Home Theater

Block Busters
5 Top Guns in the Bottom Bass Wars

Four Decades of Sound Technology

TESTED:

BOSTON ACOUSTICS
SPEAKER SYSTEM
DVX8000 MULTIMEDIA HOME THEATER

Experience DVD movies, DVD-ROM gaming, even the Internet with intense sound and graphics. **DVX8000** manages and enhances your entire home theater set-up. Video line doubler, 3-D graphics accelerator and audio technology.

Dolby Digital is a trademark of Dolby Laboratories Licensing Corp.
by Marantz® (including Dolby Digital™). All integrated with powerful multimedia PC functionality. It’s entertainment to the extreme. Available at select dealers. For more info on Philips Extreme Home Entertainment call 1-888-486-6272 or visit us at www.mmhometheater.com.

©1997 Philips Electronics North America Corp.
The Advanced Technology
Inside Definitive's BP2000

- Low frequency tuned column
- 25 mm pure aluminum dome, aperiodic transmission-line tweeter
- Low diffraction driver baffle interface
- Complex Linkwitz Riley crossover network
- Front mirror-imaged D'Appolito bipolar array in non-resonant chamber
- Massive subwoofer magnet structure
- Electronic crossover
- Accelerometer optimized cabinet braces
- 1" thick high density medite front baffle
- Sonopure™ fiber internal dampening
- Piano gloss black or gloss cherry endcaps
- 1" thick rear medite baffle
- High definition pure copper wire
- Multi-layered dampening pads line entire cabinet
- 17 cm mineral-filled polymer high-definition bass/midrange drivers
- Rear mirror-imaged D'Appolito bipolar array in non-resonant chamber
- 15" high-power long-throw bi-laminate polymer subwoofer driver
- Complete built-in powered subwoofer system
- Gold-plated low-level subwoofer input (for optional use)
- Gold-plated tri-wireable speaker level inputs
- High current 300-watt RMS subwoofer amplifier
- Toroidal transformer
- 1 1/4" thick high-density medite cabinet sidewall

"...I would choose these speakers for myself."
~Julian Hirsch, Stereo Review
Definitive's Amazing BP 2000 & 2002 Are The World's Most Highly Acclaimed Loudspeakers!

"The first speaker I have been able to audition in my own familiar surroundings that has given me that special thrill that usually costs ten or more times its price to obtain."

-Julian Hirsch, Stereo Review, USA

"Literally Staggering"

Top reviewers around the world agree that Definitive's amazing BP 2000s & BP 2002s combine highly advanced technology and superior build quality in order to achieve unsurpassed sonic performance plus unequalled value.

"Astounding...The Stuff of Dreams"


"Absolutely Unsurpassed"

Both music and movies are reproduced with outstanding purity, transparency and life-like realism. And the astounding high resolution imaging, magnificent soundstaging, awesome bass and explosive dynamic impact totally envelop you in sonic ecstasy. It is simply amazing.

"Amazing Music and Home Theater... Most Spectacular Speakers Ever"

-In Hi-Fi Review, Hong Kong

In addition to being an audiophile's dream, the BP 2000s & BP 2002s are also the main speakers in Definitive's Ultimate Home Theater Systems. These astonishing systems are absolutely the finest sounding available. They recreate a "you are there" virtual reality that actually puts you into the sound-space of the original cinematic action.

"The Best Performance You Can Get"

-V.T.V., England

Experts agree these complete Dolby Digital AC-3* ready systems deliver the ultimate listening experience. They combine BP 2000s or BP 2002s with perfectly matched center and rear surround speakers. Dual powered subwoofers are already built into the sleek towers. Experience them today!

Definitive Tech

"The Leader in High-Performance Loudspeakers."

See our dealer list on page 60
Rated main output level: 1.0 volt
Frequency response ±0.5dB: 5Hz to 85kHz
Signal to noise ratio 'A' weighted: >102dB
THD + noise 20Hz to 20kHz balanced: 0.025%
THD + noise 20Hz to 20kHz unbalanced: 0.095%
Input impedance balanced: 94k ohms
Input impedance unbalanced: 47k ohms
Output impedance balanced: 1200 ohms
Output impedance unbalanced: 600 ohms
Input sensitivity balanced: 183mV
Input sensitivity unbalanced: 365mV
Dimensions Height: 4 1/4 inches
Dimensions Width: 17 inches
Dimensions Depth: 12 inches
Weight Net: 15 pounds
Weight Packed: 17 pounds

Specifications subject to change.
ADCOM's new GFP-750 stereo preamplifier answers the music enthusiast's needs for the finest quality audio reproduction while providing an easily used bridge to the rapidly expanding world of multi-channel surround sound. Regardless of application, all users will benefit from the exceptional care shown in circuit layout and implementation. The GFP-750, developed to satisfy the most sophisticated and critical aural tastes, will serve superbly as a cost-effective and flexible control center in a wide variety of system configurations.
cat's back, zep rules
Yusuf Islam, the Seventies artist formerly known as Cat Stevens, has made his first recording in nearly two decades. It's a song called "The Little Ones," a tribute to children killed in Bosnia and Scotland. Islam, who abandoned the celebrity life in 1977 and became a Muslim educator, made his first concert appearance since then in Sarajevo, Bosnia, last November. A live recording may be released this year. Metal pioneer Led Zeppelin has been certified by the Recording Industry Association of America as the second top-selling group after the Beatles (whose total sales are nearing 100 million). By the end of 1997, Led Zep's cumulative sales reached 63.8 million.

divx update
Digital Video Express (Divx), inventor of the controversial DVD-offshoot system that plays regular DVDs and limited-play Divx discs (see "Pay-Per-View DVD," December 1997), has announced that 100 Divx DVD titles from several movie studios will be available this summer when Divx players from RCA, Panasonic, and Zenith hit stores. The company expects 500 titles to be available in the first year.

operative operations
Recent research reveals that young American adults are increasingly interested in opera. As if in response, Doubleday has published The American Opera Singer ($40) by Peter G. Davis, music critic for New York magazine, and BMG Classics has issued a companion two-CD set of recordings made by thirty-six American opera stars between 1906 and 1995. The U.S. Postal Service has also issued a set of stamps honoring the singers Lily Pons, Rosa Ponselle, Lawrence Tibbett, and Richard Tucker. Further afield, La Scala opera company in Milan, Italy, is working with TDK to archive more than 5,000 hours of original open-reel recordings from 1951 to the present on CD-R.

pirate plays
When songs from Pearl Jam's new album "Yield" appeared on the Internet in "near-CD quality" a couple of months before its scheduled February release, the band and its record label (Epic) feared that the leak would hurt sales of the new release. As it turned out, most of the cyberpirates were Pearl Jam fans; one of them argued that, if anything, the postings generated advance publicity that would yield more sales — not less. Nonetheless, most agreed to remove the pirated material on request from lawyers. . . . Elsewhere in the deep dark world of audio piracy, $100,000 worth of duplicating equipment seized in a sting has been donated to the Library of Congress's National Library Service for the Blind and Physically Handicapped to produce books on tape.

CSW's retro warranty
To commemorate its 10th anniversary, Cambridge SoundWorks has retroactively extended the warranty to 10 years on every nonpowered speaker system it has sold since July 1988. CSW also increased the warranty on all its current nonpowered speaker systems to 10 years.

hard copy
"DVD Video: The New Wave in Home Entertainment," a brochure that explains the features and benefits of the DVD format, is available for free from the DVD Video Group. Call 213-845-0160, or e-mail getinfo@dvdivideo.com. . . . The POOGE Chronicles, a book of sixteen articles from The Audio Amateur, guides do-it-yourself audio enthusiasts in modifying their equipment to improve performance. Price: $24.95 plus shipping. To order, call 888-924-9465.

recognition
Rock star philanthropist Elton John was knighted in England at the beginning of the New Year and should now be addressed as Sir Elton. . . . The Trumpet Awards, given in Atlanta by Turner Broadcasting, single out African-Americans who have succeeded in their fields and inspired others to excel. Among the latest honorees are Whitney Houston, Kenneth "Babyface" Edmonds, and Wynton Marsalis.
The VT-2 Home Theater System

Design
Two user-selectable crossover topologies adapt to differing source/stage requirements of two-channel and A/V reproduction.

Coherency:
Time-correct impulse response assures perfect synergy between stereo image and visual imagery.

Dynamics:
High power/performance bandwidth equal to dynamic demands of finest home theaters.

Radiation:
Smooth even response over wide range of listening positions.

Knows a pure note when he hears it.

Dan Mountain:

For a NHT dealer in U.S. or Canada: 1-800-NHT-3993 • www.nhthifi.com ©1997 NHT
Reservations Required  Digital Cinema Sound™ is one of the exclusive features in the Sony Dolby® Digital Receiver. It delivers the movie studio sound sought after by today's top directors right to your home. A powerful 24-bit digital processor contains the acoustic characteristics of three state-of-the-art movie production dubbing stages. The result is astounding. You'll hear movies the way these directors mastered them—from dramatic sound effects that match stunning screen images, to the subtle nuances of the whispered word. It's just another way Sony makes great things happen.
ON THE COVER

Bigger bass boxes: clockwise from top right, the Energy ES-12XL, Klipsch KSW300, B&W ASW2000, PSB Stratus SubSonic 3, and Velodyne VA1012-XII. See page 62 for details.

Digital Imaging by Chris Gould

22 Peripherals
Computer-based CD-RW drives that let you record, and rerecord, your own CDs!
BY KEN C. POHLMANN

62 Block Busters
The lowdown on five powered subwoofers for $1,000 or less
BY TOM NOUSAINE

77 Top 40
Four decades of popular and classical recordings that mattered — and still do
BY KEN RICHARDSON AND ROBERT RIPPS

80 My First Stereo
Our editors and contributors recall how they caught the stereo bug

86 Best Recordings of the Month
Kristin Hersh’s Strange Angels, Vivaldi violin concertos from Christopher Hogwood, Jim Lauderdale’s Whisper, and Tan Dun’s opera Marco Polo

74 Remembrance of Things Past and Future
Yesterday’s digital revolution, and tomorrow’s
BY KEN C. POHLMANN

PERIPHERALS
Computer-based CD-RW drives that let you record, and rerecord, your own CDs!

BLOCK BUSTERS
The lowdown on five powered subwoofers for $1,000 or less

FLASHBACK
The high points (and a few low ones) in forty years of audio and A/V technology
BY JULIAN HIRSCH AND DAVID RANADA

REMEMBRANCE OF THINGS PAST AND FUTURE
Yesterday’s digital revolution, and tomorrow’s

THE REGULARS

BULLETIN 6
LETTERS 12
NEW PRODUCTS 17
AUDIO Q&A 32
SIGNALS 34
TECHNICAL TALK 36
POPULAR MUSIC 89
CLASSICAL MUSIC 100
THE HIGH END 112

EQUIPMENT REPORTS

ONKYO TX-DS747 Dolby Digital Receiver 39
TECHNICS SL-MC410 111-Disc CD Changer 44
BOSTON ACOUSTICS Lynnfield VR960 Speaker 48
PIONEER Elite CD-07D Digital-NR Tape Deck 52
DCM KX-7 Series Two Speaker 56
PARASOUND HCA-1205A Five-Channel Amp 58
POWER, PERFORMANCE, PERFECTION...PERIOD!

Value without compromise. At $1,695, the 73-pound AT1505 5-channel power amplifier has no equal. FTC power output is 150 watts per channel into 8 ohms from 20Hz to 20kHz at no more than 0.03% THD with all channels driven simultaneously! ATI engineers have been designing and manufacturing power amplifiers for over 30 years. All ATI amplifiers are built with the finest parts available...we invite you to compare our amplifiers to any other makes, no matter what the price! ATI power amplifiers have received critical acclaim from reviewers and from audio enthusiasts worldwide. All ATI amplifiers are backed by a 7-year warranty and are made in the USA. For more information on the AT1505 or our other models, or to order, please call 1-888-777-8507.

Amplifier Technologies, Inc.
http://www.ati-amp.com
EMAIL: amptech@ix.netcom.com

The World’s Most Popular Internet Online Service.

America Online. Easy to use. Friendly menus. E-mail. News. Sports. The entire Internet at your fingertips.

Call 1-800-827-6364

Stereo Review is published by Hachette Filipacchi Magazines, Inc.
A Technical Knockout

Superior subwoofer performance requires superior amplification. Sadly, most active subwoofers typically feature "off-the-shelf" integrated electronics that degrade the entire system's performance as well as the bass. B&W has taken the high road in electronics by employing discrete power amplifier designs that have won dozens of international awards for audiophile grade components.

Further, these designs are augmented by B&W's world-renowned driver technology and include our proprietary "Flow Port" venting system. An innovative tuning port that virtually eliminates air drag to reduce distortion while increasing bass extension and output sensitivity over closed box designs.

The result of all this zealous attention to detail? Bass that's visceral, accurate, and above all, musical. Anything less wouldn't be B&W.
home recording
Rich Warren's "The Future of Home Recording" in January clarified the swirl of digital recording formats. My own adoption of the MiniDisc as the successor to the venerable audio cassette took into consideration its relatively greater impermeability to magnetic fields, its protective cover (which the CD and DVD should have had), its superb track-editing and titling facilities, its portability (greater than CD's), and, not least, according to my 56-year-old hearing, its sound quality, which comes within a heartbeat of that of CD. Richard Reid
Grand Rapids, MI

In the 1970s, the tape cassette gained prominence because it made our record collections portable. Instead of griping about its inferior sound quality (greatly enhanced over the years) and even more inferior song-locating ability, we were glad just to have portable music. With the invention of the MiniDisc and recordable CD, many of the inherent limitations of tape have been superseded.

What has also been superseded is the public's need for recording devices. I recently archived the last of my LPs onto MDs, but in most cases I could have simply bought the CD. Home recording is now a hobby rather than a necessity. My CDs are easily portable, and I have yet to see the logic in making a recording of something I already own, especially when it is recorded on the most durable medium in the history of information storage. There are only two reasons to buy one of the advanced digital recording systems: fun or piracy. And my MD recorder provides me with more fun than any other piece of audio gear ever.

Larry Bainbridge
Marcellus, MI

Various people quoted in "The Future of Home Recording" seemed baffled about why particular formats either catch on like wildfire, catch on slowly, or leave almost as soon as they arrive. I feel it's because the manufacturers are releasing new products too quickly for consumers to absorb them. It's all happening too fast.

The manufacturers should slow down on their production and release of all these new formats. Let consumers have a chance to check things out and decide for themselves which is best for them and their needs. I refuse to jump on the bandwagon every time a new format comes along.

Christine M. Rockledge
Manchester, CT

Here's what people want: the ability to record on (a) erasable discs that will (b) play on a regular CD player and can (c) be easily edited like a MiniDisc but with (d) no compression or loss of data and (e) cost less than $10 apiece. When that is available, an avalanche of millions of buyers will go for it, including me. In the meantime, a huge number of consumers will continue to refrain from buying. It almost seems that manufacturers are insulting our intelligence with products so obviously different from what we want. Thirty dollars for a blank CD-RW? Get serious!

I suspect that concerns about piracy are affecting the judgment of the hi-fi industry's decision makers. Depriving consumers of the technology they want does not reduce the activity of pirates; it just keeps the rest of us from spending our money.

Tom Slocumbe
Edmond, OK

digital ins and outs
How do "coaxial" digital inputs and outputs differ from the "S/PDIF" inputs and outputs that utilize RCA jacks and are in common use in computer sound cards and recording equipment? I have a Digidesign Audiomedia III PCI A/D-D/A card in my Macintosh computer. Is it possible to convert from the RCA-type S/PDIF inputs on this card to the "coaxial" type? What about the optical outputs that are commonly found on fixed CD players? Can these be converted to my RCA-type digital inputs?

