestra in this 1971 recording.

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SONNY BURGESS WITH DAVE ALVIN
Tennessee Border
HIGHTONE HDC 8039 (27 min)
Performance: “Runnin’ like wildfire”
Recording: Good, but . . .

Sonny Burgess may not have been one of the most famous rockabilly names to pass through Sam Phillips’s Sun Records, but his early sides—We Wanna Boogie, Red Headed Woman, and Sadie’s Back in Town—were certainly the most manic sounds to come out of the little storefront studio, suggesting that Burgess and his band, the Pacers, were either drunk as skunks or lived life so much on the edge that they’d fall off the planet within the hour. If they didn’t exactly rack up hit after hit, other musicians paid attention—it was Burgess’s version of My Bucket’s Got a Hole in It. And even if they didn’t exactly rack up hit after hit, Burgess and his band, the Pacers, were either the little storefront studio, suggesting that Burgess and his band, the Pacers, were either drunk as skunks or lived life so much on the edge that they’d fall off the planet within the hour. If they didn’t exactly rack up hit after hit, other musicians paid attention—it was Burgess’s version of My Bucket’s Got a Hole in It. Ricky Nelson copied, not Hank Williams’s.

Burgess was born in Arkansas, but unlike other rockabilly stars, his real allegiance was not to country but to r & b. As a singer, he usually bypassed subtle shadings for a full-tilt wail, while his guitar playing went to tough, bluesy attacks of intensity. Today, Burgess still tours, often with the Sun Rhythm Section, and this record, produced by ex-Blaster and ex-X Dave Alvin (who also contributes guitar and the Blasters’ tune Flattop Joint) finds him very much in the groove.

If Burgess isn’t quite as wild here as in his heyday, his vocals are as sturdy and anxious as those of a guy one-third his age. As with his early sides, things are kept raw and unsophisticated—everything sounds as if Alvin used one mike for both the singer and the musicians, the old-fashioned way. And the lyrics are often nearly unintelligible. Many of the songs recall the sound of other Sun artists—As Far As I Could Go is terribly Johnny Cash, Stuck Up and My Heart Is Aching for You evoke early Elvis, and the album’s best rave-up, I Don’t Dig It, bears the stamp of Carl Perkins.

It’s unclear whether Alvin or Burgess plays lead guitar in certain cuts, but it’s usually smokin’, and right on target with Burgess’s defining style. A keeper.

A.N.

ANN HAMPTON CALLAWAY
DRG 91411 (72 min)
Performance: Wow
Recording: Excellent

Not since Jo Stafford has a singer come along with that rare combination of a multi-octave range, awe-inspiring technical command, stylistic versatility, interpretative taste, and, refreshingly, a saucy sense of fun. But in this stunning debut solo album, that’s exactly what Ann Hampton Callaway demonstrates. What’s more, she’s able to get well beneath the surface of a generous array of classic pop songs by Arlen, Strayhorn, Kern, and many others, all taste, and, refreshingly, a saucy sense of fun. But in this stunning debut solo album, that’s exactly what Ann Hampton Callaway demonstrates. What’s more, she’s able to get well beneath the surface of a generous array of classic pop songs by Arlen, Strayhorn, Kern, and many others, all with first-class band arrangements by Mike Renzi and Michael Abene. A terrific set. R.H.

JOHN WESLEY HARDING
Why We Fight
SIRE/REPRISE 45032 (54 min)
Performance: Literate, likable
Recording: Crisp

Less acerbic than Elvis Costello, more musical than Billy Bragg, and at least as volatile as either of them, John Wesley Harding proudly and publicily wears the badge of folk protest singer. It’s not a type of music much in demand these days, which only enhances his sense of mission. He’s got wit, which offsets any tenency toward the leaden pretentiousness of the doctrinaire folk singer, and certain songs here draw on the kind of whipcrack dynamics that betray his punk-era coming of age (folk-rock never sounded like this in the Sixties).

Still, he’s not quite there yet. “Why We Fight” is a lengthy album whose politics are always correct and almost always obvious. He writes facilely about iconic figures (Hitler’s Tears. The Original Miss Jesus) and poses questions that are more well-intentioned than illuminating, like the recurring plea, “Where’s the truth around here today? / Where do fact and fiction separate?” (The Truth).

Harding burns brightest when he preaches least overtly, as in the gripping narrative and rapid-fire strumming of Ordinary Weekend or the countryish lament Me Against Me, which wisely makes no excuses for the self-destructive excesses of the narrator and his generation: “All the things we’ve done, think we should own up / How come we’re old but we’re not grown up?” It’s hard not to like Harding, but for now it’s also hard to muster enough enthusiasm to rave about him. P.P.

HONEYMOON IN VEGAS
EPIC EK 52845 (60 min)
Performance: Divorce now
Recording: Very good

The best part about Honeymoon in Vegas, the movie, is that there’s Elvis, Elvis everywhere, even falling from the sky. The worst part about “Honeymoon in Vegas,” the soundtrack, is that out of twelve singers, all of whom seem pleased as punch to pay tribute, not one comes close to duplicating Presley’s hunkahunka heat. Some attempt soundalike covers—Billy Joel does a Lizzie Borden to both All Shook Up and Heartbreak Hotel. And in
Wear My Ring Around Your Neck Ricky Van Shelton proves that he'd love to be an Elvis imitator, but that big, goofy hat simply clashes with his jumpsuit. Howlers abound: Bono yipping like a lapdog in heat (Can't Help Falling in Love), Willie Nelson so laid back in Blue Hawaii that the first wave would likely drown him, and John Mellencamp turning Jailhouse Rock into "serious" prison lore—he wants you to think he's got a homemade blade in his sock and the guts to use it. Bryan Ferry turns in an oddly detached though arresting Euro-version of Are You Lonesome Tonight, but only Vince Gill, Trisha Yearwood, and Travis Tritt make this CD truly listenable. In the end, "Honeymoon in Vegas" confirms that the King is still the King. A.N.

MAUREEN McGOVERN
Baby I'm Yours
RCA VICTOR 60943 (54 min)
Performance: Warm
Recording: Very good

One of the most versatile singers we have, at home with several contemporary pop styles as well as Broadway standards, Maureen McGovern takes the middle ground in this amiable new set. Working with easy-listening arrangements by Mike Renzi and Jeff Harris, she turns her even-toned light soprano to songs she grew up with in Ohio in the Sixties, songs by James Taylor, Neil Diamond, Bacharach-David, Lennon-McCartney, and a few others. While her generally soft, warm, and winsome versions often lack bite compared with the originals recorded by the likes of Dusty Springfield, Dionne Warwick, or the composer-performers themselves, they're all attractively sung. McGovern nearly overdubs her own background harmonies for many of the tracks.

R.H.

RECORDING: Flamboyant

The late Freddie Mercury, lead singer for Queen, behaved with such dignity and class when he was dying from AIDS last year that many critics felt guilty for having stinted on praise in reviewing his best recordings back in the Seventies. Thanks to Wayne's World, a current Queen revival has given those critics a chance to reassess the group's work and to give Mercury the respect they denied him when he was alive. Bohemian Rhapsody, his greatest hit, owed a lot to his love of opera, and he was so sincere about that love that he was able to persuade Montserrat Caballe, a top operatic diva, to collaborate with him for an album, and this is it.

Uninhibited, almost campy combinations of rock and opera, the eight songs draw flat-out enthusiastic performances from both stars. This apparently was the kind of music Mercury most wanted to perform—florid and flamboyant with lots of stunning effects. I'm glad he got to record it while he was in good form in the late Eighties. "Barcelona" is a unique souvenir of Mercury, and its posthumous release is a touching way of saying "Vaya con Dios" to a uniquely gifted rock showman.

William Livingstone

MORRISSEY
Your Arsenal
SIRE/REPRISE 26994 (40 min)
Performance: Mixed bag
Recording: Spotty

In "Your Arsenal" the irrepressible Morrissey dishes up another healthy serving of angst-on-wry accompanied by side orders of droolery and misery, but the flavors don't always blend. Witness the jarring sequence of "You're the One for Me, Fatty," which blithely...
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mixes compassion and insult, and *Seasick, Yet Still Docked*, a poignant song about loneliness and dislocation with nary a whiff of irony. The album finds Morrissey joined both by a new producer (Mick Ronson) and by an all-new band (again), which may explain its lack of a settled identity. Still, individual tracks are terrific, among them *Tomorrow* and *We Hate It When Our Friends Become Successful*, a bitter-sweet, rueful commentary on human nature that doesn't exclude the singer from its pur-view. Morrissey is a cool, jaded observer who's unafraid to let fly with pungent commentary, as in these lines from *Glamorous Glue*: "I used to dream and I used to vow / I wouldn't dream of it now / We look to Los Angeles for the language we use / London is dead, London is dead..."

**MIKE REID**
*Twilight Town*
COLUMBIA ACC 48967 (40 min)
**Performance:** Pearls and paste  
**Recording:** Very good

Mike Reid, the former All-Pro player for the Cincinnati Bengals, long ago proved himself an equally formidable songwriter, most notably with *Stranger in My House* for "A new frame of musical reference." Ronnie Milsap and *I Can't Make You Love Me* for Bonnie Raitt. In his second album as a singer, however, Reid saves the killer stuff—the bluesy *Love Without Mercy*, already recorded by Lee Roy Parnell, and his own wrenching version of *I Can't Make You Love Me*—till last, filling up the rest of his record with lightweight but earnest songs about family ties, blue-collar pride, and love and lust. *I Can't Make You Love Me* is simply one of the finest original songs ever written, but two songs here "emulate" Dire Straits riffs and feels, *Somebody* rips off the theme of Dave Loggins's *She Is His Only Need*, and *Workin' with the Right Tools* winds up with a mention of putting on "my cleanest dirty shirt." Kristofferson, anyone? A lot of these sound as if they were written in the same afternoon—with time left over for the early movie—and Reid's plain-brown-wrapper vocals don't exactly elevate them to melodic poetry. But when his heart's really in it, you'll know you've been hit by a man who knows how to tackle for a living.

**RISING SONS**
COLUMBIA/LEGACY C 52828 (63 min)
**Performance:** Occasionally brilliant  
**Recording:** Good for the period

Up till now, the Rising Sons have been essentially a footnote to rock history. A country/blues band before such things were trendy, the Sons released only one record—a flop single—during their brief career (1964-1966). But because the group was much esteemed by its peers (among others, the Byrds) and, more to the point, because it featured the now-famous Taj Mahal and Ry Cooder, a lot of people have heard of the Rising Sons without ever having heard their music. This new CD—the whole of an unreleased album plus some tunes recorded as possible singles—has been designed to remedy that situation, and if there's any justice it will, because on the evidence this was a potentially major and clearly original band. At their best, actually, what the Sons were doing is remarkably similar to what Cooder has done since the Seventies: render various American root musics (from Robert Johnson to Appalachian folk) with an intriguing mixture of electric and acoustic instruments (mandolin and slide guitar are featured prominently) mated to a rock beat. Some of the stuff sounds a trifle dated because of an inconsistent rhythm section (*Statesboro Blues*, for example, suggests a limp Lovin' Spoonful). But when everything clicks, as in *2:16 Train*, where Mahal's achingly soulful vocals and harmonica mesh to per-
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Singles
EPIC 52476 (65 min)
Performance: Summer
Recording: Varies

In contrast to the clever yet believable dialogue in the movie itself, the music in this nearly pure Seattle-scene soundtrack album plods like a cow ensnared in quicksand. The songs are ungainly vehicles for the tortuous, Led Zeppelin-in-hell rantings of Soundgarden, Alice in Chains, Mother Love Bone, and Pearl Jam. Throw in a few curve balls—an actual Zeppelin cover by Heart (masquerading as the Lovemongers), two follow-the-bouncing-ball pop readymades by Paul Westerberg, a stray Hendrix cut—and you've got confusion. The one bright moment is Mudhoney's Overblown, a home-town commentary that gets an A for candor: "Everybody loves us, everybody loves our town/...It's so overblown." P.P.

The Skeletons
Waiting
ALIAS A030 (55 min)
Performance: Winning
Recording: Good

If you're afraid rock-and-roll is on the terminal list, the Skeletons' wonderful new record, "Waiting," offers fourteen strong arguments to the contrary. The Skeletons are to the Midwest what NRBQ is to the East Coast: a band that plies its trade best on club stages, keeping the rock-and-roll flame alive and inspiring more devotion and loyalty among its cult following on a good night than someone like Michael Bolton will know in a lifetime. But unlike NRBQ, which generally turns to the studio, the Skeletons deliver the goods on record as well. The band's indomitable backbone is provided by its avuncular bassist, Lou Whitney, and the six-string host D. Clinton Thompson, who looks like he'd be working under the hood of a car if he weren't a musician. They've been together forever, playing in a succession of prior bands including the Symptons and the Morrells. And they sure know how to make a band rock—not always hard, but with unfailing steadiness underscored with genial, romping wit. "Waiting" is a feast, from the galloping, Sun Records-style rockabilly of Only Daddy (That'll Walk the Line) and Play with My Mind to the "Blonde on Blonde"-flavored folk-rock of Downtown and Things We Need. The Skeletons are not so much a band as a natural resource, and "Waiting" is a sure-fire antidote for the musical blahs. P.P.

Sonic Youth
Dirty
GEFFEN 24493 (59 min)
Performance: Spleenetic
Recording: Dirty

It's a dirty world, all right—unkempt, violated, out of sync, and teetering badly—and Sonic Youth leaves pissed-off smudgeprints all over the canvas of their latest grunge-pop masterpiece. There's an angry swagger bordering on the pathological in 100% ("Can you forgive the boy who shot you in the head? If you don't have a gun and go and get revenge?"), and the lyrics pull no punches in Youth Against Fascism ("I believe Anita Hill / Judge [Thomas] will rot in hell") or Swimsuit Issue (which snipes at the commodification of sex). About half of the songs, usually those sung by bassist Kim Gordon, pack maximum snarl and pummeling dissonance, but the rest tend toward more ethereal, arranged soundscapes.