James Weisbin
New York, NY

The way we use the terms, a "coaxial" digital connection is the same as an RCA-type digital connection. "S/PDIF" or "S/PDIF" simply refers to the standard Sony/Philips Digital Interface, and your sound card will work just fine with the coaxial/RCA digital outputs found on home audio equipment. An optical output can be converted to a coaxial/RCA input only by using an accessory device designed for that purpose or by running the signal through another digital component that has an optical input and a coaxial output.

more divx fallout
Over the past few months, I have read with disquieting interest the articles written about the Divx pay-per-view video format being touted by Circuit City and backed by Disney, DreamWorks, Paramount, and Universal. I have even heard rumors that some people in the music industry find the thought of pay-per-view music attractive. If this is where the entertainment industry is headed, I desperately want to be left behind.

In the same way that Gutenberg's printing press democratized learning and literature in the fifteenth century, the mass media of the twentieth century have democratized music, the arts, and news. People no longer have to be wealthy to listen to a symphony played by a fine orchestra. Radio and the recording industry have brought all kinds of music to everyone. The cinema and television have done the same for drama, comedy, and news. What was once available only to the privileged, powerful, and wealthy is now within the grasp of almost everyone.

Now that we are about to enter a new
SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy.
Before you buy an expensive power amplifier, read the fine print.

Adcom's dedication to uncompromising sonic reproduction, innovative circuit design, and the highest quality electronic parts guarantee that, dollar for dollar, you're getting the best value in the audio world. At 300 watts per channel into 8 ohms and 450 watts per channel into 4 ohms, our new GFA-5802 combines innovative all MOSFET circuitry with a tremendous power supply to outperform the so-called 'super amps' retailing for two to three times the price.

To produce this remarkable amplifier, Adcom started with an enormous toroidal power transformer. Totally separate secondary windings and independent ground connections assure each channel is completely isolated from crosstalk and
AC line interference. Lots of clean power for lots of clear and powerful sound. Even the neighbors will enjoy.

In addition to the GFA-5802's main toroidal transformer, a separate front end transformer is used. This additional device isolates the front end input stages from the main output section so any peak demands from the output stages will not decrease the operating voltages for the input sections. This design also contributes to improved separation at the inputs for precise soundstaging and imaging.

Adcom's new GFA-5802 power amplifier also has exceptionally large capacitors to store large amounts of DC current for supply to the speakers.

This large storage capacity means that the amp won't be starved for power when you're driving low impedance and/or inefficient speaker systems. Now your speakers and your music can sound the way you expect them to. All the time.

The well organized and simple design of the GFA-5802's glass epoxy circuit boards assures outstanding and reliable operation. Using only single-ended Class 'A' circuitry in the front end, the Adcom GFA-5802 delivers the pure sound that other amplifiers can only talk about. All devices are precision matched for maximum performance, negligible distortion, and higher output currents.

We use only International Rectifier Hexfet transistors in the signal path of the Adcom GFA-5802. These Hexfet circuits are reference grade, hybrid MOSFET transistors which reproduce all the punch and muscle of bipolar devices but with the musical sound of tube amps. And since the GFA-5802 has only three gain stages it out performs comparable amps which usually have five stages or more. The shorter the path of power resistance, the better the sound.

The GFA-5802 comes with versatile binding posts for easy speaker hook-ups. Accepting either standard stripped or 'tinned' wires, single or dual banana plugs or spade lug connectors, the GFA-5802 is a great match for any system. And since it can drive virtually any speaker system regardless of its impedance, even the most demanding speakers will sing beautiful music. Additionally, the GFA-5802 also comes equipped with two sets of binding posts for each channel. These extra binding posts allow the GFA-5802 to accommodate speaker systems that have 'bi-wire' capability.

Adcom makes sure that the sound created by your other components can be flawlessly transferred to the GFA-5802's balanced power and optimum circuit technology. The GFA-5802 is equipped with two types of input connectors for complete compatibility, 'Tiffany style', gold-plated RCA jacks and XLR jacks. The GFA-5802's professional grade three pin XLR jacks provide both positive, negative, and shield properties. The result is a balanced line connection between the GFA-5802 and your other components. This connection is essentially immune to electromagnetic and radio frequency interference and provides a significant reduction in 'common mode noise'.

Dependable technology and efficient use of the highest quality parts make the GFA-5802 one of the most sought after audiophile products in recent years. And because it's an Adcom component it will benefit from a high resale value and an outstanding dealer service network. After you hear the GFA-5802 you'll agree that it's an incredible value in high end audio.

The most important detail to look for before you buy your next amplifier is the Adcom name. Adcom audio and audio/video components are designed to be second to none. It's this driving passion for accurate, musical sound and performance that has made Adcom components sought after by the discriminating audiophile. Through a combination of technology and innovative engineering techniques, the Adcom GFA-5802 is quite possibly the best amplifier you may ever hear. From its toroidal transformer and giant capacitors to its reference grade Hexfet circuitry, the Adcom GFA-5802 is built to be the best amplifier money can buy.

To listen to all the GFA-5802 has to offer, call 1-800-882-9296 for the Adcom dealer nearest you.

Your ears will thank you.

And so will what's between them.

11 Elkins Road • East Brunswick, N.J. 08816 • U.S.A.
Tel: 732-390-1130 • Fax 732-390-5657
Web: http://www.adcom.com

20 to 20,000 Hz with both channels driven at less than 0.18 THD
Corey Greenberg's column on Divx was offensive. Worse, it was bad writing.

1) Name-calling is not just bad manners. It indicates that you don't have strong arguments. If you're going to call folks "evil, greed-driven swine," you should have a lot better justification than he gave for it. I was sort of neutral on Divx before I read this column. Now I think that maybe it's a good idea if that's the best its opponents can come up with.

2) Sarcasm is very difficult to carry off in print. I'm sure many readers scanned the column, saw the words "most important, brilliant, downright sexy," "coolest," and "most awesome," and went away thinking Mr. Greenberg was praising the system.

3) Mr. Greenberg comes off as dishonest. I got the impression that if anyone retorted, "Well, you said..." he would reply, "No, I didn't say that. I said a comic would say that."

4) He missed an opportunity to educate. Readers unfamiliar with DVD and Divx and some of the controversy would be totally perplexed by the column.

I explained the Divx concept to several of my friends who don't keep up with video technology (none of them had even heard of DVD). All of them thought the technology was intriguing and would be willing to buy it if the cost was right. They hate returning videos to the rental store.

Divx is not intended to compete with video rental, which is already so cheap that you cannot compete with it on cost. Where you are going to see Divx sold is at Wal-Mart or Safeway. Those who don't think it will succeed don't understand the depth of anger folks have at paying late fees at the video store. And compared with the cost of other entertainment, nobody will be concerned about the $3 extra-play charge.

Divx is just a natural step toward online ordering of videos. The problem is that current Internet bandwidth is nowhere close to that of Divx, but it will be someday, and when it is, the technology will be very similar. You'll download what you want and pay online to decrypt it.

Michael Morse
Garrett Park, MD

I have put off buying a DVD player, but now that I've heard about Divx, I'm going to buy one right away. I will not wait for Divx. I am not going to pay extra for a player with Divx capability so that I can pay an outrageous $4.99 for a rental. I can already rent a DVD for two days from a local store for $2.50. It isn't so difficult to return a movie that I'm going to get sucked into Divx. People who don't want to travel to the rental store are going to get pay-per-view from cable or satellite anyway.

David F. Toone
Tucson, AZ

delos DVD spectacular

In December's "The High End," Corey Greenberg does an entertaining job of discussing the new Delos DVD Spectacular disc. He is right about its sound quality — it is a brilliant piece of work that signals the dawn of a new age in home audio — but wrong in stating that the disc was "encoded in Dolby Digital AC-3, held at its maximum bit rate of 384 kilobytes per second for the best sound quality."

The Dolby Digital transcription of the 1812 Overture was done at a data rate of 448 kilobits (not kilobytes) per second. In addition, there is a "bonus" track on the disc [Title 29] that has a transcription of the same 1812 done at Dolby Digital's maximum rate of 640 kbps (some DVD players may not be able to play this section). While we have not been able to detect any digital artifacts with program material recorded at both the lower and higher rates (or at the 384-kbps rate used for most movies), the potential for the higher rate with audio-only releases should help allay the fears of the anti-data-reduction establishment.

Howard Forstler
Tallahassee, FL

"catalog update" update

American CD rights to Prologue and Ashes Are Burning by the British progressive-rock group Renaissance — subject of last November's "Catalog Update" in the Popular Music section — have been reacquired by One Way, P.O. Box 6429, Albany, NY 12206-0429, telephone 800-833-3553.

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.
Enjoy the Encore difference.

Whether you're a connoisseur or a casual listener, join BMG Classical Music Service and enjoy the difference with Encore, our exclusive members-only magazine and selection guide. Every FREE issue has something to surprise and delight you, from insightful commentary and noted guest columnists, to exclusive interviews with acclaimed artists. As a member, you'll always get a superior selection of quality recordings carefully selected by our editorial staff, and of course, our best money-saving offers...making this membership experience you won't find anywhere else! 

In Encore you'll find...

- Hundreds of quality classical recordings to choose from, plus the best of jazz, pop and light sounds
- Money-saving offers up to 70% off
- Expert music recommendations and in-depth reviews of featured selections and new recordings
- Informative commentary and exclusive interviews

BMG CLASSICAL MUSIC SERVICE
PO BOX 91103
INDIANAPOLIS IN
46209-9306

CLASSICAL LDS 1
FOR THE PRICE OF

Nothing More To Buy, Ever!

BMG CLASSICAL MUSIC SERVICE
PO BOX 91103
INDIANAPOLIS IN
46209-9306

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 5071 INDIANAPOLIS IN
POSTAGE WILL BE PAID BY ADDRESSEE

BMG CLASSICAL MUSIC SERVICE
PO BOX 91103
INDIANAPOLIS IN 46209-9306

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES
Tolnig • Organ • Anthony Newman explores music heading towards financial ruin, Wagner, more. (DG)

My Favourite Lady—Tchaikovsky Songs And Chansons • Acknowledged contributor to the current Baroque repertoire, women & Renaissance music (Nimbus) 3324

Piciole Domingo • The Gold • Silver Gold • Popularclosest to the renaissance period, early courtly music (Nimbus) 2094

Dias Srs.—The Essential Choral Collection • Music of Bach, Handel, Mozart, Verdi, others. (DGO) 1054

The Romeros • The Royal Family Of The Spanish Guitar • Captivating sounds from the master—father & son, American living presence (EMI) 7824

Villa-Lobos • Piano Trio In A Minor • Ravel, Piano Trio In A Minor • The Alan Wallach Edition. (Coho) 2516

Hovhaness, Celestial Gaze • Special Commemorative Edition. (Erato) 5222

Peder Pedersen/Miksell: Canasta • Music for solo and chamber ensemble. (Telarc) 6264

Ramirez. Oversight • Les Terres de Francia • Great works in the mixed media, French baroque works (Telemaque) 4242

Tchaikovsky, Lyric Suite • Stuyvesant Chamber Orchestra/Kleiber • Great works in the mixed media, French baroque works (Telemaque) 4242

Kiri To Kanawa: Sono e Acinco • Piano Soli de Lyon. (OriCocktail) 2312

Music Of Ligeti & Janacek • Gedalgi Wind Quintet, Domar, Hamburg Wind Quintet, Grouping Harmonia Mundi. (Harmonia Mundi) 2045

Flauto Plano • Flagai Santuziano plays musical works by late japanese composer Tatsuo Takamatsu. (Philips) 2094

Veghah Williams, Concerto Grono • Grono, Vengerov, Olafsson, Oxholm. (OriCocktail) 2312

Bach, Piano Concerto No. 5 In F Major • Great works in the mixed media, French baroque works (Telemaque) 4242

Chaconne. Symphonic No. 4 • H. C. da Costa • Great works in the mixed media, French baroque works (Telemaque) 4242

Polka Of The Winds • The Piano At The Movies • Great works in the mixed media, French baroque works (Telemaque) 4242

Chopin, Piano Concerto No. 1 In E Minor • Schumann, Stein, Berliner Philharmoniker, Showalter. (Harmonia Mundi) 2045

Prima Voce • Arias—Great Opera Women's Arias, Second Annual. (Erato) 5432

Rachmaninoff, Piano Trio. • Great works in the mixed media, French baroque works (Telemaque) 4242

Great Music, Great Savings, Great Members-Only Magazine

10-Day, Risk-Free Listening... When you receive your introductory selections, you are not obligated to keep any of the items or pay any additional cost. You may keep the items for 10 days, return them, and have nothing more to do. If you decide to keep the items, you will receive 4 more selections automatically, preview them for 10 days and examine them at your leisure.

SAVE 50% to 70% on ALL CLASSICAL CDs

Great Music, Great Savings, Great Members-Only Magazine

1. Please accept my membership in BMG Classic Music Service and send me my FREE selections as indicated. Under the terms of this offer, I agree to buy just 1 selection at the regular Club price for $9.98 or $11.98 for casettes with a $10.98 shipping and handling charge. I will then receive 4 more choices FREE, that's 11 for the price of 1, with nothing more to buy ever! I understand that a shipping and handling charge will be added to each selection.

2. Rush me these 6 selections now (deselect by number)

   1. Mozart: Don Giovanni (GAO, Review Seal), Beethoven: String Quartet No. 13 (Erato).
   2. Beethoven: Symphony No. 9 (Erato).
   4. Mozart: String Quartet No. 16 (Erato, Review Seal).

3. I prefer cassettes.

If you would like to order something different, please designate in the space provided.

Signature

Phone No. ( ) Area Code

State

City

Apt.

Zip

Additional Information: (Please Print) First Name

Initial

Last Name

Address

Mail this form to BMG Music Service, P.O. Box 91103, Indianapolis, IN 46291-0025

- Designate a C-D set (up to 2 selections).

SAVE 50% to 70% on ALL CLASSICAL CDs

SAVE 50% to 70% on ALL CLASSICAL CDs

No Long-Term Commitment. After you purchase your one regular-Club price selection within one year, you may cancel your membership by notifying us in writing. If you apply to cancel, please write to BMG Music Service, P.O. Box 91103, Indianapolis, IN 46291-0025. The Pleasures of Membership Start Now

THE PEACEFUL MUSIC SERVICE

*Subscribe to our Club for 3 consecutive months, and get your first month FREE!
Yamaha  
Yamaha's DSP-A1 surround-sound processor/amplifier can decode both Dolby Digital and DTS-encoded software and has six-channel inputs for external decoders of other types that may be developed. The amplifier section is rated to deliver 110 watts each to the five standard channels; there are also two 25-watt channels for optional front-effects speakers used by some of the processor's thirty-nine soundfield modes. The DSP-A1 has inputs and switching for six A/V sources and five audio-only sources, including CD, phono, tuner, and two recording loops. A system remote control is included. Price: $2,599. Yamaha, Dept. SR, 6660 Orangethorpe Ave., Buena Park, CA 90620. Phone, 800-492-6242.

Meridian  
The Meridian Model 508.24 CD player is designed to be compatible with so-called "super CDs" mastered with Meridian's Model 518 processor, which uses psychoacoustic-based noise-shaping to yield an effective dynamic range said to be greater than is possible with the standard 16 bits. Precision reclocking circuitry is said to eliminate timing-error distortion. The transport has a carbon and glass-fiber disc clamp that is said to eliminate vibration. Price: $3,495. Meridian, Dept. SR, 3800 Camp Creek Pkwy., Building 2400, Suite 122, Atlanta, GA 30331. Phone, 404-344-7111.

Polk Audio  
Polk's RT5000 home-theater speaker system consists of two RT3000p front left/right speakers with integrated subwoofers, a CS1000p center speaker with a built-in powered sub, and a pair of f/x1000 full-range surround speakers switchable between dipolar and bipolar operation. The system is available finished in black, white, or rosewood veneer (shown). Each RT3000p speaker consists of a mid/high-frequency module on top of a separate but connected powered sub, with a total height of 5C inches. The surround speakers have identical two-way driver complements mounted on opposing baffles offset at a 45-degree angle from the speaker's front axis. Price: $6,000. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 212-5. Phone, 800-377-7655.

Entech  
The Number Cruncher 203.2 and the Number Cruncher 205.2 digital-to-analog (D/A) converters from the Entech division of Monster Cable are said to "smooth the sound and open the music coming from a CD player." Both converters are designed to accept a digital input signal from a CD transport and to feed an analog output signal to an amplifier, preamp, or receiver. Prices: 203.2, $300; 205.2, $450. Monster Cable, Dept. SR, 274 Wattis Way, South San Francisco, CA 94080. Phone, 650-871-6000.

M&K Sound  
The amplifier in the MX-5000THX Mark II powered subwoofer from Miller & Kreisel Sound is rated to deliver 400 watts rms. The maximum output of its dual 12-inch drivers is said to exceed THX requirements. Frequency response is rated flat within ±2 dB to below 20 Hz. The black oak-finish cabinet measures 23⅛ x 15½ x 26 inches and weighs 115 pounds. Price: $2,695. M&K, Dept. SR, 10391 Jefferson Blvd., Culver City, CA 90232. Phone, 310-204-2854.
MSB  The MSB Digital Director digital switcher has two Toslink optical and four coaxial digital inputs, and one Toslink optical and two coaxial digital outputs. Digital inputs are selected automatically and routed to both the optical and coaxial outputs; manual selection is not possible. If two of the digital inputs have a signal present, the one at the lower-numbered input will be selected. Green and amber LEDs indicate the active and selected inputs. The Digital Director measures 17 x 6 x 2 inches and weighs 7 pounds. It is available finished in a metallic charcoal as shown or in a silver-gray finish. Price: $399. MSB, Dept. SR, 14251 Pescadero Rd., La Honda, CA 94020. Phone, 650-747-0400.

XS Technologies  The Strata Power Command Center from XS Technologies can protect up to five electronic devices from damage caused by power loss, brownouts, or power surges and spikes. It contains a microprocessor-controlled uninterruptable power supply that delivers a constant voltage by automatically decreasing output if the line voltage surges or boosting it if the voltage drops. A battery-backed power supply kicks in if the line voltage drops further. The self-standing unit can be rack-mounted with an optional kit, and its control panel can be mounted remotely. Two models are available. The Strata 800AV ($599) has an 800-VA battery, the Strata 1000AV ($749) a 1,000-VA battery. XS Technologies, Dept. SR, 3001 Curry Ford Rd., Orlando, FL 32806. Phone, 888-978-3241.

B&W  B&W's Compact Digital Monitor series includes the CDM7SE, a three-way floor-standing model that's 37 3/8 inches high, and the CDM1SE and CDM2SE speakers for stand or shelf mounting. All have vented cabinets and are available in black ash, red ash, or cherry veneer. Prices (per pair): CDM1SE, $1,100; CDM2SE, $800; CDM7SE, $1,800. B&W, Dept. SR, 54 Concord St., North Reading, MA 01864. Phone, 508-664-2870.

Case Logic  Case Logic's KSW-100 and KSW-36 CD organizers are made of Koskin, which is said to look and feel like leather. The KSW-100 can hold up to 100 CDs along with their booklets and features a carrying handle. The KSW-36 can hold 36 CDs and booklets. Both organizers feature a zipper closure and pockets with a soft lining so that the CD's playing surface is not scratched. The booklets are held separately. Prices: KSW-100, $50; KSW-36, $30. Case Logic, Dept. SR, 6303 Dry Creek Pkwy., Longmont, CO 80503. Phone, 800-447-4848.

Cerwin-Vega  Cerwin-Vega's HT-CTR25 center-channel speaker has dual 4-inch woofers and a 1-inch inverted silk-dome tweeter, all of them magnetically shielded. Dual ports are said to contribute to the speaker's high sensitivity, which is given as 92 dB. Frequency response is rated as 80 Hz to 22 kHz ±2.5 dB, nominal impedance as 8 ohms, and power handling as 150 watts. The trapezoidal enclosure, which measures 5 1/4 x 15 x 6 3/8 inches, is finished in black woodgrain vinyl and has a removable cloth-covered grille. Price: $229. Cerwin-Vega, Dept. SR, 555 E. Easy St., Simi Valley, CA 93065. Phone, 805-584-9332.
As you begin your search for the ideal home theater audio system, ask yourself what's important:

Is it the size of the equipment?

Or is it the size of the sound?

It has long been assumed that bigger equipment means better sound. Not anymore. Bose® Lifestyle® systems allow you to enjoy better sound with less clutter, less equipment and less complication.

- A single, 23" high music center replaces an entire rack of electronics and includes a built-in CD player and AM/FM tuner.
- Tiny Jewel Cube® speakers are about the size of a computer mouse. And hidden away out of view is the Acoustimass® module for purer, more natural bass. Your favorite music, movies and sports programs will come to life in a way you simply cannot imagine.
- Home Theater Technology summed it up by saying, "Everything is included and carefully thought out... The performance is awesome."

Please call for your complimentary guide to our Lifestyle® music and home theater systems, and for Bose dealers near you. Then compare the size of Bose sound to the sound of the biggest equipment you can find.

BOSE
Better sound through research®

1-800-444-BOSE Ext. 586  www.bose.com

© 1997 Bose Corporation JN98307G  "From a review of the Lifestyle® 12 home theater system"
Panamax The Panamax MAX 1500 component-style surge protector is designed for high-end home-theater systems. It provides ten electrical outlets as well as protection for one telephone line, one coaxial feed from a satellite receiver, and two cable/antenna coaxial lines. Power-line-conditioning circuitry in the MAX 1500 is said to eliminate up to 99.9 percent of all electromagnetic and radio-frequency interference over its rated bandwidth of 100 kHz to 1 MHz. The rack-mountable unit has a height of two rack spaces. Features include sequential startup, automatic shutoff, and under/over-voltage protection. Indicator lights show line-fault or ground-fault conditions. The MAX 1500 has a UL 1449 surge-protector rating of 330 volts and can dissipate 672 joules of energy with a maximum spike capacity of 40,000 amperes. Price: $449. Panamax, Dept. SR, 150 Mitchell Blvd., San Rafael, CA 94903. Phone, 800-472-5555.

AudioControl The AEQ-26 equalizer from AudioControl is designed for use with in-wall speakers. It features six bands of equalization centered at 45, 150, 300, and 700 Hz and 2.5 and 12 kHz. A programmable bass-cut filter concealed underneath the top cover allows the installer to set the bottom frequency limit for a speaker to protect it from being damaged by excessive low-bass signals. The factory-preset limit of the filter is 40 Hz. The AEQ-26 is rack-mountable; a standard front plate is also available. Price: $249. AudioControl, Dept. SR, 22410 70th Ave. W., Mountlake Terrace, WA 98043. Phone, 425-775-8461.

Ultimate The SW-1212 powered subwoofer from Ultimate Sound has a 150-watt amplifier, a 10-inch driver, and a 10-inch passive radiator. It features an automatic power-on mode, and its level and crossover point can be adjusted with the supplied remote control. Both line-level and speaker-level inputs and outputs are provided, as is a phase switch. The SW-1212 measures 19 x 15 x 17 inches and is finished in anthracite oak vinyl. Price: $473. Ultimate Sound, Dept. SR, 138 University Pkwy., Pomona, CA 91768. Phone, 888-909-9988.

Oracle Oracle's Mentor Monitor two-way loudspeaker incorporates a 5¾-inch woofer that crosses over to a ¾-inch tweeter at 3 kHz. The speaker's frequency response is given as 55 Hz to 20 kHz ±2 dB and its sensitivity as 88 dB. It is recommended for use with amplifiers that can deliver between 25 and 200 watts per channel. Dimensions of the trapezoidal cabinet are 13¾ x 7¾ x 12 inches, and its weight is about 20 pounds. Available finishes are deep red (shown) and piano black. Price: $2,100. Oracle, distributed by ACI, Dept. SR, 340 Bourque Blvd., Omerville, Quebec J1X 4G1. Phone, 819-868-0284.

Rocktron The HTD1 home-theater decoder is based on Rocktron's proprietary Circle Surround 5.2.5 matrix surround-sound technology. It accepts a stereo input and processes it to create left, center, and right front, left and right surround, and low-frequency-effects channels. It can also generate a phantom center channel. Separate decoding modes are provided for music and video. A Wide mode is provided to increase the surround-channel separation. Price: $999. Rocktron, Dept. SR, 2870 Technology Dr., Rochester Hills, MI 48309. Phone, 248-853-3055.
**Legendary Performance** The Sony DVP-S7000 player has already been hailed as "the reference standard" for DVD performance. Now, thanks to our Dolby® Digital ES receiver with Digital Cinema Sound™ and a Trinitron® XBR® television with component video technology, the S7000 delivers even greater color clarity and stunning sound quality. It all adds up to the ultimate home entertainment experience. It's just another way Sony makes great things happen.

©1997 Sony Electronics Inc. All rights reserved. Sony, Digital Cinema Sound, Trinitron, XBR and Maximum Television are trademarks of Sony.

©1995 Warner Brothers Entertainment Inc. A Warner Bros. Entertainment Inc. Release. LaserDisc is a trademark of Warner Bros. Entertainment Inc. ©1994 Warner Bros. Entertainment Inc. All rights reserved. Legends of the Fall is filmed on Sony MD.

Maximum Television, Only From Sony

©1997 Sony Electronics Inc. All rights reserved. Sony, Digital Cinema Sound, Trinitron, XBR and Maximum Television are trademarks of Sony.


Maximum Television, Only From Sony
PERIPHERALS

To test how well the latest CD species fulfills its promise, I asked two industry leaders, Hewlett-Packard and Ricoh, to send me their latest CD-RW wares for Windows/Intel PCs so that I could put them through their paces.

HP SureStore

The Hewlett-Packard SureStore CD-Writer Plus 7110e is an external CD-RW drive (it is also available as an internal drive with a standard IDE disk-drive interface as the Model 7110i). It can write CDs at 2x speed and play them back at 6x speed. This translates into a write rate of 300 kilobytes per second (kB/s) and a read rate of 900 kB/s. The average access time is less than 350 milliseconds (ms). The drive contains a 1-MB buffer. The front panel is user-friendly. There is an audio headphone jack with volume control, a drawer open/close button, and two LEDs to indicate power/busy and writing. The drive's rear panel has two twenty-five-pin D connectors, an audio output jack, and a power input jack. Incidentally, Hewlett-Packard recommends that you use a PC with at least a 75-MHz Pentium, 16 MB of RAM, and Windows 95 or NT 4.0.

Physical installation of this external drive was a snap. I used the supplied cable to connect my PC's parallel printer port to the drive's data-input port; the second, pass-through connector let me reconnect my printer. (Hewlett-Packard warns that you may not be able to use the CD-Writer and the printer simultaneously.) I connected the external power supply to the drive and an AC outlet. There is no power switch; the power supply switches into standby mode when the drive is not in use. Finally, I connected the drive to my PC sound card's line input via a supplied stereo mini-jack audio cable.

The software portion of the installation was also uneventful. I loaded the supplied CD-ROM into my CD-ROM drive (not the still-to-be-installed CD-RW drive!) and followed the on-screen installation instructions. There was only one complication — the software assigned the E drive address to the new drive, which disabled the CD-ROM that was already assigned to the E drive. It was a simple matter, however, to resolve the conflict by reassigning the CD-RW to the F drive. The CD-RW program files themselves were written to the Program Files directory in my C drive. If your PC does not have a CD-ROM drive, you can use the software supplied on a floppy disk to install the parallel-port driver files, then use the CD-RW drive (and CD-ROM) to complete the installation.

Following installation, I restarted my PC and clicked on the CD-Writer's file group, which revealed the variety of programs that accompanied the drive. Specifically, they include five Adaptex programs: Easy CD Audio to make Red Book discs, DirectCD to make data CDs (using the CD-UDF protocol), CD Copier to make duplicate or backup discs, CD-RW Eraser to erase discs, and Jewel Case Designer to create CD box and disc labels. The drive is also accompanied by LivePix Photo Collage software, which allows photos to be stored, enhanced, and manipulated on the PC.

Hewlett-Packard sportingly throws in the Hewlett-Packard software, which allows photos to be stored, enhanced, and manipulated on the PC.

In addition, I formatted a CD-R disc (a 15-second process) so I could drag and drop computer files; after formatting, user capacity was about 611 megabytes. I also burned a CD-R disc with audio tracks and verified that it would play on a conventional CD audio player.

Next I used DirectCD to format the blank disc; this is necessary if you want to drag and drop files from Windows Explorer or other programs. The process takes about an hour. That one-time chore aside, it was easy to move files to the CD-RW and the printer simultaneously.

When you are copying audio data, however, not all CD-ROM drives support digital audio extraction; you can use the program to test your drive to determine its exact capabilities. This release of CD Copier supports copying audio CDs only in the Track-at-Once mode, which means that it inserts a 2-second gap of silence between tracks. If you are making multiple copies it is best to copy your data to the PC's hard disk, then run copies from it; in addition, the software recommends that you use the program to test all data before copying it to check validity.

Ricoh's MediaMaster MP 6200S is an internal drive that can be installed in a standard disk-drive bay. It is supplied with a SCSI interface card.

The Ricoh's MediaMaster MP 6200S is an internal drive that can be installed in a standard disk-drive bay. It is supplied with a SCSI interface card.

and disc labels. The drive is also accompanied by LivePix Photo Collage software, which allows photos to be stored, enhanced, and manipulated on the PC.

Hewlett-Packard sportingly throws in the Hewlett-Packard software, which allows photos to be stored, enhanced, and manipulated on the PC.

In addition, I formatted a CD-R disc (a 15-second process) so I could drag and drop computer files; after formatting, user capacity was about 611 megabytes. I also burned a CD-R disc with audio tracks and verified that it would play on a conventional CD audio player.

In the case of the Hewlett-Packard drive, I used Easy CD Audio to assemble a list of audio files residing on my hard drive and to write them to a CD-RW. I used DirectCD to format the blank disc; it only took a minute or so to erase the table of contents, effectively making the disc blank again.

Then I tried CD Copier, which, as its name implies, is used to copy data from one CD to another. You can use the CD-RW drive as both the source and destination drive (by swapping discs) or use your CD-ROM drive as the source. When you are copying audio data, however, not all CD-ROM drives support digital audio extraction; you can use the program to test your drive to determine its exact capabilities. This release of CD Copier supports copying audio CDs only in the Track-at-Once mode, which means that it inserts a 2-second gap of silence between tracks. If you are making multiple copies it is best to copy your data to the PC's hard disk, then run copies from it; in addition, the software recommends that you use the program to test all data before copying it to check validity.

CF Copier worked exactly as advertised, though reading from and writing to CD was painfully slow compared with hard-disk data manipulation.

Next I used DirectCD to format the blank disc; this is necessary if you want to drag and drop files from Windows Explorer or other programs. The process takes about an hour. That one-time chore aside, it was easy to move files to the CD-RW, use the "Save As" and "Send To" commands, and write, read, and erase files. In this application, the CD-RW really is as simple to use as a floppy disk or hard drive. However, there is a downside to this drag-and-drop convenience: after formatting, the disc's user capacity was reduced to under 500 megabytes. I also burned a CD-R disc with audio tracks and verified that it would play on a conventional CD audio player.

In addition, I formatted a CD-R disc (a 15-second process) so I could drag and drop computer files, after formatting, user capacity was about 611 megabytes. Finally, I verified the SureStore 7110e's playback abilities by playing an audio CD, a CD-R, my CD-R, and a variety of CD-ROMs. In every case, the drive worked flawlessly. No matter which of its many features I used was using this was a terrific drive. The only drawback was that while the DirectCD software provided with the drive made creating CD-Rs a snap, it did not make it possible to create discs that were compatible with Windows 3.1 or
How To Celebrate 10 Years Of Making Some Of The Best Speakers Ever:

1. Offer Mind-Boggling Specials On Surround Sound Systems!

2. Give A Best-In-The-Industry 10-Year Warranty.

Save $100 On Ensemble IV Home Theater System – No Payments Till 1999!