The contrast in styles delineates a schism—between rage and resignation, between direct engagement and strategic retreat to a self-invented underground—that remains a conundrum the band's generation has yet to work out. The fraying fabric and internal contradictions embodied in "Dirty" are precisely the point, and Sonic Youth makes it brilliantly. Their angry, swarming guitars telegraph this nation's fitful unmaking every bit as well as a documentarian's camera, if you know how to listen. Not to be missed: an elliptical, tragic/
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SUGAR

Copper Blue
RYKO 10239 (45 min)
Performance: Powerful
Recording: Play loud

Bob Mould's first solo album ("Workbook") was a reflective interlude, and his second ("Black Sheets of Rain") was a dour exorcism. His latest, by his trio Sugar, is a return to the deliciously saturated meltdown of his best work with Husker Du. Maybe it's because he's working with a band again (or maybe it's just suggested by all the linkages between songs), but there's a drive and a unity to "Copper Blue" that hark back to such adrenaline-charged Husker classics as "New Day Rising" and "Flip Your Wig." Mould is fairly bursting with ideas and impatient to get them out; you can hear rekindled purpose in his singing and playing, which are all of prickly resolve. Pop hooks wrestle for space with grunge, and the tug of war gives the songs their spine-tingling energy. The first five tracks all have a controlled fury worthy of the Who, culminating in the startling, epiphantic Hoover Dam.

Throughout "Copper Blue," Mould turns intimations of mortality into powerful music with an apocalyptic cast, reaching an otherworldly peak in Slick, with its reality-bending guitar swoops and strange mutterings: "I want to be released from this dream / I want to be another machine," he intones. "Copper Blue" is more like a vision quest than an album, and a downright bracing adventure it is too. P.P.

Jefferson Airplane Loves You.
RCA 61110 (three discs or cassettes).

Because they were flaky San Francisco hippies, the Airplane isn't taken as seriously as it deserves to be, either, but no matter: They were genuine originals, and in concert at least, they offered one of the most monumental instrumental sounds of all time. This set is a greatest-hits package fleshed out with unreleased live tracks and demos. Most of it is musically impressive, but the sonics, alas, are a different story. No major band was ever as badly produced as the Airplane, and RCA has missed a opportunity to rescue the far more palatable mono mixes of the early material from vinyl oblivion. Still—worth owning. Steve Simels

TALES FROM THE VAULTS

THE RASCALS

RHINO 71031 (two discs).

Because the Rascals were basically greasers from New York City's outer boroughs, they have never been taken as seriously as they deserve despite an impressive string of hits. Nevertheless, they were one of the best white rock'n'roll bands of their (or any other) day, and singer-keyboardist Felix Cavaliere was in many ways an American Steve Winwood. This set is a chronological retrospective drawn from the Rascals' entire ten-album career, and most of it is flat-out great. Special kudos to Rhino for using the mono single mixes for Disc One, which contains most of the hits—all previous CD versions of these songs have been in unlistenable stereo.

JEFFERSON AIRPLANE

Jefferson Airplane Loves You.

Because they were flaky San Francisco hippies, the Airplane isn't taken as seriously as it deserves to be, either, but no matter: They were genuine originals, and in concert at least, they offered one of the most monumental instrumental sounds of all time. This set is a greatest-hits package fleshed out with unreleased live tracks and demos. Most of it is musically impressive, but the sonics, alas, are a different story. No major band was ever as badly produced as the Airplane, and RCA has missed a opportunity to rescue the far more palatable mono mixes of the early material from vinyl oblivion. Still—worth owning. Steve Simels

SUZANNE VEGA

99.9º

AZM 31/534 0005 (37 min)
Performance: Post-lysergic
Recording: Excellent

Contrary to rumor, this isn't really Suzanne Vega's industrial record. In fact, what she and the producer, Mitchell Froom, have come up here with, despite a few fashionable percussive/rhythmic trappings, has a lot more in common with some of those arty, post-'Sgt. Pepper' L.A. singer-songwriter records from the late...
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ROBERT BONFIGLIO
Through the Raindrops.
HIGH HARMONY 1000 (43 min);
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The classical harmonica virtuoso Robert Bonfiglio has made an upbeat pop recital that is sometimes plaintive, but always pleasant. An album like this one could give crossover a good name.
William Livingstone
RADNEY FOSTER
Del Rio, TX 1959. ARISTA 18713 (40 min).
Foster, formerly of the crossover country act Foster and Lloyd, goes solo here, but, like his earlier work, this all rings rather hollow, sort of like Rodney Crowell by the numbers. Great-sounding band, however.
S.S.
JAIME KYLE
The Passionate Kind.
ATCO 92142 (41 min).
Featuring the hit single Damo, I Wish I Was Sophie B. Hawkins.
S.S.
MO' MONEY
PERPECTIVE 28968 1004 (73 min).
A slight movie yields, in this case, a slight soundtrack album, despite an all-star lineup (Janet Jackson, Public Enemy, others).
S.S.
MONKS OF DOOM
Forgey. IRS 13163 (56 min).
This is the second band to have been formed by ex-Camper Van Beethoven, but whereas David Lowery's Cracker turned smart and by ex-Camper Van Beethovens, but whereas David Lowery's Cracker turned smart and

S.S.
NORTHERN EXPOSURE
MCA 10085 (43 min).
From the self-consciously quirky TV show, here's some of the self-consciously quirky musical fare played on its fictional radio station. WKBW—Booker T & the MGs and Nat King Cole cheek to cheek with Frederic von Stade. All the tracks are quite delightful, to be sure, but I'm not sure they really work together if you can't see Janine Turner.
S.S.

Sixties and early Seventies than with bands like Nine Inch Nails. That's a roundabout way of saying that "99.9°F" is a tad psychedelic (in the old-fashioned sense of the term) and that it doesn't work more often than it works.

There aren't many departures from Vega's previous oeuvre in the lyrics. She's still going on obliquely about sex and movies and childhood and who knows what else, and she's still dishing out her inimitable post-folkkie sing-speak, sounding even more like Astrud Gilberto on beladonna than usual. Most of the time, however, there don't seem to be any real songs hidden in Vega and Froom's admittedly imaginative sonic landscape, just interesting images and snippets of tunes that don't really add up to much. Big exception: As Girls Go, an eerie, icy meditation on gender with a hypnotic melody and a guitar solo by Richard Thompson at the end that's amazing even for him. The rest, to these ears, is a respectable experiment that didn't quite pan out.

JAZZ

BENNY CARTER
Harlem Renaissance
MUSICMASTERS JAZZ 61080 (two discs, 101 min)
Performance: Extraordinary
Recording: Good remote

The other night I heard a pea-brained talk-show host introduce a forty-year-old jazz player as the "legendary" so-and-so. I suppose forty is old to those who wear their caps backward and surround themselves with baggy-trousered hip-hoppers, but the term "legendary" is bandied about too often by people who equate it with "old." That brings us to the composer and multi-instrumentalist Benny Carter, who is eighty-five and not the least bit legendary. He is, however, extraordinary, and his long career path often crossed those of legends. In 1936 it led him to London, where he became an arranger at the BBC, and in the early Forties it led him to Hollywood, where he found lucrative work scoring films and, later, television productions. Fortunately, Carter's path also frequently led into recording studios, yielding an impressive legacy of performances that not only form an important part of American music history, but, indeed, tell it. Last February Carter's path led to the New Brunswick (New Jersey) Cultural Center for a birthday concert that included two of his extended compositions, Tales of the Rising Sun Suite and Harlem Renaissance Suite. That concert was recorded and has now been released on CD. It is well worth your ears.

The opening has Carter leading a disciplined big band of New York studio musicians through imaginative approaches to such standards as I Can't Get Started and How High the Moon and in the first big-band recording of his beautiful ballad Evening Star. So much for the appetizer—the meat of this serving is the two

S.S.
time and place, and no wonder: Carter was born in New York City, and he lived in Harlem during the renaissance period. All in all, a remarkable set by a jazz giant. C.A.

**BETTY CARTER**

**It's Not About the Melody**  
VERVE 314 515 870 (71 min)  
**Performance:** In top form  
**Recording:** Very good

This album is aptly titled, for Betty Carter's specialty has always been the utter transformation of any song she chooses to make her own. Bending not only melodic lines but even the notes themselves, commonly casting them nearly half a pitch below their usual value, she lives up to the nickname she acquired years ago of "Betty Bop." Once she tackles a song, we know it's not going to come out the way we expected, but the transformation can bring many delightful surprises. She doesn't let us down in this new set, which mixes a few originals with standards, even going far beyond what we might have anticipated thanks to the quality of the musicians and the truly exceptional arrangements.

The opener, "Naima's Love Song," an exciting post-bop style collaboration between Carter and the pianist John Hicks, is built on a series of descending chromatic riffs that reiterate the energy and daring of an earlier era. "Stay As Sweet as You Are," with Mulgrew Miller on tenor saxophone. They help Carter achieve her very best.

**NAT KING COLE**  
**The Complete Capitol Recordings of the Nat King Cole Trio**  
MOSAIC 138 (eighteen discs; 16 hrs, 15 min)  
**Performance:** Excellent transfers  
**Recording:** Brilliant transfers

I think it's safe to say that Nat King Cole has won a new following because of the recent clever update of "Unforgettable," which electronically combined his original recording with a new one by his daughter, Natalie. That recording probably also rekindled the interest of veteran Cole fans, who can delight in the fact that the master singer/pianist is well represented on CD with reissue of his 1940 Decca recordings, unearthed concert performances, and virtually every hit he ever had on Capitol.

Nothing else, however, has been as comprehensive and lovingly compiled as "The Complete Capitol Recordings of the Nat King Cole Trio," a monumental Mosaic set that no true Cole fan should be without. This limited-edition (only 10,000 copies) box of goodies maintains Mosaic's high standards for sound and packaging, but the title is slightly misleading. These are, indeed, all the trio recordings, but the set also contains selections—like "Orange Colored Sky," "Nature Boy," and "The Christmas Song"—that feature big bands or string sections, as well as some non-Capitol recordings, such as early trio sides that originally appeared on the Excelsior, Atlas, and Premiere labels.

I won't even try to choose favorites from the 274 selections, for at no point did I feel I was hearing anything less than wonderful. Cole was a brilliant jazz pianist who could have made it without ever singing a word, but he just happened to have an exceptional voice, too, and that's what brought him across to the pop world. His crossing disappointed jazz purists (myself included) who had become fans of the trio and admired Cole as a dynamic instrumentalist who could liven up an already cooking jazz at the Philharmonic concert. We were wrong, for the Nat Cole delivered even the most banal song with uncommon artistry, and I have long since retuned my ears. There is only one thing wrong with releases of this scope: Most people can't afford them. But it would be worth skipping a few other delights for this one. It's a true gem that will sparkle for years to come, and with over 16 hours of music, it certainly won't become repetitious.

**GONZALO RUBALCABA**

**Images: Live at Mt. Fuji**  
BLUE NOTE CD-99492 (66 min)  
**Performance:** Dynamic  
**Recording:** Excellent remote

The twenty-nine-year-old Cuban pianist Gonzalo Rubalcaba caused quite a stir when he appeared with Charlie Haden and Paul Motian at the Montreaux Jazz Festival two years ago. A year later Haden—who had first heard Rubalcaba play during a 1986 visit to Cuba with the Liberation Music Orchestra—joined drummer Jack DeJohnette in supporting the pianist in his first Blue Note album, "The Blessing." That album was made in Canada, and the follow-up, "Images," is a live set from the 1991 Mt. Fuji Festival in Japan. Politics prevents Rubalcaba from working in Cuba, and the follow-up, "Images," is a live set from the 1991 Mt. Fuji Festival in Japan. Politics prevents Rubalcaba from working in Cuba, and the follow-up, "Images," is a live set from the 1991 Mt. Fuji Festival in Japan.

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Len Feldman, Video Review March 1991

Len Feldman, Audio April 1992

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BEETHOVEN: String Quartet No. 16
SCHUBERT: Quartet in D Minor
("Death and the Maiden")
Hagen Quartet

DEUTSCHE GRAMMOPHON 432 814 (68 min)
Performance: Excellent
Recording: Excellent

The still-youthful Hagen Quartet, always assuring pleasure with the crisp, alert character and unfailing tastefulness of its playing, seems to proceed from strength to strength. This CD offers a presentation of Schubert's much-loved and much-recorded D Minor Quartet that is surprisingly convincing on the dramatic level as well as the purely musical one. The quartet takes the first-movement repeat, not as a mechanical gesture but as a means of realizing the dramatic implications of the music and giving it room to breathe and expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand. The stark, vibrato-free statement of the theme at the opening of the slow movement is extraordinary, and its promise is beautifully fulfilled throughout the chain of variations that follows. The intensity continues to build through the scherzo and the subtly conception that follows. The intensity continues to expand.

The contrastin inner movements are fully characterized without a hint of excess, and the folkish tune in the middle of the finale makes its point with exceptional poignancy instead of merely inserting a touch of amiability. The recording itself is virtually ideal. R.F.

BERNSTEIN—BAYLESS:
West Side Story Variations
John Bayless
ANGEL 54507 (69 min)
Performance: Dazzling
Recording: Excellent

What! Zowie! Powa! From the opening chords of the prologue, the cascade of pianistic fireworks that John Bayless lets loose here is simply staggering. The young pianist certainly has technique to spare, and he uses it with wit, color, imagination, rhythmic vibrancy, and genuine dramatic feeling in this set of eleven "transcriptions and improvisations" based on themes from Leonard Bernstein's great score for West Side Story. Jazz pianists have been given us original variations on show music for years, but it's exciting to hear a talented classical pianist digging into Bernstein's unique stylistic hybrid as impressively as Bayless does here—and with such topnotch recorded sound.