The country's best-sounding affordable surround system, Ensemble IV Home Theater was recently rated "Best Buy" by a leading consumer publication. Sony's Pro Logic receiver has 60/60/60/60 watts per channel. 10-Year Parts & Labor Warranty on speakers. 2-year warranty on the receiver. Reg. $599.98

Save $290 On New Ensemble II Home Theater System – No Payments Till 1999!

This remarkable system features our outstanding New Ensemble II sub/sat speakers. Stereo Review said Ensemble II "can only be compared with much more expensive speakers." The Surround II 5.1 speakers switch from dipole to bipole operation, for great surround sound with any recording. Harman Kardon receiver was top-rated over models from Yamaha, Denon. Speakers backed by 10-Year Parts & Labor Warranty. Receiver backed by a 2-year warranty. Reg. $1,289.96

Save $330 On New Ensemble Home Theater System – No Payments Till 1999!

This incredible system features our dual-subwoofer/dual-satellite New Ensemble speakers. Critics compared Ensemble to speakers costing $2,800. The Surround 5.1 surround speakers switch from dipole to bipole operation for optimum sound with any recording of movies or music. Harman Kardon receiver was top-rated over models from Yamaha and Denon. All speakers backed by our 10-Year Parts & Labor Warranty. Receiver backed by a 2-year warranty. Reg. $1,629.96
Save $400 On MovieWorks 5.1 Home Theater System – No Payments Till 1999!

MovieWorks 5.1 makes movies or music sound fantastic. Stereo Review calls it “clearly one of the best one-box home-theater speaker systems I’ve heard.” Sony’s Dolby Digital AC-3 receiver uses the latest surround technology. Ten-Year Parts & Labor Warranty on non-amplified speakers. 2-year warranty on the receiver. Reg. $2,399.98

Two-Way Shielded Main Speakers

Powerful Dolby Digital 5.1 Receiver By Sony

150 Watt, 12” Powered Subwoofer.
"An aural atomic bomb...nothing short of phenomenal." - Boot

Save $650 On Our Tower Home Theater System – No Payments Till 1999!

Our Tower Home Theater system delivers rich, three-dimensional sound and thunderous bass. The Sony Dolby Digital AC-3 receiver is loaded with power. This package competes directly with systems selling for up to $20,000. Ten-Year Parts & Labor Warranty on non-amplified speakers. 2-year warranty on receiver. Reg. $3,649.95

Tower Three-Way Dual-Woofer Bipolar Speakers
"richly three-dimensional...an uncommon value." - Audio

Powerful Dolby Digital 5.1 Receiver By Sony

150 Watt, 12” Powered Subwoofer.
"Blew the others away on dynamics...clearly the best of the pack." - Stereo Review

In 1988 we started Cambridge SoundWorks, the country’s first factory-direct audio company. In 10 years, we’ve become one of the most successful consumer electronics companies ever. We’re one of the country’s leading speaker companies. And our business is growing tremendously. We have lots to celebrate.

Special Savings. 10-Year Warranties. No Payments Till 1999!

We’ve succeeded because we make great products – designed by Audio Hall of Fame member and Emmy-winner Henry Koss. Audio magazine says we may have "the best value in the world." And during our 10th Anniversary Celebration, that value is even better. When you buy selected surround sound systems, we’ll give you incredible discounts, a 10-Year Speaker Warranty,* and no payments or interest until 1999!

To Order, Or For A Free Catalog, Call...

1-800-FOR-HIFI
(1-800-367-4434) Or Visit hifi.com

Critically Acclaimed. Factory-Direct.
The Critics Love Our Multimedia Speakers. You’ll Love The $50-$100 Savings.

To Celebrate Our 10th Anniversary, We’re Offering Incredible Values On Our Highly-Acclaimed Multimedia Speakers...PCWorks, SoundWorks & MicroWorks. And Qualified Customers Don’t Pay Til 1999!

1. Save $50 On PCWorks™/Sound Blaster® Bundle!

Now Only $149.99
Price Effective 3/1/98

What The Critics Say About PCWorks...

"One of the best PC audio values on the market." - CNN

"Fantastic-sounding speakers...I was stunned by the quality...civilized, lucid output that accurately reproduces the tiniest details." - PC Magazine

"Great sound for under $100...a bargain." - Computer Shopper

Some of the cleanest sounds you can get for less than 100 bucks. You'll be hard-pressed to find a better set of speakers for twice the price." - Boot

"Not many speakers come close to the marvelous output of this system. And at $99? Forget it. Cost less than $100 and sounds like it's worth $500." - CNET

"A speaker system for $100 that should make some $250 systems nervous." - Computer Gaming World

"Sounds better than some speakers that sell for twice the price...Cambridge SoundWorks has broken a price/quality barrier...an excellent system." - PC Gamer
2. Save $100 On MicroWorks™
PC Computing Magazine's MVP Winner.

Now Only $249.99
Price Effective 3/1/98

We don't know any multimedia speaker, at any price, that sounds better than MicroWorks. In fact, MicroWorks sounds better than many, many component systems we've heard. With 67 watts total, it is much more powerful than most multimedia speakers. It produces enough natural, accurate, wide-range sound to fill a living room, a conference room – or even a small auditorium – with beautiful music. It's available in black or computer beige.

The critics adore MicroWorks (see boxed-in section below). It recently beat all the competition to receive PC Computing magazine's MVP Award. Thousands and thousands were sold at our regular price of $349.99.

What The Critics Say About MicroWorks...

"The only speakers you'll ever need. The line between quality sound-system speakers and PC speakers is about to vanish thanks to MicroWorks." - PC Magazine

"...razor-sharp musical image...natural, balanced sound that compares well not just with other computer speakers, but with any speakers." - Computer Shopper

"In terms of price for performance, it's in a class by itself." - Macworld

"The best for less...I haven't heard better speakers at this price." - PC World

"This is a true audiophile system for gamers who want PC speakers that sound as good (or better) than their home stereo." - PC Gamer

"...nothing short of stunning...the most accurate multimedia speakers I've heard...these are really great sounding units." - Computer Gaming World

"...it provided an excellent listening experience across all music types and CD game sound tracks. This is an indication of Cambridge's extensive hi-fi background and its reputation for products that deliver clear and accurate sound." - PC Magazine

To Order, Or For A Free Catalog, Call...
1-800-FOR-HIFI
(1-800-367-4434) Or Visit hifi.com

CAMBRIDGE
SOUNDWORKS
Critically Acclaimed. Factory-Direct.
311 Needham Street, Suite 102, Newton, MA 02164
Tel: 1-800-367-4434 Fax: 617-332-9229 Canada: 1-800-525-4434 www.hifi.com Outside U.S. or Canada: 1-617-332-9356

3. Save $70 On SoundWorks®
PC Magazine's Editors' Choice Winner For 1998!

Now Only $149.99
Price Effective 3/1/98

For over three years, SoundWorks has been the standard of quality in multimedia speakers. When we introduced it in 1994, it was the only affordable speaker in its category to deliver natural, realistic sound. One of the most highly-reviewed speakers in history, SoundWorks has received coveted Editors' Choice awards from both Macworld and PC Magazine.

SoundWorks is an amplified subwoofer/satellite speaker system that delivers truly great sound – including solid bass – from a computer, TV, boom box, clock radio, portable CD player...anything with a headphone jack. It's available in black or computer beige. And because it operates on 110 or 12 volts, you can take it anywhere. With our optional rechargeable battery and carrybag, you can even bring it to the beach! Thousands and thousands were sold at our regular price of $219.99.

What The Critics Say About SoundWorks...

"...exceptionally good...should be compared to loudspeaker systems that cost about $300...sounds terrific, I can recommend it highly." - Audio

"SoundWorks has the most natural musical timbre." - The New York Times

"SoundWorks leaves much of the multimedia competition in the dust with rich, clear sound." - Sound & Image

"The best buy in new PC sound systems has to be SoundWorks...the sound is crisp and clear...the overall winner in our evaluation...SoundWorks simply sounded like a good home stereo system." - PC Magazine

"...head and shoulders above the others we've tried." - MacUser

"The SoundWorks system is unquestionably the choice for gamers who also happen to be audiophiles...may just outclass your home hi-fi." - PC Gamer
other operating systems. For that I had to use Adaptec’s EZ CD Pro, which was provided with the Ricoh Mediamaster drive. Hewlett-Packard’s official single-unit blank-media prices are $32 for CD-RWs and $4.60 for CD-Rs, but street prices of both media are dropping fast. The Model 7110e retails for $610 (the 7110h is $495).

Ricoh MediaMaster
The Ricoh MediaMaster MP 6200S is an internal CD-RW drive. Like the Hewlett-Packard CD-Writer, it reads at 6X speed and writes at 2X speed, and it incorporates a 1-MB buffer. Its average access time is 350 milliseconds. It reads all CDs, writes CD-Rs, and rewrites CD-RWs. It also supports the CD-UDF specification, allowing simple drag-and-drop operation. Its front panel is truly sparten, with only an audio headphone jack, up/down volume buttons, a drawer open/close button, and a power/busy LED indicator. The rear of the drive sports three connectors: a SCSI connector, an audio output connector, and a power connector. There is also a set of pins for setting the SCSI ID number and two SCSI terminators. Because it is an internal drive, the installation of the MP 6200S is slightly complex. In particular, I began by physically mounting the drive in an open PC bay, using the supplied screws. I set its SCSI number and termination, and plugged in power from my PC. I then plugged the supplied PE Logic SCSI-2 controller card into a 16-bit ISA slot in my motherboard and internally connected the drive and card with a supplied fifty-pin flat SCSI cable. The SCSI card, incidentally, also provides an external SCSI pass-through connector, which can be used to connect external SCSI devices.

The Ricoh drive comes with a variety of bundled software, configured for Windows 95 only. In particular, you’ll find Adaptec’s Easy CD Pro and DirectCD software, Seagate’s Backup Exec software, and PE Logic’s SCSI support drivers. As with the Hewlett-Packard CD-Writer, it was a fairly easy matter to install the software and start burning disks. The programs supplied with this Ricoh drive allow general-purpose data copying, with special provisions for audio files. Easy CD Pro lets you make audio CDs and data CDs as well as mixed-mode and CD Extra discs. You can also make backup copies of CDs and jewel-case inserts. In other words, Easy CD Pro encompasses the same features as the Easy CD Audio program supplied with the Hewlett-Packard drive. DirectCD is the same program as bundled with the Hewlett-Packard drive. The Backup Exec program is handy for manually or automatically archiving large volumes of data; using its compression algorithm, you can fit up to 1.3 gigabytes (GB) of data onto a CD. I played with all of these programs and had no trouble executing any of the software features, and the Ricoh hardware drive worked without fault. For example, I used Easy CD Pro to copy tracks from various music CDs and burn them into a compilation CD-R. I used noncopyrighted titles for this test, as with any copying, it is important to observe all copyrights. Ricoh kindly supplies both a blank CD-RW and a blank CD-R. The Ricoh MP 6200S retails for $699.

driving away
In my opinion, CD-RW is a fabulous invention. PCs have always had erasable media, but they have been hindered by low capacity, high cost, or incompatibility. The CD-RW format instantly removes all these obstacles and, in fact, has a sporting chance at replacing the 1.44-MB floppy disk as the world’s most ubiquitous data carrier. CD-RW can do everything a floppy can do, but with 400 times the capacity and at relatively fast speeds. In other words, it is like a gigantic floppy that bridges the gap between audio and computers. Moreover, the software provided with these drives lets you expertly assemble and store data, creating either erasable or permanent files; audiophiles who are PC-savvy will absolutely love the audio possibilities.

So, should everyone rush out and buy a CD-RW for their PC? That depends. The DVD-RAM format is under development, and although different manufacturers have already announced incompatible implementations — which will impede universality — its still higher data capacity (2.6, 3.0, or 5.2 GB per side, depending on the version) will eclipse that of CD-RW. However, stand-alone CD-RW recorders like the Philips CD-R870 could make CD-RW the next popular consumer audio-recording format. Clearly, CD-RW will fit into many diverse niches and engender further evolutionary developments — sure signs of a very fit species indeed.
HEAR WHY THE
BOSE® WAVE® RADIO
WAS NAMED A
"BEST NEW
PRODUCT OF 1994"
BY BUSINESS WEEK.

Tabletop radios are popular for their convenience and small size. But their sound quality leaves much to be desired. No one really expects high-fidelity sound from a radio. Until now.

Bose presents the Wave radio. It's the one radio acclaimed by leading audio critics. Because it's the one radio

breath of air to fill an entire concert hall, the waveguide produces room-filling sound from a small enclosure. This technology and performance is available in no other radio.

You'll touch a button and hear your favorite music come alive in rich stereo sound. You'll hear every note the way it's meant to be heard. The Wave radio measures just 4¾"H x 14"W x 8¼"D and fits almost anywhere. So you can listen in your bedroom, living room, kitchen, or

any room. And with your choice of imperial white or graphite gray, the Wave radio not only fits in any room, it fits any decor.

REMOTE-CONTROLLED CONVENIENCE.
Operate the radio from across the room with the credit card-sized remote control. Set six AM and six FM stations, and switch between them at the touch of a button. You can even bring great Bose sound to recorded music, TV programs, or movies by connecting the Wave radio to your CD or cassette player, TV, or VCR.

CALL NOW AND MAKE SIX INTEREST-FREE PAYMENTS.
The Wave radio is available for $349 directly from Bose, the most respected name in sound. So call 1-800-845-BOSE, ext. R7223, to learn more about our in-home trial and satisfaction guarantee. When you call, ask about our six-month installment payment plan.

Or, if you prefer, return the coupon below.

Hear the radio that woke up an entire industry.

that delivers big, rich, lifelike stereo sound plus a small, convenient size.

THE BEST-SOUNDING RADIO YOU CAN BUY.
We think the Wave radio is the best-sounding radio you can buy. And audio critics agree.

Radio World called the sound "simply amazing...a genuine breakthrough in improved sound quality." Business Week named the Wave radio a "Best New Product of 1994." Popular Science called it "a sonic marvel" and gave it a prestigious "Best of What's New" award. The key is our patented acoustic waveguide speaker technology. Just as a flute strengthens a

Wired magazine said it has a "clean, sweet sound that will have your friends wondering where you've hidden your fancy speakers."

But you have to hear the Wave radio for yourself to believe it. Call today.

CALL 1-800-845-BOSE, EXT. R7223.

When you call, ask about our six-month installment payment plan. (Available on telephone orders only.) Also ask about FedEx delivery service.

Please specify your color choice when ordering the Wave radio:

[ ] Imperial White  [ ] Graphite Gray

Mr./Mrs./Ms. (Please Print)

Name

Address

City  State  Zip

Daytime Telephone

Evening Telephone

Mail to: Bose Corporation, Dept. CDD-R7223, The Mountain, Framingham, MA 01701-9168, or fax to 1-800-862-BOSE (1-800-862-2673).

©1998 Bose Corporation. Covered by patent rights issued and/or pending. Installment payment plan not to be combined with any other offer and available on credit card orders only. Price does not include $15 shipping and handling and applicable sales tax. Price and/or payment plan subject to change without notice. FedEx service marks used by permission. Frank Beacham. Radio World, 12/93. Wired, 6/94.
dipoles and dolby digital

Q: I understand that the surround signal in Dolby Pro Logic is mono and designed so that you can't pinpoint the source of the sound, and that the best surround speakers spread the sound using bipolar or dipolar configurations, not aiming it directly at the listeners. On the other hand, in Dolby Digital you are supposed to be able to tell if a sound is coming from the left or the right, and hear it moving from one to the other. In that case, how do dipolar surrounds perform? Should I use regular front-firing speakers instead? And, cost aside, should they be identical to my front speakers?