ROY HEMMING

BRAHMS: Piano Sonata No. 1
LISZT: Consolations No. 6; Hungarian Rhapsody No. 17; Harmonies du Soir; Scherzo and March

Sviatoslav Richter
RCA VICTOR 60859 (60 min)
Performance: Outstanding
Recording: Live and close-up

It was under Brahms's patronage that the publishing house of Breitkopf and Hartel undertook the first complete edition of Schubert's works in 1884, and Brahms himself edited the piano sonatas. Just how much he venerated Schubert throughout his life is brought home stunningly by Sviatoslav Richter's remarkable performance of the big sonata he composed at the age of twenty—a pretty impressive Op. 1, with at least as many "pre-echoes" of things to come as glances toward the past. Liszt's contemporaneous Scherzo and March will come as a discovery to most listeners. An intriguing one it is, and a fine finale to this program with, among other qualities, its reminders of Liszt's own admiration for Schubert. But Richter makes the entire hour an experience of shared discovery, something that goes far beyond mere excitement and makes one wonder why these big pieces are so unfamiliar. The close-up recording tends to stress the instrument's percussive qualities, but it is otherwise agreeably lifelike. The audience is absolutely hushed throughout the performances, and applause is included only after the final piece.

R.F.

BRUCKNER: Symphony No. 9
Vienna Philharmonic. Bernstein
DEUTSCHE GRAMMOPHON 435 350 (66 min)
Performance: Awesome
Recording: Impressing

BRUCKNER: Symphony No. 9
Cincinnati Symphony, López-Cobos
TELARC CD 80299 (63 min)
Performance: Sinewy
Recording: Close

At least a half-dozen currently available recordings of the Bruckner Ninth Symphony are landmark interpretations and some realizations. We can add this Leonard Bernstein reading, recorded at Vienna Philharmonic concerts in early 1990, to that list. Bernstein took a highly charged view of the mighty score, and he had the Vienna players with him every inch of the way. The heft of the string body and the lung power of the brass can only be described as awesome from first to last, reaching a peak in the soul-shattering dissonant climax of the concluding adagio. No matter how many Bruckner Ninths you may have, do not pass up this one.

Jesús López-Cobos and the Cincinnati Symphony, adding the Ninth to their ongoing Bruckner cycle, take a leaner, less weighty view of the music than the Viennese. We get a sinewy first movement and a scherzo where the rapid central section tends to soften the effect of its characteristic dotted figurations. The adagio simply does not match the Vienna performance in impact and intensity. Telarc's sound is on the close-up side and reveals every bit of inner detail. All of that may appeal to those who favor an analytical view of Bruckner, but if you want a dare-all reading that strives for the far reaches of eternity, Bernstein's is the one to get.

D.H.
New Christmas CD's

THE BOSTON CAMERATA:
A Baroque Christmas
Elektra/Nonesuch 79265 (62 min). Music of Monteverdi, Purcell, Schein, Charpentier, and Anonymous performed in historically informed fashion by the Boston Camerata chorus and players, accompanied by soloists from the Schola Cantorum of Boston, all directed by Joel Cohen.

GLORIAE DEI CANTORES SCHOLA:
The Chants of Christmas
Gloriae Dei Cantores GDCD 005 (72 min). Distributed by Paraclete Press, Orleans, MA 02653; 1-800-451-5006. Gregorian chants for Christmas performed by the Gloriae Dei Cantores Schola, a subgroup of the forty-four-voice American choir Singers to the Glory of God.

SLEIGH RIDE!
RCA Victor 61373 (72 min). A compilation of Christmas favorites performed by Piazzolla Domingo, the Vienna Choir Boys, Arthur Fiedler and the Boston Pops, the Canadian Brass, the Robert Shaw Chorale, and the Philharmonia Virtuosi.

DELIUS: Violin Concerto; Two Aquarelles; On Hearing the First Cuckoo in Spring; Summer Night on the River; Fennimore and Gerda, Intermezzi; Irmelin, Prelude; Dance Rhapsodies Nos. 1 and 2
Little, Welsh National Opera Orchestra, Mackett
ARGO 433 704 (74 min)
Performance: Warm and vital
Recording: Excellent

Ever since encountering, on '80s, the first recording of the Delius Violin Concerto (by the dedicatee, Albert Sammons, with Malcolm Sargent conducting), I have had a soft spot for it. Its neglect in the concert hall, I suppose, is because it is totally lacking in obvious virtuoso tricks. Out of a two-bar opening there develops a continuous flow of melody for the soloist, which toward the end takes on a danceable aspect. Of course, what makes the whole thing go is the gorgeous Dorian harmonic texture and cunningly crafted orchestral writing. In this recording the violinist Tasmin Little and the conductor Charles Mackerras take a more than usually forthright approach to the concerto, and it works splendidly on every level—as music, as tone-poetry, and as effortless execution.

The very generously filled CD mixes such popular Delius masterpieces as On Hearing the First Cuckoo and Summer Night on the River with lesser-known but substantial scores like the two dance rhapsodies. My favorite among the other small pieces is the set of Two Aquarelles that Delius's amanuensis, Erik Fenby, arranged for strings from a pair of wordless choral pieces. The orchestral playing and recording are faultless throughout—clear in texture and warm in ambience. Recommended unreservedly.

D.H.

HANSON: Mosaics; Piano Concerto; Symphony No. 5 ("Sinfonia Sacra"); Symphony No. 7 ("A Sea Symphony")
Rosenberger, Seattle Symphony, Schwarz DELOS 3230 (68 min)
Performance: Mostly very good
Recording: Mostly excellent

Gerard Schwarz and the Seattle Symphony here conclude their survey of the major works of Howard Hanson, focusing mainly on the seven symphonies. The relatively brief but telling Mosaics, from 1938, comes first on the CD. Cast in free-variation form on an eight-note quasi-passacaglia theme, it is meant to evoke the Byzantine interior of the great cathedral of Palermo, Sicily. The orchestral texture is appropriately colorful, the concluding pages powerful, and the Delos sonics do it full justice. The 1948 Piano Concerto, in four movements, is rather atypical Hanson if one goes by the symphonies and choral works. Save for the slowly moving movement, it almost seems a homage to George Gershwin. Carol Rosenberger's pianism is nimble and Schwarz's orchestral partnering alert. Excellent balance and overall sound throughout.

The one-movement Sinfonia Sacra (1954) is a particular favorite of mine. Tense and gripping to both intellect and emotion, it displays Hanson's mastery of passing dissonance to superb effect and reveals his profound religious impulse. Schwarz's reading is marginally less taut than Hanson's own 1954 mono recording (which I produced for Mercury) and lacks some of the salient accents in the composer's version. I also find the brass overly reticent (or off-mike?) in the work-up to the climax before the concluding chorale. The Sinfonia Sacra is the only major disappointment I have encountered in the entire Delos Hanson cycle.

When Hanson composed his "Sea Symphony" in 1977, he was in his eighty-first year and retired for more than a dozen years from his directorship of the Eastman School of Music. Intended as a valedictory, the work is brief, direct, and unashamedly illustrative, its heart the poignant adagio. Schwarz, the orchestra, and the Seattle Symphony Chorale all give of their best here, as does the recording crew. The only improvement one might want is a shade more choral presence here and there.

Regardless of any reservations I might have about this particular disc, Schwarz and all his collaborators, as well as Delos Records, deserve the highest possible praise for the conviction and generally high quality of their recordings of music by Hanson and other American composers of earlier generations who have fallen into undeserved neglect. D.H.
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HAYDN: Symphonies No. 101 ("The Clock") and No. 104 ("London")
Orchestra of St. Luke's, Mackerras
TELARC 80311 (56 min)
Performance: buoyant, spry
Recording: clear, solid

These are great, good-humored versions of the two most popular of Haydn's late masterpieces. Charles Mackerras takes all the repeats, observes all the nuances, keeps the tempos well up to the mark, and generally transmits all the wisdom and wit of this eternally youthful music. Best of all, he goes for a vigorous, striding quality that is very tangible and down to earth. Haydn spent most of his life in a country court, and his music was possibly the earliest to reflect the countryside and rural life rather than the fashions and tastes of the big-city aristocracy. Those country qualities—making the music almost rough and ready at times, but never lacking in intellectual content—are strongly reflected here and add immeasurably to the hale-and-hearty performances of these performances. What common sense! Solid, crisp, common-sensical recordings, too.

E.S.

accompanied a celluloid image of some historic figure en route to the guillotine.

Miklós Rózsa's Concerto for String Orchestra was inspired by his departure from his native Hungary, and though it's not in a class with Bartók's String Quartet No. 6, which was written under similar circumstances, the slow movement is absorbing and moving. The prize, however, is Herrmann's 1936 Sinfonietta for String Orchestra. Much more forward-looking than his Symphony No. 1, he later cannibalized it for his innovative score for Psycho. His harmonies were perhaps never more original and penetrating than in this piece, which he revised shortly before his death in 1975 and never had a chance to record himself. It has all the confidence and assurance that the symphony lacks, and it's a bracing addition to the twentieth-century chamber-orchestra repertoire.

D.P.S.

JANÁČEK: Tarus Bulba; The Fiddler's Child; Jealousy; The Cunning Little Vixen, Suite
Czech Philharmonic, Bělohlávek
CHANOS 9080 (60 min)
Performance: strong, home-grown
Recording: atmospheric

The more of Janáček I hear, the more convinced I am of his profound originality. Even relatively early and conventional works like the programmatic tone poems Tarus Bulba and The Fiddler's Child, and the deleted overture to Jeux, retitled Jealousy by the composer himself, have an inner glow in performances like these. Passion? Love of life? Slavic soul? All of those qualities plus an original turn of musical mind, here interpreted by the composer's compatriots, add up in a striking way. Although Janáček matured in his last years, it did not happen suddenly; he was, indeed, his own man for most of his creative life.

In 1930 Václav Talich, the founder and longtime director of the Czech Philharmonic, made a suite from The Cunning Little Vixen, one of Janáček's highly original late operas and an extraordinary lyric poem to the Czech countryside. The suite is played here by the same orchestra under Talich's successor, Jiří Bělohlávek. Although orchestral suites from operas are not very well regarded these days, this one has a lot of appeal in the way that it distills the composer's nature lyricism in purely instrumental terms.

The performances are, so to speak, home grown; one can hardly imagine anything better. Ditto the recordings.

E.S.

LISTZ: Lieder
Fassbinder; Thibaudet
LONDON 430 512 (55 min)
Performance: insightful
Recording: very good

In tackling Franz Liszt's fascinating, multilingual, and uneven song legacy, the mezzo-soprano Brigitte Fassbinder has concentrated in this recital on its largest component, the German lieder. She bypasses some obvious choices (Die Loreley, Es muss ein Wunder bares Sein) to include several rarities and, possibly, first recordings among the eighteen selections. The emotional range goes from intimate communication to operatic outpouring. Liszt could be concise, but more often he
favored the rhapsodic approach, repeating poetic lines whenever it suited his musical purpose. Fassbaender understands the composer's expectations ("performing Liszt is a source of immense pleasure since there are no limits to what is expected of the voice," she says). We don't go to this artist for exceptional smoothness and refinement: There are explosive and even strident climaxes and many wavy sustained notes, but also many rewarding moments of insight and evocative rightness (as in Wunderer's Nachtlied, Und Wir Dachten die Toten, Blume und Duft). She is an imperfect vocalist but a committed and convincing interpreter. Jean-Yves Thibaudet performs the demanding piano parts with unostentatious virtuosity. G.J.

Witold Lutoslawski's hallmark has long been a rigorous sense of order and form, but his recent music has taken on a freer, even elusive quality. His Concerto for Piano and Orchestra, one of his finest works, is invitingly familiar, full of thick, pianistic harmonies like those in any number of late-Romantic piano concertos, all transformed into a rich, eventful texture that's distinctly Lutoslawskian. Nevertheless, the absence of melody can leave the listener confused, as if just awakening from a very pleasant but unremembered dream.

Repeated listening reveals the music's unconventional structure: Themes stated in the relatively brief opening movement are developed in the two middle movements, which grow ever longer, and climax in the finale, the real weight of the concerto lies. But Lutoslawski takes pains to blur these lines: The four movements are played without a break, and often there's so much difference between the harmonic context of a theme's exposition and development that it's not easy to recognize the connection. Lutoslawski can be coy as a conductor, too. He is loath to make the theme of the fourth movement passacaglia too obvious, keeping it at a nearly inaudible pianissimo. Even Krystian Zimerman's interpretation of the solo part has less contrast and emotionalism than he usually brings to a piece. It's as though Lutoslawski wants the music to be the medium, not the message, seeking to beguile the listener with its humor and feeling without calling attention to itself.

The other pieces here are far more than filler. *Chain 3*, written for the Cleveland Orchestra, is another in a series of works constructed out of various linked themes. Novellette, written for Georg Solti and the Chicago Symphony, is tailored-made for that team's explosive range of orchestral color. In short, this is one of the most valuable contemporary-music records of the year. D.P.S.

**PAGANINI: Twenty-Four Caprices**
Eliot Fisk
MUSCIMASTERS 67092 (79 min)
*Performance: Authoritative  
Recording: Excellent*

With his transcription of Paganini's *Twenty-Four Caprices* for Violin, Eliot Fisk has made a wonderful addition to the guitar repertoire, and his world-premiere recording of this large work is both technically and interpretively the most impressive performance I have ever heard from him. It's long but sufficiently varied in mood that it never becomes monotonous, and Fisk plays with enough urgency and authority to hold your attention throughout. He draws from the instrument some tonal colors and effects I had never heard from a guitar before, as in the eerie, atmospheric Caprice No. 6. In the languid opening sections of No. 21 it sounds like the organ in the soundtrack of the classic film *The Third Man*. Paganini's famous theme, which was used for variations by Brahms, Rachmaninoff, George Rochberg, and others, appears in Caprice No. 24, where Paganini's own variations bring the work to a resounding, virtuosic close. My reaction on first hearing this disc was to return to the beginning and play the whole thing over again.

William Livingstone

**RODGERS AND HAMMERSTEIN:**
*The King and I*
Andrews, Kingsley, Home, Salonga, Bryson;
Hollywood Bowl Chorus and Orchestra, Mauerci
PHILIPS HBO 007 (64 min)
*Performance: Vividly eloquent  
Recording: Lushly stunning*

This easily tops musically and in sound quality the five previous recordings of *The King and I* that I know. It also offers more of Richard Rodgers's ingratiating score than any of the others. Most interesting, it mainly uses the large-scale (and Oscar-winning) arrangements that Alfred Newman and Ken Darby made for the 1956 film version rather than the skimpier Broadway orchestrations—and, for this score at least, that's a plus. Two songs that were written for the film but then dropped are included.