A: Not everyone would agree, but in my experience, the diffuse nature of the surround-channel sound in Pro Logic is largely a product of the time delay in that channel and its high-frequency rolloff. Using dipolar or bipolar speakers may enhance that effect a bit, but I've never heard a major difference between those and regular front-firing speakers. Similarly, I've used both types of surround speakers for Dolby Digital and have found that dipole work just fine.

As for using identical speakers, that would be ideal if you can manage it. And it need not cost the earth: five small satellites together with a powered subwoofer can give you a high degree of tonal consistency without sacrificing anything in terms of spectral range.

audio time-shifting

Q: The radio stations in my area broadcast my favorite programs at odd hours, and I would like to record them so that I can listen at my own convenience. Does anyone make an audio recorder that can be programmed to record different stations at different times of the day?

A: Many early cassette decks had provisions for timer recording, and in Japan, where time-shifting audio was popular, there were many models of external timers to operate these machines. A few showed up on this side of the ocean, but they were all one-event devices, and none that I'm aware of had the capability of changing stations.

The timer functions have disappeared from cassette decks, but it may be possible to program your VCR to record audio automatically if you can instruct it to tape from the line inputs rather than its internal tuner. This would allow multi-event recording but not, I'm afraid, changing stations.

Coupling the VCR together with a receiver with a programmable timer would allow you to record multiple events on different stations. Although timers have disappeared from today's receivers, some high-end separate tuners, such as Onkyo's Integra T-90901, have timers. A clock radio with line-level outputs, such as the Bose Wave Radio, might also work for you.

Finally, if you can figure out how to program it, a universal remote control with "macro" capability and a built-in timer may be able to perform the tuner and VCR operations you need.

hanging speakers

Q: A lot of what I've read about speakers and their placement has to do with floor stands. Are there any negatives to hanging speakers from the ceiling using cables?

A: The positioning of speakers is concerned with their relationship to neighboring surfaces and the main listening locations. Whether you prop them up on stands or hang them from wires makes little difference. The only drawback I can see to suspending them is that they would probably be quite difficult to move if you find that their position leaves something to be desired acoustically. Perhaps the best thing to do is to use makeshift stands to determine their optimal position — mere inches can make a difference — and suspend them only when you have determined exactly where they should go.

cleaning overkill

Q: I clean both my compact discs and vinyl LPs with isopropyl alcohol and bathroom tissue. I can see they're clean, but I worry that I might be doing some damage. Am I?

A: First, neither type of disc requires that drastic a cleaning regimen, although you're certainly far from the only person I've encountered who cleans with alcohol. The problem is that alcohol can leach plasticizers out of a vinyl disc, rendering it brittle and subject to damage and noise. Most LPs need only a dry brushing before every play; liquids should be used sparingly, and nothing much stronger than distilled water is really necessary. And I'd be hesitant to use bathroom tissue, which can leave fibers behind. A clean dry cloth is better, or a dedicated record brush. And never put an LP away wet.

As for CDs, if you can see dust or fingerprints, I'd give them a wipe with whatever you use to clean your glasses. Otherwise, leave them alone unless they actually skip or cause your player to mute.

tape typology

Q: I recently purchased blank cassettes with normal, high-bias, and metal formulations (Types I, II, and IV). Is it really worth it to buy the premium formulations? Is there much improvement in the sound? Also, whatever happened to Type III?

A: The advantages of the more expensive tape types depend on what you intend to do. Type II tapes offer better high-frequency performance and higher output than Type I varieties, and metal offers further improvements. But if you are making tapes to listen to in the car or on a boombox at the beach, save your money.

Tapes are generally good enough today that you can make high-quality recordings even on Type I tape, especially if the deck you're using has Dolby HX Pro headroom extension. The important thing is that the tape be closely matched to the recorder in terms of bias, equalization, and output level. Get that right — the easiest way is to buy a recorder with automatic circuits that optimize the settings for you — and use the highest level of noise reduction available, usually Dolby C or Dolby S, and you'll be surprised at the audio quality.

Type III tape was a dual-layer variety called "ferichrome." It was expensive to make and offered very little advantage over the other formulations, so it quickly disappeared — but not before its number had been assigned.

If you have a question about audio, send it to Q&A, Stereo Review, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.
**A World of Choice**  The Digital Satellite System (DSS) from Sony opens up a world of over 200 channels of digital-rich entertainment with the touch of a button. You'll find what you're looking for faster with a powerful 32-bit microprocessor and custom menus that easily guide you to your favorite programming. It's just another way Sony makes great things happen.
A GUY IS WALKING down the street late one night, and he comes across another guy wandering around under a streetlight, hunched over. The first guy asks him, "Did you lose something?" And the second guy says, "I lost my car keys!" So the first guy starts looking too, but he can't find anything. Finally he says, "Don't you have any idea where you dropped them?" And the second guy waves his hand toward the shadows between the streetlights and says, "Somewhere up there." The first guy exclaims, "Well, then, why aren't you looking there?" The second guy says simply, "The light's better over here."

You might not think that's a particularly funny story, but, unfortunately, it explains a lot about the consumer audio industry. Many companies religiously use what I'll call Streetlight Thinking when developing new products. They push the envelope only where it's easy to push, and their so-called "new and improved" products might not be especially useful or welcome, but they persist in this approach anyway, precisely because it's an easy way to develop new products.

The audio industry is caught in a monolithic example of classic Streetlight Thinking. Companies are scrambling to develop a new generation of digital audio technology. Although they will (I hope) add genuine improvements, such as multichannel surround sound, one of their principal "improvements" will undoubtedly be increasing the sampling rate and the word length. For example, many companies have proposed that any new digital audio format should use a sampling rate of 96 kHz and a word length of 24 bits. They are doing this not because it will make their products particularly better, but because it's easy to do.

A 96/24 format will theoretically provide a flat frequency response to 48 kHz and a dynamic range of 144 dB. For starters, however, no one has ever scientifically demonstrated that humans can perceive audio information at frequencies above 24 kHz, so half of the frequency response would be wasted. Moreover, as we understand the laws of physics, it is not feasible to design electrical equipment with a dynamic range of 144 dB.

Proponents of the "improved" specifications also seem to overlook the fact that neither microphones nor loudspeakers can linearly transduce audio signals spanning such huge frequency and dynamic ranges, nor can any known musical instrument operate over such ranges. These drawbacks have not prevented some enthusiastic individuals from proposing even mightier specifications, including a 192-kHz sampling rate and 36-bit words.

It is true that there have been a few lonely voices of reason. Bob Stuart of Meridian, one of the most thoughtful men in audio, has stated that for optimal transparency, a new consumer format should use a sampling rate of 58 kHz and a word length of 18 to 20 bits. Unfortunately, his scientific voice has been drowned out by the very loud babble of people driven by anecdotal "evidence" and intent on pushing the easy envelope.

The audio industry is caught in a monolithic example of classic Streetlight Thinking. Companies are scrambling to develop a new generation of digital audio technology. Although they will (I hope) add genuine improvements, such as multichannel surround sound, one of their principal "improvements" will undoubtedly be increasing the sampling rate and the word length. For example, many companies have proposed that any new digital audio format should use a sampling rate of 96 kHz and a word length of 24 bits. They are doing this not because it will make their products particularly better, but because it's easy to do.

A 96/24 format will theoretically provide a flat frequency response to 48 kHz and a dynamic range of 144 dB. For starters, however, no one has ever scientifically demonstrated that humans can perceive audio information at frequencies above 24 kHz, so half of the frequency response would be wasted. Moreover, as we understand the laws of physics, it is not feasible to design electrical equipment with a dynamic range of 144 dB.

Proponents of the "improved" specifications also seem to overlook the fact that neither microphones nor loudspeakers can linearly transduce audio signals spanning such huge frequency and dynamic ranges, nor can any known musical instrument operate over such ranges. These drawbacks have not prevented some enthusiastic individuals from proposing even mightier specifications, including a 192-kHz sampling rate and 36-bit words.

It is true that there have been a few lonely voices of reason. Bob Stuart of Meridian, one of the most thoughtful men in audio, has stated that for optimal transparency, a new consumer format should use a sampling rate of 58 kHz and a word length of 18 to 20 bits. Unfortunately, his scientific voice has been drowned out by the very loud babble of people driven by anecdotal "evidence" and intent on pushing the easy envelope.

The audio industry is caught in a monolithic example of classic Streetlight Thinking. Companies are scrambling to develop a new generation of digital audio technology. Although they will (I hope) add genuine improvements, such as multichannel surround sound, one of their principal "improvements" will undoubtedly be increasing the sampling rate and the word length. For example, many companies have proposed that any new digital audio format should use a sampling rate of 96 kHz and a word length of 24 bits. They are doing this not because it will make their products particularly better, but because it's easy to do.

A 96/24 format will theoretically provide a flat frequency response to 48 kHz and a dynamic range of 144 dB. For starters, however, no one has ever scientifically demonstrated that humans can perceive audio information at frequencies above 24 kHz, so half of the frequency response would be wasted. Moreover, as we understand the laws of physics, it is not feasible to design electrical equipment with a dynamic range of 144 dB.

Proponents of the "improved" specifications also seem to overlook the fact that neither microphones nor loudspeakers can linearly transduce audio signals spanning such huge frequency and dynamic ranges, nor can any known musical instrument operate over such ranges. These drawbacks have not prevented some enthusiastic individuals from proposing even mightier specifications, including a 192-kHz sampling rate and 36-bit words.

It is true that there have been a few lonely voices of reason. Bob Stuart of Meridian, one of the most thoughtful men in audio, has stated that for optimal transparency, a new consumer format should use a sampling rate of 58 kHz and a word length of 18 to 20 bits. Unfortunately, his scientific voice has been drowned out by the very loud babble of people driven by anecdotal "evidence" and intent on pushing the easy envelope.

The audio industry is caught in a monolithic example of classic Streetlight Thinking. Companies are scrambling to develop a new generation of digital audio technology. Although they will (I hope) add genuine improvements, such as multichannel surround sound, one of their principal "improvements" will undoubtedly be increasing the sampling rate and the word length. For example, many companies have proposed that any new digital audio format should use a sampling rate of 96 kHz and a word length of 24 bits. They are doing this not because it will make their products particularly better, but because it's easy to do.

A 96/24 format will theoretically provide a flat frequency response to 48 kHz and a dynamic range of 144 dB. For starters, however, no one has ever scientifically demonstrated that humans can perceive audio information at frequencies above 24 kHz, so half of the frequency response would be wasted. Moreover, as we understand the laws of physics, it is not feasible to design electrical equipment with a dynamic range of 144 dB.

Proponents of the "improved" specifications also seem to overlook the fact that neither microphones nor loudspeakers can linearly transduce audio signals spanning such huge frequency and dynamic ranges, nor can any known musical instrument operate over such ranges. These drawbacks have not prevented some enthusiastic individuals from proposing even mightier specifications, including a 192-kHz sampling rate and 36-bit words.

It is true that there have been a few lonely voices of reason. Bob Stuart of Meridian, one of the most thoughtful men in audio, has stated that for optimal transparency, a new consumer format should use a sampling rate of 58 kHz and a word length of 18 to 20 bits. Unfortunately, his scientific voice has been drowned out by the very loud babble of people driven by anecdotal "evidence" and intent on pushing the easy envelope.
Most folks buy a big-screen TV because they want that gigantic movie theater feeling in the comfort of their own living room. Problem is, watching a big screen TV without theater sound is like watching 4th of July fireworks without the "Ka-bam"! That's why we created the Boston SoundBar™ Cinema—a complete home theater system in a very convenient package—three small components connected by three simple wires. Just add a TV and a VCR and you’re ready to enjoy big, satisfying theater sound. SoundBar even comes with a pre-programmed remote control, allowing you to operate virtually all your components using one handy device. Best of all, it's priced so you can hear the whole picture without emptying your whole bank account. Of course, seeing—and hearing—is believing. You can do a lot of both at your nearest Boston dealer. And, feel free to use the whole TV screen.
How I Got Started In Audio

FROM TIME TO TIME, I have been asked by readers how they can become hi-fi equipment reviewers. Frankly, I have always found this to be an unanswerable question, since in my case it came about through a unique series of events that are not likely to be repeated, although the story may be of some interest to today's readers.

For one thing, in my formative years (the mid-1930s) there was no audio (or video) industry as we now know it. Instead, we enjoyed acousticphonographs and 78-rpm records of distinctly "lo-fi" quality (and with a typical 3- or 4-minute playing time), AM radios, and movie theaters (black-and-white only). These technological wonders were the ancestors of today's high-fidelity music and home-theater systems.

As a youngster, I was a voracious reader with an enthusiastic interest in science and technology. Purely by accident, I was introduced by a friend to the hobby of amateur ("ham") radio, and soon I was incurably hooked on electronics (a term that had not yet been coined). I became a licensed ham-radio operator at 14 and am still active as W2KFB today.

This interest logically led me to embark on an electrical-engineering program in college. During my junior year, the Pearl Harbor attack occurred. I enlisted in the Army Signal Corps reserve, completed my schooling, and two weeks after graduation went on active duty. In the following couple of years I received intensive training in radar technology at Harvard, MIT, and the Signal Corps Radar School. While I was en route to the Philippines, the atom bombs ended the war, and I spent the following year with my four-man radar maintenance team in the occupation of Japan.

Returning to civilian life, I joined the research and development staff of a large conglomerate that was involved with such diverse projects as medical electronics, motion-picture projectors, theater sound systems, and Doppler radar navigation systems, among many others.

During the late 1940s I noticed that some of my fellow engineers were spending their lunch hours in vigorous discussions of a subject that was totally unfamiliar to me. Intrigued, I soon became immersed in the arcane world of woofers, tweeters, and so on, and my life was irrevocably changed.

It started innocently enough. Our employer had no objections to our using its extensive laboratory facilities, outside of working hours, for measurements of our own amplifiers, tuners, and speakers. The theater section of the lab was equipped with loudspeakers (Altec Voice of the high-fidelity music recording and reproduction).

Eventually, four of us decided to publish a newsletter — on a strictly part-time basis — to provide unbiased information about a variety of consumer audio components. The Audio League Report was probably the audiophile's equivalent (in microcosm) of the established consumer publications. It reached 5,000 readers, but unfortunately we were able to produce only seventeen issues over a three-year period! However, during its brief tenure the Audio League had established a reputation for unbiased and enthusiastic interest in the rapidly growing hobby of support both of us and our families on a full-time basis. Around this time, Ziff-Davis, then the publisher of Hi-Fi/Stereo Review and Electronics World, made us an offer that could not be refused, compensating my partner for his share of our assets and securing my services, and the name of Hirsch-Houck Laboratories, for the exclusive use of Z-D publications.

My first Stereo Review test report appeared in the October 1961 issue and dealt with six stereo phono cartridges. The total number of my test reports for this magazine to date is close to 2,400, and combined with those done for other publications, the total is around 4,000!

This account may give the reader some insight as to why I have never been able to give a meaningful answer to those who ask me how they can become an equipment reviewer. The best I can do is to stress that you must be an enthusiast who is deeply interested and involved in the products and their application.
For years, we've been telling you where to hide the subwoofer. Finally, we've done it for you.

Introducing the Boston Lynnfield VR970 speaker system with built-in powered subwoofer.

A subwoofer is a wonderful thing. It adds palpable depth and power to your music and movies. But it also subtracts several cubic feet of space from your living room (not to mention the hassles of placement, wiring, and blending its sound with the rest of your system). "So," we mused, "why not find a better place for a sub than sticking out from behind the couch? Like inside a pair of reference-quality floor-standing speakers?"

The result: The new Lynnfield VR970.

Featuring our patented AMD™ tweeter technology. A sleek design. Two built-in 10-inch subwoofers—one in each speaker—powered by dual high-current 100-watt amplifiers. And our exclusive Active Bass Contour™ control. There's a lot more to say about the VR970 and its siblings, the VR960 and VR950. And, we've found a good place for that, too: your local Boston Acoustics Dealer. We invite you to stop by and hear the new Lynnfield VR™ Series for yourself.
MUSIC ON CD-R IS RECORDED AS MICROSCOPIC MARKS. THE ULTRA-REFINED MSi CYANINE RECORDING LAYER ON TDK CERTIFIED PLUS CD-R HELPS CREATE PERFECTLY FORMED RECORDED MARKS, RESULTING IN LOWER JITTER AND BETTER DATA RETRIEVAL. MORE ACCURATE MUSIC. PURE MUSIC IS ACCURATE DATA.