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**America's Oldest Orchestra**

The New York Philharmonic is celebrating its 150th anniversary during the 1992-1993 season in a variety of ways befitting America's oldest orchestra. Many of the season's subscription concerts will feature works that had their world or U.S. premieres at the Philharmonic, including no less than Dvořák's Ninth Symphony ("From the New World"), Beethoven's Ninth (the "Choral"), and Mahler's Sixth, Gershwin's *An American in Paris*, and Bartók's *Music for Strings, Percussion, and Celeste*.

But the celebration involves more than just looking back over the orchestra's impressive history. There will be thirteen world premieres from the Philharmonic's 150th Anniversary Commissions, a series of thirty-six new works to be introduced over the next ten years. Among those being performed this season are Olivier Messiaen's last work, *Eclairs sur l'au-Dela*, and pieces by Oliver Knussen, Ellen Taaffe Zwilich, and David Diamond.

At the 150th Anniversary Concert on December 7, the Philharmonic's current music director, Kurt Masur, will be joined by two of his predecessors, Pierre Boulez and Zubin Mehta. The concert will be televised nationwide as part of the Live from Lincoln Center series on PBS.

Teldec plans to make several live recordings during the anniversary season. Sessions are already planned for the Beethen Fifth, Dvořák Eighth, and Shostakovich Thirteenth symphonies, all conducted by Masur. In November Teldec released a Mahler First Symphony coupled with the Songs of a Wayfarer, sung by the baritone Hákan Hagegård, and next March brings the two last recordings from Masur's first season with the Philharmonic (1991-1992): Franck's Symphony in D and Les Éolides and Brahms's Symphony No. 2 and Academic Festival Overture.

Robert Ripp
BRAHMS: Symphony No. 4.
SCHOENBERG: Five Pieces for Orchestra. Royal Concertgebouw Orchestra, Chailly. LONDON 453 151 (58 min).
The wonderful Dutch orchestra never fails to provide the right sound for Brahms, and Chailly has given us fine accounts of the first two symphonies. His Fourth, though, lacks momentum and suggests a conscious effort to avoid any impression of vitality, and his approach in the Schoenberg (an intriguing companion work) is devastatingly bland. The sound is less well defined, too, than one expects on this label. R.F.

ROUSSAL: Symphony No. 4; Sinfonietta; DEBUSSY: La Mer; MILHAUD: Suite Provençale. Detroit Symphony, Järvi. CHANDOS 5072 (68 min).
Neeme Järvi has his orchestra in fine fettle here, but the interpretative results are variable. His Roussel is cogent and clear, if without the sense of animated commitment that Munch, Ansermet, or Dutoit brought to the Fourth Symphony. La Mer is smooth enough but a little lacking in power. Milhaud's enchanting suite is decidedly disappointing, with tempos that seem deliberately at odds with the character of the respective movements. R.F.

BERLIOZ: Symphonie Fantastique; Overtures to "Beethoven at Bonnict" and "Le Corsaire." Royal Philharmonic, Temirkanov. RCA VICTOR 61203 (72 min).
The solo winds play elegantly, but this Fantaisique under Yuri Temirkanov lacks passion. Also, there are no cornets in the ball movement and no repeat in the "March to the Scaffold" (the hero being led there in unseemly haste). and the bells in the "Witches' Sabbath" are anemic. Both overtures, however, are played with spirit. The recorded sound is good but low-level. D.H.

DVORÁK: Symphony No. 9; In Nature's Realm. Vienna Philharmonic, Ozawa. PHILIPS 422 996 (60 min).
Many of Seiji Ozawa's recent recordings haven't exactly set the world on fire, but this is one that ought to. The live recording of Dvořák's "New World" Symphony not only has the rhythmic snap and meticulous detail Ozawa usually provides but also a combination of electricity and nostaligic ache not often encountered in anybody's recordings of this work. But not even Ozawa and the Vienna Philharmonic can make the filler, the tone poem In Nature's Realm, seem like more than minor Dvořák. D.P.S.

TRUMPET CONCERTOS. Hannes, Wolfgang, and Bernhard Laubin, English Chamber Orchestra, Simon Preston. DEUTSCHE GRAMMOPHON 43 817 (46 min).
The arcane, lost art of Baroque clarino playing is beautifully recreated by the Laubins in this set of Kapellmeister concertos. Those eighteenth-century players had nothing but a length of pipe and a mouthpiece—they did everything with lips and lungs! Today's trumpeters use a valve mechanism and fancy fingering; even so, it is quite an accomplishment to play this music so well. The Albini is an arrangement of an oboe concerto, the concertos by Telemann, Rieghuber, Francheschini, and Vivaldi all multi-trumpet fanfares that probably took only minutes to write, and hardly any longer to play. A flash of shiny, brassy brilliance and all is dust—but what brilliance! E.S.

SIBELIUS: Symphony No. 2; Tapiola. San Francisco Symphony, Blomstedt. LONDON 433 810 (69 min).
Herbert Blomstedt takes a fairly cool, low-voltage view of the Sibelius Second, save in the windswept scherzo. Splendid brass work here, but it overpowers the strings a bit. A good, serviceable Tapiola and a darkly introspective Valse Triste. Good but not spectacular sound. D.H.

TCHAIKOVSKY: Symphony No. 5; Francesca da Rimini. Philadelphia Orchestra, Muti. EMI 54338 (73 min).
Except for the final movement of the Fifth Symphony, both of these performances strike me as more efficient than exciting. Certainly there was a greater sense of involvement in Riccardo Muti's earlier recording of the Fifth with the Philharmonia, and there are more persuasive accounts of both works now—though few more handsomely recorded. R.F.

ROUSSAL: Symphony No. 5; Sinfonietta; DEBUSSY: La Mer; MILHAUD: Suite Provençale. Detroit Symphony, Järvi. CHANDOS 5072 (68 min).
Neeme Järvi has his orchestra in fine fettle here, but the interpretative results are variable. His Roussel is cogent and clear, if without the sense of animated commitment that Munch, Ansermet, or Dutoit brought to the Fourth Symphony. La Mer is smooth enough but a little lacking in power. Milhaud's enchanting suite is decidedly disappointing, with tempos that seem deliberately at odds with the character of the respective movements. R.F.

VIVALDI: The Four Seasons; three other concertos. I Filarmonici del Teatro Comunale di Bologna, Chailly. LONDON 430 697 (70 min).
Performance: Sweet, lyrical Recording: Clean, elegant

I'm not sure that the world needed this new recording of The Four Seasons, even by such distinguished and indubitably Italianate musicians as these. The special interest lies in...
the three other strong but lesser-known, hence fresher works. The "Concerto for the Feast of San Lorenzo" features, of all things, clarinets (they weren't supposed to be used in symphonic music until Mozart's time, but Vivaldi apparently had already thought of everything). The curious and muted "Concerto Funèbre," for the funeral of some long-forgotten dignitary, has an odd and highly original orchestration. The virtuoso "Concerto for the Orchestra of Dresden" is, even more than its companions, a highly developed and "modern" piece of work in a stormy and dramatic style.

The performances, led by Riccardo Chailly, are on a uniformly high level: sweet, clean, outstandingly lyrical, relaxed rather than intense. The recording, made in the tiny eighteenth-century theater of a Bolognese villa, is delicious.

E.S.

Collections

KATHLEEN BATTU!: At Carnegie Hall
DEUTSCHE GRAMMOPHON 435 440 (75 min)
Performance: Topnotch
Recordings: Excellent

Recorded live in April 1991, during the hallowed hall's centennial series, this generous recital CD reaffirms the soprano Kathleen Battle's oft-proven virtues: limpid tones used with exquisite refinement, allied to a winning stage presence. The program highlights her strengths, with arias by Handel and Mozart, two of Richard Strauss's soaring Brentano lieder, Adele's Laughing Song from Johann Strauss's Die Fledermaus, four Liszt songs on texts by Victor Hugo, and four spirituals—all performed charmingly, expertly, and with seemingly effortless virtuosity. More surprising is the lovely and knowing treatment of four Rachmaninoff songs. A few notes scattered throughout the program fall short of dead-center intonation, but that goes with a live recording, as does applause, which ranges here from enthusiasm to near-hysteria. Margo Garrett is the excellent pianist. G.J.

THE SYLVAN WINDS:
Jongen, Bernard, Schmitt, and D'Indy
KOCH 3-7081-2H1 (64 min)
Performance: Diligent
Recording: Pleasant

In 1879 a certain Paul Taffanel founded the Society of Wind Instruments in Paris and created a bit of a boomlet for wind music as an art form. This record is a recreation of a time in late nineteenth- and early twentieth-century Paris when wind music was respectable and popular. I wish I could say that the music is all wonderful stuff undeserving of its neglect, but at least some of it has charm.

The Divertissement in F Major of Jean Emile Auguste Bernard (1843-1902), the earliest piece in the collection, has a certain Classical cachet. Vincent d'Indy's Chanson et Danses (1912) is a profoundly mixed bag alternating a rather uninspired lyricism with some striking and dancy outbursts. The Florent Schmitt Lied et Scherzo, dating from 1910, has a kind of genial exoticism. Any of these would have made a better lead-off piece than the Joseph Jongen Concerto for Wind Quintet. Written in 1942 during the German occupation of Belgium, it has a polite, sad, defeated air about it.

The Sylvan Winds started life as a wind quintet, but most of this music required them to increase their forces by as much as 100 percent. They are an excellent group of young players, and their praiseworthy and diligent efforts are very well recorded.

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UMB
Computing

SOME time ago, I incautiously wrote in this space that the computer world had been surprisingly reluctant to provide analytical software addressing the matters of speaker placement and room acoustics. Naturally, a reasonably well-developed personal-computer program for these applications came in the mail almost the next day, and more are said to be getting into circulation, although my efforts to trace them are just beginning to be successful. Meanwhile, pride of first place goes to “The Listening Room” from Sitting Duck Software (P.O. Box 130, Veneta, OR 97487; 503-935-3982), the work of Bill Fitzpatrick and Ralph Gonzalez. “The Listening Room,” or TLR, operates with three basic screens. The first is a setup display where you enter room dimensions (length, width, and height, or L, W, and H). The program assumes an uncomplicated rectangular room, but for irregular ceilings (such as mine) or maverick room shapes, the manual suggests fudge factors that may be introduced, and it is unusually lucid and to the point about using them.

Proceeding to the second screen, you find a grid calibrated vertically in decibels of sound-pressure level (–30 to +6 dB) and horizontally in frequency (20 to 230 Hz). Scattered within it are L, W, and H symbols, which identify the frequencies and approximate intensities of your principal room-axis resonance modes. They make for an untidy sight at first because your speakers and ears are, for the moment, at zero distance from the room boundaries. Approximately in the center of the grid is a horizontal bar, 8 dB in height, labeled TARGET ZONE. The object of the game is to change the positions of the speakers and listener, by appropriate taps on the keyboard, to get as many of the L’s, W’s, and H’s as possible into or close to the target zone. Achieving this goal isn’t easy, but the manual is again helpful, discussing reasonable expectations and appropriate trade-offs in admirably concise language.

A subsidiary setup screen, which you can switch to and return from without upsetting your work, enables you to set the room reverberation time and include the effect of carpeting on the reverber time. These optional settings are merely broad-band recalibrations of the program, with no certain foundation in reality, but they may make the appearance of the grid, as you struggle with the L’s, W’s, and H’s, a little less heartbreaking. TLR assumes symmetrical positioning of speakers and listeners, but it does allow asymmetrical locations, in which case you have to work out separate placement solutions for each speaker. Certain rules apply, and the manual is once again supportive, though it’s not quite complete in its discussion, ignoring arrival-time factors.

Whereas the second main screen deals with standing waves, which require a certain duration of sound to establish themselves and become audibly identifiable, the third is concerned with shorter-duration phenomena—specifically, the first reflections from front and side walls, floor, and ceiling to reach the listening position. In Screen Three, you alter the positions of the speakers and listener, TLR plots new curves and listener at various points in the vicinity of the listening position. The temporal “window” can be set anywhere between 2 and 100 milliseconds, although it is merely an exclusionary feature—that is, you can eliminate the contribution of reflections from distant room boundaries by making the window small, but you cannot add in second and third reflections no matter how much you extend the window.

This response curve is where you’d look for the origins of harshness or dullness in the reproduced sound. As you alter the positions of the speakers and listener, TLR plots new curves over the ones previously displayed, so that the resulting family of curves readily shows whether you’re moving in the right or wrong direction. Unfortunately, anything you do to clean up Screen Three is almost certain to discombobulate your careful solution for Screen Two, so the time for painful compromise will have arrived. With luck, however, the problems that emerge on Screen Three will be fixable by means of acoustic absorption (carpets, furniture, wall treatments, etc.), enabling Screen Two to completely govern speaker and listener placement.

To wax computationally technical, TLR Version 3.1 requires an IBM-compatible personal computer with at least DOS 2.11 and 256 kilobytes of RAM. Hercules graphics are supported, as are CGA, EGA, and VGA. The program can be set up to run some dot-matrix and laser printers, but I am going to ask you to confer with Sitting Duck on these details and other matters, including the price, which at press time was a jaw-droppingly attractive $29.95.

TLR is currently my favorite computer program (it sure beats the one I use to put words into this magazine), and although I cannot say it is essential to getting the best out of your loudspeakers (lots of patience and a pocket calculator will take you to the same places), it is able to explore the placement options so rapidly and comprehensively as to provide true peace of mind regarding the solution you ultimately adopt. It could be more analytical, particularly in Screen Three, but not without much greater complexity. All considered, I think the designers have chosen an excellent stopping point for most of the likely users. (Well, perhaps they could do some work on handling dipole radiators, which the current version does not accommodate.)

I see no excuse for serious audio retailers, or even audio clubs, not to have TLR or its equivalent on hand to afford customers and members the means to make their equipment realize its full potential. Any music system with pretensions to reproducing “the real thing” is an aggressively powerful instrument that is going to involve the whole room in its activities. The room must therefore be coaxed into cooperation, or the results will be disappointing or even annoying. It’s as simple as that.
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