DJ CLUE USES TDK CD-R FOR IT'S SOUND QUALITY AND ULTIMATE RELIABILITY
Onkyo TX-DS747
Dolby Digital Receiver

DANIEL KUMIN, START LABORATORIES

These days, just about as soon as I wave bye-bye to the latest low-cost, high-performance Dolby Digital A/V receiver, the UPS truck pulls up with a more recent example of the genre to take its place. The latest is the Onkyo TX-DS747, which has a few new twists but largely follows this manufacturer's familiar pattern for surround-sound receivers: solidly adequate power, flexible inputs and outputs (and plenty of them), powerful remote control, and a generally no-nonsense implementation and layout.

In its multichannel modes the receiver is rated to deliver 80 watts to each of the three front channels and 40 watts per channel to the surround outputs, all from 20 Hz to 20 kHz into 8 ohms at 0.08 percent total harmonic distortion (THD). The less-than-equal power to the surround channels is a bit unusual these days, at least in this price range. Then again, so is Onkyo's full-range, low-distortion spec for these outputs. On the whole, it's close to a wash, and our tests confirmed the spec. In stereo operation, the power ratings go up to 90 watts per channel, but in the real world that is only 0.5 dB "louder" than the 40-watt surround rating.

The TX-DS747 looks very much like the standard Onkyo design of late. The faceplate is the usual boring black (or elegantly understated black, depending on your perspective), with the usual barely legible white lettering. The labels are actually gray-tinged rather than bright white, which certainly doesn't help them stand out from the black background. In compensation, the aqua-hued display window is encouragingly free of silliness, with easily readable primary data and mostly text-based secondary information, such as surround and tuning modes, though the text is far too small to read from a typical listening position. The front-panel readout is mirrored, mostly, by an equally simple and legible on-screen display, which also guides you through the receiver's setup routines.

At first glance the front panel appears conventional enough, with numerous pushbuttons, two small bass and treble knobs, and a large master volume knob. However, there is a third knob-like appliance, a round spinner with telephone-dial indentations (remember those?) that's labeled Smart Scan Controller. This is a "data wheel" that lets you riffle in both directions through displays, or through increments or decrements of adjustable parameters, depending on which of four adjacent keys you select. The first of these, Preset, lets the data wheel step through the memorized radio frequencies, and the second, Tuning, gives the wheel conventional manual or auto-seek tuning-knob action. The Surround button lets the data wheel step through the receiver's eight surround modes, four of them variants of Dolby Pro Logic (DPL), and Parameter lets you spin through all of the system and surround setup adjustments, which you select by way of the Enter key next door.

The Smart Scan Controller is a usefully integrated design that enables you to page through every one of the TX-DS747's modes and controls directly at the panel, without recourse to the remote control. For its part, the supplied remote handset is also unusual. Preprogrammed to control a full A/V system
The digital inputs responding both to Dolby Digital signals and to standard, two-channel PCM bitstreams are provided by three independent data ports, two coaxial (electrical) and one optical. Each can be assigned to any one digital source. You cannot have one digital source feed two input-selector positions, nor can two inputs be directed to the same source selection. There is no AC-3/RF input, so connecting a Dolby Digital laserdisc player requires an outboard demodulator. (The graphic and captions in the owner’s manual accompanying my early production sample of the TX-DS747 clearly show and specify an AC-3/RF laserdisc hookup at the Coax-2 jack, but this dog don’t hunt: I tried it.) The digital-input trio wins points nonetheless.

Speaker outputs use reasonably solid multiway binding posts all around. Although the spacing is designed to prevent use of dual banana plugs, if you’re willing to jam them in they’ll just barely fit. Onkyo provides every video connection in both S-video and composite-video formats, and the receiver even converts S-video inputs to composite-video outputs if necessary. Preamp outputs are provided for all audio channels, including, of course, the low-frequency effects (LFE) or subwoofer channel. There’s also a line-level Multi Source Pre-Out, which can extend two-channel playback to a remote room with independent source selection and volume using an optional IR-repeater system and another remote handset.

Inside, the TX-DS747 is arranged with its heat-sink assembly centered fore and aft. A fan in the left-rear corner is thermostatically operated to cool the power-transistor array under stressful conditions. On the test bench the fan proved moderately noisy, but you’d never hear it in normal use.

Following my usual practice, I initially set up the Onkyo receiver to drive all three front speakers, a pair of B&W Model 803 Series 2 speakers at left and right and a B&W HTM center speaker, full-range, thus demanding the maximum from its amplifiers. Later, I evaluated full-system and crossover performance with the B&W 800ASW powered subwoofer hooked up as well. The Citation 7.3 surrounds I used are moderately low-sensitivity, four-driver speakers with selectable dipolar or bipolar operation.

The Onkyo’s bass-management options are just short of complete: the only surround-speaker options are Yes and No. In Pro Logic and DSP-surround modes these speakers run full-range when you set up without a subwoofer, but when a Dolby Digital signal is present they cross over at 80 Hz willy-nilly whether or not you’re using a subwoofer. Generally, this modal change is immaterial since most Dolby Surround matrixed mixes have little or no surround content below 100 Hz anyway. The more thought-provoking point is that if you wanted to connect full-range surrounds for Dolby Digital playback, you’d be stymied.

I have no quibbles with the TX-DS747’s power stocks, whatever its printed specs. The receiver drove my full-range setup comfortably and crisply in both stereo and surround playback, which sounded very transparent in my 16 x 20-foot studio. Despite their modest ratings, the surround channels did not seem to run short of gas significantly before the front-stage trio. All together, the five channels achieved quite high levels before beginning to sound noticeably bright, which occurred a bit before the onset of discernible harshness. With the powered sub connected, headroom was ample. Unless you have a really big room or unusually low-sensitivity speakers, the TX-DS747 should provide enough surround power for almost any system with a powered sub.

The TX-DS747 was impressively quiet in all modes. Dolby Digital playback was as free of hum and buzz as with any 5.1-channel A/V receiver I’ve yet tried, and the noise remained almost as low in Pro Logic and DSP-surround programs. Pro Logic sound was outstanding, with a precision and freedom from surround-channel “pumping” that approached the theoretical limits of this matrixed mode. Dialogue leakage was almost nil, as were any obvious dynamic artifacts or distortions. If the “inner detail” and clarity of ultra-low-level filigree were not equal to that from the best stand-alone Pro Logic and Dolby Digital preamp/processors, they were still well above the average for A/V receivers.

The only lab-test result that calls for comment is the unusually high linearity error of the system’s digital-to-analog (D/A) converters (see “Stereo Performance, Digital Inputs” in the “Measurements” box on page 42). While the linearity result virtually guarantees both low digital-input noise levels and without error of the system’s digital-to-analog (D/A) converters (see “Stereo Performance, Digital Inputs” in the “Measurements” box on page 42). While the linearity result virtually guarantees both low digital-input noise levels and without signal EN16 numbers, it also insures that the with-signal EN16 and EN20 numbers will be worse (higher). With very critical material, like CD test tones and the rare well-made “20-bit” CD, the effect might be audible as noise and distortion.

In addition to “plain” Pro Logic or Dolby Digital for movie surround, the TX-DS747 permits you to dial in three variants labeled Action, Drama, and Musical. The differences were fairly subtle. Note that while this receiver is not THX-certified, it provides both main-channel re-equalization (treble-smoothing) and surround-channel time-matching, two of the salient THX processes, and the most valuable ones in my book.

The receiver’s remaining DSP modes — Hall, Live, Arena, and Stadium — are all five-channel programs to enhance conventional two-channel music recordings, but each employs the center and surround channels a bit differently

40 STEREO REVIEW MARCH 1998
A Revelation In High-End Sound!

"I was floored by the Paradigm Active/20...this is hands down the best sounding two-way 6-incher I've heard at any price...highly recommended!"

— Corey Greenberg, Audio Magazine

"this particular system is...ten leaps forward in terms of performance...destined to become a legend."

— Tom Naussine, Video Magazine

Paradigm Reference fully powered speakers are highly advanced Integrated Active Systems designed to deliver breathtaking high-end sound!

At the heart of these incredible speakers are highly sophisticated electronic crossover/amplifiers. These are matched to high precision drive units in a closed system that utilizes both active frequency and phase optimization. The result is unprecedented spectral and phase coherent accuracy.

We invite you to visit your nearest Authorized Paradigm Reference Dealer and experience these stunning Reference Active speaker systems for yourself!
### Measurements

#### Dolby Digital (AC-3) Performance

All data except frequency response obtained with Dolby Digital signals from Dolby Labs' AC-3 test DVD using "small" speaker settings. Except for maximum output-power and channel-imbalance measurements, the speaker-balance controls and volume control were set to produce 2.83 volts into 8 ohms from a -20-dBFS' signal from all channels. All input signals were dithered (which sets limits on measured noise and distortion).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output at Clipping (1 kHz, into 8/4 ohms)</td>
<td>121/186 watts, 46/80 watts (all channels driven)</td>
</tr>
<tr>
<td>Distortion at 1 Watt (THD+N, 1 kHz)</td>
<td>8 and 4 ohms, 0.04%</td>
</tr>
<tr>
<td>Noise (A-wtd) worst case (surrounds)</td>
<td>&lt;71.0 dB</td>
</tr>
<tr>
<td>Excess Noise (worst case, with signal)</td>
<td>16-bit: +4.45 dB, 18-bit: +22.3 dB</td>
</tr>
<tr>
<td>Frequency Response (worst cases, see text)</td>
<td>Front: 20 Hz to 20 kHz +0.3, -0.8 dB, Center: 20 Hz to 20 kHz +0.6 dB, Surround: 20 Hz to 7.6 kHz +0.1, -3 dB</td>
</tr>
<tr>
<td>Frequency Response Frequency (1 kHz)</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Sensitivity (for 1 watt at max volume)</td>
<td>CD: 90 watts (8 ohms)</td>
</tr>
<tr>
<td>Noise (at 65 dBf)</td>
<td>44.1 dBf</td>
</tr>
<tr>
<td>Distortion at Rated Power</td>
<td>90 watts (8 ohms)</td>
</tr>
<tr>
<td>Sensitivity (50-dB quieting)</td>
<td>Mono: 19.9 dBf</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>121 watts</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>200 watts</td>
</tr>
<tr>
<td>Distortion at 1 Watt</td>
<td>Mono: 0.02%</td>
</tr>
<tr>
<td>Excess Noise (without/with signal)</td>
<td>16-bit: +0.26, -1.54 dB, 18-bit: +0.26, -0.86 dB</td>
</tr>
<tr>
<td>Channel Separation</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Selectivity</td>
<td>Mono: 55.3 dB, Stereo: 5.3 dB</td>
</tr>
<tr>
<td>AM Rejection</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30 Hz to 15 kHz, +0.8 dB</td>
</tr>
<tr>
<td>RIAA Phono-Equalization Error</td>
<td>-0.20 dB</td>
</tr>
</tbody>
</table>

#### Analog Input Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input-Overload Level (re 2-volt input, surround off)</td>
<td>CD: +10.25 dB</td>
</tr>
<tr>
<td>Noise (re 1-watt output, A-wtd)</td>
<td>4%</td>
</tr>
<tr>
<td>Input-Overload Level</td>
<td>Mono: -82.4 dB</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>48/80 watts</td>
</tr>
<tr>
<td>THD+N at 65 dBf</td>
<td>4%</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>121 watts</td>
</tr>
<tr>
<td>Capture Ratio (at 65 dBf)</td>
<td>3 dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Am Rejection</td>
<td>20 kHz, +0.2 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Input-Overload Level (re 2-volt input, surround off)</td>
<td>Mono: +10.25 dB</td>
</tr>
<tr>
<td>Noise (re 1-watt output, A-wtd)</td>
<td>-82.4 dB</td>
</tr>
<tr>
<td>Input-Overload Level</td>
<td>Mono: -82.4 dB</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>48/80 watts</td>
</tr>
<tr>
<td>THD+N at 65 dBf</td>
<td>4%</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>121 watts</td>
</tr>
<tr>
<td>Capture Ratio (at 65 dBf)</td>
<td>3 dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Am Rejection</td>
<td>20 kHz, +0.2 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>47.1 dB</td>
</tr>
</tbody>
</table>

#### Stereo Performance, Digital Inputs

Reference volume setting for noise is the same as for Dolby Digital, subwoofer off.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>20 Hz to 20 kHz +0.3, -0.8 dB</td>
</tr>
<tr>
<td>Noise (A-wtd)</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Excess Noise (without/with signal)</td>
<td>16-bit: +0.26, -1.54 dB, 18-bit: +0.26, -0.86 dB</td>
</tr>
<tr>
<td>Channel Separation</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Selectivity</td>
<td>Mono: 55.3 dB, Stereo: 5.3 dB</td>
</tr>
<tr>
<td>AM Rejection</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30 Hz to 15 kHz, +0.8 dB</td>
</tr>
</tbody>
</table>

#### Analog Input Frequency Response

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input-Overload Level (re 2-volt input, surround off)</td>
<td>CD: +10.25 dB</td>
</tr>
<tr>
<td>Noise (re 1-watt output, A-wtd)</td>
<td>4%</td>
</tr>
<tr>
<td>Input-Overload Level</td>
<td>Mono: -82.4 dB</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>48/80 watts</td>
</tr>
<tr>
<td>THD+N at 65 dBf</td>
<td>4%</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>121 watts</td>
</tr>
<tr>
<td>Capture Ratio (at 65 dBf)</td>
<td>3 dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Am Rejection</td>
<td>20 kHz, +0.2 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>47.1 dB</td>
</tr>
</tbody>
</table>

#### Tuner Section

All figures for FM except frequency response.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (50-dB quieting)</td>
<td>Mono: 19.9 dBf</td>
</tr>
<tr>
<td>Noise (at 65 dBf)</td>
<td>Mono: -78.2 dB</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>48/80 watts</td>
</tr>
<tr>
<td>THD+N at 65 dBf</td>
<td>4%</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>121 watts</td>
</tr>
<tr>
<td>Capture Ratio (at 65 dBf)</td>
<td>3 dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Am Rejection</td>
<td>20 kHz, +0.2 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30 Hz to 15 kHz, +0.8 dB</td>
</tr>
</tbody>
</table>

#### Speaker Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output at Clipping (1 kHz, into 8/4 ohms)</td>
<td>121/186 watts, 46/80 watts (all channels driven)</td>
</tr>
<tr>
<td>Distortion at 1 Watt (THD+N, 1 kHz)</td>
<td>8 and 4 ohms, 0.04%</td>
</tr>
<tr>
<td>Noise (A-wtd) worst case (surrounds)</td>
<td>&lt;71.0 dB</td>
</tr>
<tr>
<td>Excess Noise (worst case, with signal)</td>
<td>16-bit: +4.45 dB, 18-bit: +22.3 dB</td>
</tr>
<tr>
<td>Frequency Response (worst cases, see text)</td>
<td>Front: 20 Hz to 20 kHz +0.3, -0.8 dB, Center: 20 Hz to 20 kHz +0.6 dB, Surround: 20 Hz to 7.6 kHz +0.1, -3 dB</td>
</tr>
<tr>
<td>Frequency Response Frequency (1 kHz)</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Sensitivity (for 1 watt at max volume)</td>
<td>CD: 90 watts (8 ohms)</td>
</tr>
<tr>
<td>Noise (at 65 dBf)</td>
<td>44.1 dBf</td>
</tr>
<tr>
<td>Distortion at Rated Power</td>
<td>90 watts (8 ohms)</td>
</tr>
<tr>
<td>Sensitivity (50-dB quieting)</td>
<td>Mono: 19.9 dBf</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>121 watts</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>200 watts</td>
</tr>
<tr>
<td>Distortion at 1 Watt</td>
<td>Mono: 0.02%</td>
</tr>
<tr>
<td>Excess Noise (without/with signal)</td>
<td>16-bit: +0.26, -1.54 dB, 18-bit: +0.26, -0.86 dB</td>
</tr>
<tr>
<td>Channel Separation</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Selectivity</td>
<td>Mono: 55.3 dB, Stereo: 5.3 dB</td>
</tr>
<tr>
<td>AM Rejection</td>
<td>47.1 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>30 Hz to 15 kHz, +0.8 dB</td>
</tr>
</tbody>
</table>

#### Analog Input Frequency Response

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input-Overload Level (re 2-volt input, surround off)</td>
<td>CD: +10.25 dB</td>
</tr>
<tr>
<td>Noise (re 1-watt output, A-wtd)</td>
<td>4%</td>
</tr>
<tr>
<td>Input-Overload Level</td>
<td>Mono: -82.4 dB</td>
</tr>
<tr>
<td>Dynamic Power</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>48/80 watts</td>
</tr>
<tr>
<td>THD+N at 65 dBf</td>
<td>4%</td>
</tr>
<tr>
<td>Dynamic Headroom</td>
<td>121 watts</td>
</tr>
<tr>
<td>Capture Ratio (at 65 dBf)</td>
<td>3 dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>79/146 watts</td>
</tr>
<tr>
<td>Am Rejection</td>
<td>20 kHz, +0.2 dB</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>47.1 dB</td>
</tr>
</tbody>
</table>
back-lighting is a surprise at this price level. Moreover, the seven-position slide switch mounted toward the bottom, which you have to use to select the source that the remote’s preprogrammed keys will command at any given time, is none too positive in its click stops, too hard to view in dim home-theater lighting, and too fussy for easy real-world use. Though there are only sequential (up/down) keys for selecting surround modes, the remote provides direct-access buttons for the tape, tuner, and CD options and separate sequence keys to select the Video 1-4 inputs. But since the CD and tape keys are not programmable, unless you have Onkyo-brand CD and tape components, the remote’s transport controls are useless with these sources.

Onkyo has for some years now produced a couple of very good FM tuners, so I had high hopes for the TX-DS747’s radio section. Unfortunately, FM reception was standard-issue receiver-grade, 1998-style. That means I got solidly hi-fi (though very slightly squished-sounding) reproduction from strong local signals, okay but rather noisy and mono-ized sound from medium-strength stations, and essentially useless sound from even borderline “fringe” or low-power signals. However, and rather more unexpectedly, the AM section tuned more stations intelligibly than the norm: well over a dozen on the best stations. (I checked on three different days to make sure that freak atmospherics weren’t the reason: on the worst day I got eight stations.)

There’s more that could be said about the TX-DS747, but much of it is familiar A/V-receiver fare: facilities for mixed audio/video source dubbing or simulcasts, Onkyo’s Intelligent Power Management auto-turn-on/off routine, a “Midnight Theater” dynamic-range control for Dolby Digital programs, the usual bass-boost option (“3-D Bass”), and so on. The bottom line seems pretty clear-cut: this is a fine-performing, well-equipped Dolby Digital receiver from a maker with long experience in the high-end A/V receiver game. While there is now brisk 5.1-class competition priced a couple of C-notes less, if you care about having superior ambience enhancement for music, a wide array of inputs and outputs, and a powerful remote control — to name just three outstanding features of the TX-DS747 — more than you care about simple watts-per-dollar, you will not feel the least bit cheated.

Almost overnight PARADIGM has become the new standard in high-performance subwoofers. As a world leader in speaker design, PARADIGM knows what it takes to make great sounding speakers — from best-value budget audiophile speakers right through to sensational PARADIGM® Reference high-end systems. PARADIGM has applied this comprehensive expertise to design and build the finest subwoofers available, at any price! And when it comes to price, PARADIGM’s value is unmatched. In fact, PARADIGM has been rated #1 in price/value for 7 consecutive years in surveys conducted by the distinguished trade publication Inside Track.

Sophisticated bass driver technology utilizes AVS® diecast heatsink chassis’ for higher power-handling and much lower distortion. Patented high-current, high-output amplifiers ensure full power-delivery at all times. Add solid braced enclosures and full control features and you have the pure, clean, articulate and thunderous deep bass of PARADIGM’s sensational powered subwoofers.

We invite you to visit your nearest AUTHORIZED PARADIGM DEALER and experience these remarkable subwoofers today. The difference is... simply better sound!
Technics SL-MC410
111-Disc CD Changer

KEN C. POHLMANN, HAMMER LABORATORIES

Many, many years ago, shortly after dinosaurs walked the earth, but before Bill Gates owned it, people listened to music that was stored on discs of black, warped plastic. Because of the system's inherent frailties, audiophiles made incredible sacrifices to coax listenable sound from LPs. For starters, changers were verboten. Purists (including me) would listen only to single-play turntables because dropping one disc on top of another could damage them and because the changer mechanism was intertwined with the motor that rotated discs, inevitably degrading playback performance.

Old habits are hard to break, and some people feel that single-play CD players are inherently superior to multiple-disc CD changers. In fact, the changer mechanism has no bearing on how a CD is played. It is relatively easy to build a mechanism that simply loads the appropriate disc onto the disc transport and then has no further effect (old-time record jukeboxes did this, in fact). Of course, there are good and not so good CD transports and, more important, good and terrible digital-to-analog (D/A) converters, but there is no reason a CD changer can't sound as good as a single-play model — or better.

The Technics SL-MC410 is a good example of a contemporary jukebox. Instead of a loading drawer, the player's entire front panel can be manually swung open on bottom hinges to reveal a horizontal tray with slots. Up to 111 discs can be loaded vertically. The vertically mounted disc transport runs across the back of the tray, picking off discs for playback and returning them when they're finished. To expedite loading and unloading, you can slide a plastic carriage to any disc slot from 1 to 110 and use it to flip a disc into or out of the tray. Slot No. 0 is designated as a single-play slot and has a separate play button. When the panel is back in its "locked and upright position," you can dimly see the discs through two large windows. Conveniently, you can open the front and swap discs without interrupting playback.

Although the SL-MC410's control panel looks somewhat formidable, the changer's operation is straightforward. Besides the usual power, stop, pause, and play buttons, there are Skip/Cursor and Search/Character buttons, which serve double-duty for disc-navigation and text-entry functions, and other buttons that are used to select discs or groups of discs. In fact, the changer offers several ways to play discs. Hit the play button, and it will play all of the loaded discs in sequence, starting with Disc 1. A pair of disc-skip buttons, labeled - and +, can be used to move from one disc to another. Alternatively, a row of ten numeric buttons can be used to select a specific disc. The same numeric buttons, along with a button, can be used to access specific tracks.

To help navigate the changer's disc collection, the front panel offers a Group Enter button and five Disc Grouping Play buttons labeled A to E. When a disc is loaded, you can assign it to one or more groups. Furthermore, you can assign one of fourteen preset names, such as Ballads, Classic, Hip Hop, or Rock, to each disc group regardless of the discs' physical position.
"THE FINEST IN-WALL SPEAKERS IN THE WORLD!"

Audio/Video International
Grand Prix Product of the Year

Sound&Vision Critics' Choice Award

Consumers Digest Best Buy Award

All in-wall speakers are not created equal! Although they may look similar, most often beauty is only skin deep. Paradigm's extraordinary AMS in-walls, on the other hand, are designed from the inside out to provide stunning state-of-the-art performance that sets the standard for high-end in-wall sound!

What does it take to build the world's finest in-wall speakers? Nothing short of better design execution and better materials. Paradigm's advanced AMS in-walls use an aluminum diecasting that combines the main chassis, mid/bass driver chassis and tweeter faceplate into a single ultra-rigid unit. And, to ensure a solid high strength installation, we use an ultra-rigid diecast aluminum mounting bracket.

Add Paradigm's world renowned driver technology and seamless dividing networks, and the result is dramatically superior in-wall sound for both music and home theater.

We invite you to visit your nearest AUTHORIZED PARADIGM DEALER and experience these sensational in-wall marvels today. The difference is...simply better sound!
in the jukebox. Once discs are grouped by music category, you can step through a group to see which disc numbers it contains or simply hit the Disc Grouping Play button to initiate playback of the discs in that group.

As with most CD changers, the SL-MC410 lets you program a sequence of up to thirty-two tracks or discs (each disc counts as one entry). The Direct Programming button lets you add a currently playing track to the end of your programmed sequence.

One of the drawbacks of changers is the problem of remembering which disc is which. Technics provides three solutions. For starters, you get a plastic binder for storing the liner notes, and the back of the owner’s manual has a disc-index table. Then there’s CD-Text, which offers a decidedly higher-tech approach to keeping track of CDs.

CD-Text discs, which began trickling into the market about a year ago, contain alphanumeric information in their table of contents. When these discs are played, information scrolls across a CD-Text-capable player’s display. You can use the Text Mode button to call up a disc’s album title, artist, the title of the track currently playing, and timing information. A text-search feature also lets you search for discs by album title, artist name, or song title. When you find the disc you’re looking for, simply hit play.

Unfortunately, although they are increasingly common, CD-Text discs will be a small minority in most CD collections. Therefore, the SL-MC410 also allows you to create two text messages (album title and artist name) for each regular CD using the Search/Character and Skip/Cursor buttons. Each message can be up to thirty-two characters long. Any text information you key in for a particular disc is associated with the slot that disc occupies; if you move the disc to another slot, the message is automatically deleted. In addition to disc messages, the display provides helpful diagnostic messages.

The supplied remote control duplicates many of the front-panel features and adds a few twists of its own. When you press the ID Scan button, the changer searches from the beginning of the current track for a loud section and then plays 10 seconds centering around that point. This is useful both for identifying a song and for setting recording levels when you’re making an analog copy of a disc. The remote also adds recall and clear buttons, to check or modify the contents of a programmed sequence, and a random-play button for tracks from one or all stored discs. Finally, the remote adds a repeat button that lets you replay a track, a disc, a programmed sequence, or a new random selection.

Given its $260 price tag, the SL-MC410 performed pretty well on the test bench, with only very minor anomalies. Its normal-mode frequency response was outstandingly flat, but its de-emphasis-mode response was curiously lumpy, though never to the extent that it was particularly audible. And while the excess-noise results are average for a lower-cost CD player, they didn’t reveal the very low-level (all inaudible) spurious tones the player generated on a spectrum plot of background noise. Perhaps these tones are related to its larger than normal linearity error.

The ability to browse among 111 discs is a real treat. If you stockpile enough food and drink, and the remote’s batteries hold out, you can listen nonstop for a week without budging from your chair. And if you want to DJ a friend’s party, this changer makes a great carrying case. Either way, the Technics SL-MC410 proves the merit of low-cost CD jukeboxes.

---

**MEASUREMENTS**

Tests performed by David Ranada; all but defect tracking, impact resistance, and disc-change time used Stereo Review’s CD-player test disc.

**MAXIMUM OUTPUT**

2 volts

**FREQUENCY RESPONSE**

(20 Hz to 20 kHz)

normal: +0.04, -0.05 dB
de-emphasis on: +0.36, -0.19 dB

**NOISE LEVEL (A-weighted)**

normal: -93.7 dB
de-emphasis on: -93.9 dB

**EXCESS NOISE (without/with signal)**

16-bit: +1.25/1.95 dB
 quasi-20-bit: +16.71/17.01 dB

**DISSORTION**

THD+N, 1 kHz

at 0 dBFS: 0.005%
at -20 dBFS: 0.043%

**LINEARITY**

(at -90 dBFS)*

-3 dB

**DEFECT TRACKING**

(Pierre Verany test disc)... 1.250 μm

**IMPACT RESISTANCE**

... top, A; sides, A

**DISC-CHANGE TIME**

worst case (Disc 1 to Disc 111)... 11 sec

*dBFS = decibels re digital full-scale
“a true world-class surround speaker”

“one of the most versatile products in the history of home theater”

AudioVideo Shopper

Winner of an Audio Video Interiors Excellence In Design award, the revolutionary SS-150™ Tripole is the ideal surround channel speaker for any system. Designed for 5.1 multichannel Dolby Digital and DTS, this THX surround speaker is also superb for Pro-Logic and surround music modes. Dozens of pro studios use it to mix multichannel sound.

Its groundbreaking Tripole mode combines the diffused, spacious sound of dipole speakers with the immediacy and imaging of the best direct radiators—for an unprecedented consistency of sound in the surround channels. It delivers good imaging and spatiality to every listener, regardless of room location.

How does it work? It operates as two separate speakers: one a point source direct radiator with a 5 1/4” woofer and 1” tweeter, and the other a dipole with two 3 1/4” poly mid-tweeters. It has two main user-selectable modes: THX dipole or Tripole, plus six custom modes to suit

M&K Tripole™

Visit your nearest M&K dealer to hear the ultimate surround speaker. Find out why M&K is consistently rated number one in head-to-head competition and is rapidly becoming the standard for professional multichannel sound recording.

Contact us by telephone, mail, the web, or our toll-free faxback for more information and the location of the nearest authorized M&K dealer.
We have reviewed a few such systems, and about the only significant negative aspect we have found has been their relatively high prices, which have probably restricted the format’s more widespread use. Fortunately, marketplace competition has followed its usual course, and one of the more striking results is the new Lynnfield VR960 speaker from Boston Acoustics, priced at only $1,000 a pair.

The VR960 is a tall, slender column that’s only 6½ inches wide. At the top of the enclosure is a 4½-inch midrange cone driver, operating in a sealed volume, that crosses over at 3 kHz to a 1-inch aluminum-dome tweeter.

In the middle of the cabinet is the bass section, with an 8-inch driver and its 75-watt amplifier in a sealed subenclosure. The driver radiates to the side of the cabinet, about 22 inches above the floor. The speakers are sold in pairs, with the subwoofers mounted on opposite sides of their cabinets. While there may be slight differences in the low-frequency performance depending on which way the subwoofers face (toward or away from each other), this is not a critical consideration. Experiment if you wish! Each speaker weighs only 50 pounds, making it relatively easy to move around.

One advantage of the side-firing subwoofer is the speaker’s remarkably narrow front profile. This not only makes it fairly inconspicuous when viewed from the front but enhances the horizontal dispersion of its sound. Since the narrow cabinet might otherwise tend to be easily tipped over, small outriggers attached to the base minimize that risk.

The VR960 is covered by a charcoal-gray cloth-mesh “sock” and has a wooden top panel with a decorative glossy-black finish. The subwoofer’s amplifier is built into the bottom rear of the cabinet with its heat sink facing down. The only other visible external feature is a small plate at the very bottom of the cabinet’s rear panel, which has a pair of five-way binding-post terminals that accept wires, lugs, or single or dual banana plugs, a knob for varying the subwoofer level, and a single RCA jack labeled LFE, for low-frequency effects.

The LFE jack is intended for use in a 5.1-channel Dolby Digital home-theater system, where the “.1” or LFE channel delivers special low-frequency program content (under 100 Hz) from Dolby Digital-encoded soundtracks.

The speaker’s Active Bass Contour control differs in some important re-
The new Sunfire True Subwoofer by Bob Carver has received reviews that are redefining the subwoofer industry.

**There has never been a subwoofer like it!**

There will never be a subwoofer like it!*

It's a small eleven inch square bass cube, and it shakes the walls and rattles the rafters. It has its own built-in two thousand, seven hundred watt amp!

Trust Bob.

**It Rocks!**

*Strictly speaking: for 20 years or until patent expires.

See Bob Rock.

http://www.sunfirelabs.com
We normally request that equipment manufacturers supply relevant test data for the review sample, as a check on possible shipping damage and (in the case of speakers) the inevitable differences in test environment and procedures. In speaker measurements, it is a rare event when our test results closely resemble the manufacturer’s data, although the differences are rarely serious and are usually easily explained by the differences in test conditions.

The Boston Acoustics VR960 was a striking exception to this rule. The averaged room response of the two speakers was by far the flattest over the major part of the audio range that we have ever measured, within ±2 dB from 300 Hz to 20 kHz. In fact, the same response variation extended down to 20 Hz, but that was almost certainly an effect of the room characteristics. Our quasi-anechoic MLS response measurement (valid only above 300 Hz), though typically ragged, also confirmed the VR960’s smooth response, varying only ±3 dB from 300 Hz to 20 kHz.

We measured the subwoofer’s fre-

**LYNNFIELD VR HOME THEATER SPEAKER SYSTEM**

Adding center and surround speakers to a pair of Lynnfield VR960s will produce a full-fledged home-theater speaker system. The additional speakers supplied to us were a VR10 center ($300) and a pair of VRS surrounds ($350) for a total system price of $1,650.

The VR10 center speaker is unusually complex for its size (17 x 6 1/2 x 6 1/2 inches). It contains a 5 1/4-inch cone woofer as well as a 5 1/4-inch passive radiator flanking a vertically stacked 3 1/2-inch cone midrange driver and a 1-inch dome tweeter. The stacking of the midrange driver and tweeter is responsible for the lack of horizontal off-axis “lobing” in the VR10’s response: in other words, its sound quality doesn’t change much from one side of the listening area to the other. The crossover frequency between the woofer and the midrange driver takes place at 500 Hz and that between the midrange and tweeter at 3.5 kHz. Rated impedance is 8 ohms.

Both the drivers and the crossover frequencies of the VR10 are very different from those used in the VR960, and several laws of physics would have to be repealed to obtain a really close match of their sound qualities. In our tests, panned pink noise did become notably more colored as it passed through the VR10, but this effect was far less evident with surround-encoded music programs and movie soundtracks.

Each VRS surround is a two-way dipole speaker containing a single 4 1/2-inch cone woofer crossing over at 350 Hz to a pair of 2 1/4-inch tweeters. The enclosure measures 10 1/4 x 4 1/2 x 6 inches and weighs 6 pounds. Black or white finishes are available, but the metal grilles are removable for painting. You might want to take them off in any case since in our tests the grilles produced several nasty mechanical resonances between 300 and 500 Hz.

Impedance of the VRS speaker is given as 8 ohms. Its rated sensitivity is 85 dB SPL with a 1-watt input, 5 dB lower than that of the VR960 and VR10 speakers. To produce the same sound levels, a VRS will have to be driven by more than three times as much input power.

Even though the VR960’s woofer is touted as a “built-in subwoofer,” it is in the same box as the other drivers, which makes the system a full-range speaker with all the traditional full-range placement problems. For example, with full-range speakers you usually cannot optimize bass performance and imaging simultaneously. Using the VR960’s LFE inputs changes nothing, because the problem stems from having the subwoofers built in and not separately movable. (By the way, use a 100-Hz crossover frequency to drive the LFE inputs. That works better with the bass performance of the VR10 center and VRS surrounds than, say, an 80-Hz crossover, which is too low.)

You might have to perform a series of experiments to optimize the placement of the VR960s. In our room, I was never able to eliminate a deep (10-dB) midbass (150-Hz) dip at our usual listening position without the use of a graphic equalizer. The dip gave the VR960s a slightly “forward” sound quality. With the dip equalized out, they produced an impressively neutral-sounding balance between highs and lows.

Deep-bass performance was very good, with the speakers producing usable output to below 30 Hz (we used the finale of Christopher Rouse’s Symphony No. 2 on Telarc to exercise the system’s lows). To get the best midbass performance, instead of using an equalizer you might want to try pushing the speakers’ backs up against the wall. But that would diminish their unusually good stereo imaging and outstanding sense of depth, as revealed by the superspectacular two-microphone recording of Richard Danielpour’s Concerto for Orchestra on Sony Classical.

In multichannel use the full system was impressive. The DVD of the movie Das Boot was especially thrilling, with the storm sequence far more sonically effective than the music or the depth-charge explosions, which had limited dynamic range. Then again, a lifelike dynamic range for a depth-charge explosion would blow out the walls of your listening room. Not even the VR960s fed through their LFE inputs could do that!

— David Ranada
quency response using close microphone spacing and with its level control set at the midpoint, which we found to be optimum for our room with most program material. The response was within ±2.5 dB from 30 to 120 Hz, which is quite impressive for a single driver whose effective cone diameter is only about 7 inches.

The VR960 is magnetically shielded to allow placement next to a TV set. We measured its external flux level at a typical (negligible) level of less than 0.2 gauss over most of the cabinet surface, and less than 0.5 gauss at 6 inches from the drivers. The system sensitivity, measured at the standard distance of 1 meter with an input of 1 watt, was right on spec at 90 dB.

Although the nominal system impedance is rated at 8 ohms, we measured minimum readings of just under 5 ohms at 300 Hz and 4.5 kHz. The maximum impedance readings were 27 ohms at 20 Hz, 23 ohms at 130 Hz, and 18 ohms at 1.1 kHz. In view of the system's high sensitivity, its low minimum impedance should not pose any problems in operation with any properly functioning amplifier.

Impressive as were the measurements of the Lynnfield VR960 system, they were also completely consistent with what we heard from the speakers with a variety of program material. It is relatively easy to convince oneself that a speaker's sound is very good even if its measurements are characteristically uneven (which can be a reasonable and valid conclusion in view of the unavoidable and uncertain interactions between the speaker and the room environment). However, it is not so easy to convince a dispassionate microphone of an acoustic property unless it actually exists, and judging from our printouts, the Audio Precision test system was just as impressed as we were!

For us, the final proof of performance for the VR960, as for any speaker with claims to deep-bass response, was the way it reproduced John Rutter's Requiem (Reference RR-57CD). This system handled the powerful low bass of that recording in a natural and believable fashion, something we have previously experienced only from much larger and costlier speakers or separate subwoofers. The Boston Acoustics Lynnfield VR960 is a relatively compact, attractive, and affordable loudspeaker that can do justice to the most demanding program material — a rare combination of qualities.

“WOW, I can’t believe you have that CD!”

1-800-EVERY-CD is a wholesale music club. Members receive a 950 page catalog offering virtually every CD in print. All CD's are offered at wholesale, which is guaranteed to be the lowest price you can find. We do not send unsolicited CD's, and there is no minimum required to order. Call today or search our catalog now online at http://www.everycd.com. Whatever CD you last bought, chances are we'll have it, too, for less. We'll also have the items you've been wanting to buy but couldn't find.

Good music selection is hard to find. We're not.

800 EVERY CD
www.everycd.com
music for the serious collector™
Outside the U.S., please call (203) 972-1152 or fax (203) 972-1129

Virtual Reality
In Home Entertainment
It's a jungle out there in home-theater land!
Let Phase Technology be your guide to movies, music and more with critically acclaimed home theater, audiophile and in-wall speaker systems.
Now presenting our latest crowning achievement- the user-adjustable Model PC-3 multi-purpose speaker. It's idea for front, rear and center use in any multi-channel system.

Your hunt is over. Audition the Model PC-3 and experience sound so real, you can almost see it.

1-888-PHASE TK
www.phasetech.com
Hiss has been an affliction of the analog tape cassette since its invention. Various analog noise-reduction (NR) systems, such as dbx and several flavors of Dolby, have alleviated the problem, but none has conquered the disease. The new digital noise-reduction system used in the Pioneer Elite CT-07D cassette deck, while not a complete cure, does send tape hiss into a state of virtually total remission. And, best of all, it works both on tapes you make on the CT-07D and on tapes made elsewhere.

The CT-07D is really two autoreverse cassette decks in a single case. Each is a two-head, bidirectional machine with a belt drive. The head assemblies invert for reverse play (Side 2) and for recording. When you’re dubbing, either deck can be the master and the other one the slave, with digital noise reduction being applied to the tape copy. Dubs can be made at normal or double speed, and a separate tape-duplication noise-suppression feature can be used to silence hiss between selections.

If desired, two parallel recordings of the same input can be made simultaneously. A REV(erse) mode pushbutton permits continuous (“relay”) playback from both Deck 1 and Deck 2 in turn, autoreverse playback of both sides of a tape, and up to sixteen unattended repetitions of the same tape. A blank-sensing feature lets you skip selections already recorded by pressing the fast-forward or reverse buttons an appropriate number of times during playback.

The microphone and headphone jacks have their own level controls, though the overall audio output level and channel balance are not adjustable. A direct digital input, surely an innovation on an analog recorder, bypasses the deck’s 20-bit digital-to-analog (D/A) converter. It employs the standard 44.1-kHz sampling rate.

Both decks have switch-selected automatic optimizing circuits for bias, record level, and record equalization. Both offer Dolby B and Dolby C noise reduction in addition to their digital NR circuits. Both also incorporate Dolby HX Pro headroom-extension circuitry to insure optimum high-frequency performance with high-level signals.

The two separate four-digit tape counters can be switched between elapsed time and tape-hub revolutions. By pressing the counter switches for both decks simultaneously, the digital NR system can be toggled on or off.

The peak-reading vacuum-fluorescent level display shows seven discrete steps between -20 and +3 dB. There is no lighting in either cassette well, however, so it is nearly impossible to read the labels or to see how much tape remains on a side.

A digital Automatic Level Control and Analysis button bypasses the manual record-level control and lets the deck determine the optimum overall recording level from your own short test recording. This feature cannot be used during tape copying, however.

You can restore missing high frequencies to older tapes by pressing the FLEX (Frequency Level Expander) button. This applies a digitally determined treble boost of up to 10 dB to the frequency range from 1 to 10 kHz. If the deck senses a sufficient high-end level in the original tape, the boost is canceled.

We checked the playback frequency response of the CT-07D with our calibrated IEC ferric and (chrome) test cassettes (made by BASF). Response was quite smooth over the range from 31.5 Hz to 18 kHz, being down by about 2 to 3 dB at the ends of the spectrum with chrome tape.

For overall record-playback response we used recent samples of TDK AD
The Revolutionary NEW Omnipolar OM-6 from Mirage

The Sound of the 21st Century

Mirage ushers in the new millennium with a breakthrough in sound technology so radical it will revolutionize the way the world thinks about loudspeakers. Omnipolar® goes beyond bipolar to create a truly spherical 360° sound radiation pattern with no wrap-around distortion.

The new OM-6 delivers perfect imaging through its uniquely profiled cabinet design, the famous Mirage PTH™ tweeters, extraordinary new mid-range drivers and twin built-in 150 watt powered subwoofers. The result is outstanding spaciousness, sonic accuracy and unparalleled realism.

The New Shape of Sound. OMNIPOLAR. Only from Mirage!

MIRAGE PRODUCTS INTERNATIONAL CORPORATION
3641 McNicoll Avenue, Scarborough
Ontario, Canada M1X 1G5
Telephone (416) 311-1600 Fax (416) 311-1540

FOR AN EXPERT DEMONSTRATION OR MORE INFORMATION ON DJI HOME THEATER SYSTEMS, VISIT THE AUTHORIZED MIRAGE DEALER IN YOUR AREA.
We measured signal-to-noise ratio (S/N) on an unweighted, A-weighted, and CCIR-weighted basis both with and without the digital noise-reduction system. The effect of the CT-07D's digital NR was extraordinary, enabling the deck to achieve its rated 90-dB S/N with ferric tape and Dolby B or C and with chrome tape with Dolby C.

Wow-and-flutter figures were acceptable but not outstanding. Worst-case Dolby tracking error was only 1 dB with metal tape but reached 4 dB with chrome-equivalent and 2.5 dB with ferric, but these are not unusual values. Sensitivity was normal, but the high-speed winding times were slow.

Having fought with the problem of tape hiss for four decades of "This technique will finally cure it" claims, I've become somewhat skeptical. Yet it's hard not to be amazed at Pioneer's success with the CT-07D. Old Dolby B prerecorded cassettes sounded fifteen years younger, and the clearly audible master-tape hiss in the quiet intro section of the Jazz at the Pawnshop CD (Proprius) disappeared entirely in a tape copy. Though physics declares it impossible, I even made a dub of an old tape that seemed quieter than the original!

Though you can't make a direct A/B comparison between the source and the recorded playback on a two-head deck like this one, with careful rewinding you can come close. In this close inspection, some wow-and-flutter was detectable in a steel-guitar passage, and generally I detected a slightly "edgier" or "harsher" tonal quality on the dubbed versions. This did not seem to be a product of the digital noise reduction but rather of interactions between the digital system and the regular Dolby circuits. I hasten to add that the effect was very subtle and audible only under critical listening conditions.

With older recordings having normally audible tape hiss, the Pioneer NR system could at times be heard to misbehave. When a tenor sang a word with a heavy "s" sound, the tape hiss was sometimes insufficiently masked. It would come in and out, somewhat like the "pumping" sometimes heard with dbx NR systems. The Pioneer system cuts out whole bands of frequencies where it does not detect any musical tones, and these are reproduced entirely without hiss. But where music and substantial background hiss occur at the same instant, the hiss is detectable.

This is not to belittle Pioneer's really stunning accomplishment. If you're in the market for a cassette deck, the CT-07D is a "must hear" product. After hearing it, you may not want to buy anything else.
"For the bucks, you simply can't do better." "...if you want a system that delivers the absolute best home-theater and music performance for less than $1,000, you owe it to yourself to hunt down the Energy Take5 system at your local specialty audio dealer."

Corey Greenberg,
Stereo Review, September 1997

You've never heard sound this big from a home theater surround system so small. It's the "Take5™" home theater system. Designed to be fashionable, and engineered to deliver sound quality unheard of in speakers twice their size.

The basics are five high performance shielded speakers; a "Take1" center channel, and four "Take2" satellites. Add an "Energy®" ES Series powered subwoofer, and treat yourself to the ultimate in full range surround performance. The "Take5" system is compact and fully integrated, with a sound so big, your eyes won't believe your ears.

"Five high tech speakers for $500? Believe it! Their remarkable value for this price class makes the Take5 an AVS No-Brainer."

Anthony Chiarella
Audio Video Shopper,
May 1997
DCM KX-7 Series Two Speaker

JULIAN HIRSCH, HIRSCH-HOUCK LABORATORIES

The DCM loudspeaker line offers a broad range of models in a variety of designs, featuring both sealed and vented enclosures in several variations (including acoustic suspension) as well as transmission-line speakers and powered subwoofers. There are approximately thirty DCM models, most of them priced in the low to moderate range (between $100 and $400 per speaker). A distinguishing characteristic of DCM speakers is their relatively high efficiency, with sensitivity ratings typically well over 90 dB.

The KX-7 Series Two is a recent addition to the DCM line. It is a compact two-way speaker suitable for stand mounting; its bass vent opens at the rear, making wall mounting impractical. The nominally 8-inch woofer (the active cone is only 5½ inches in diameter) is approximately centered on the front panel. The operating design is described as a “modified transmission line,” with the specific features left unstated. Presumably there is some internal baffling that extends the path length of the lower frequencies on their way to the vent, which augments the direct bass output of the woofer cone. The vent itself is a cylindrical duct, 3 inches in diameter. Above the opening are the input terminals, binding posts that accept wires, lugs, or single or dual banana plugs.

The higher frequencies are delivered by a small (¾-inch) horn-loaded tweeter located just above the woofer. The horn’s mouth dimensions are approximately 3½ x 2 inches. The crossover frequency between the woofer and tweeter, which is not specified, appears to be in the range of 2 to 3 kHz.

The DCM KX-7 Series Two’s front panel is covered over most of its area by a removable black cloth grille on a wooden frame. A plastic label on the panel identifies some of the speaker’s special features, including 125 watts maximum power handling, magnetically shielded drivers, and built-in overload protection (its specific nature is not described). The speaker’s magnetic shielding permits it to be used adjacent to a TV set without picture degradation. Our gaussmeter confirmed this, indicating a negligible flux level (less than 0.5 gauss) at any point on the exterior of the cabinet.

Like other DCM speakers, the KX 7 Series Two is very efficient. We measured its sensitivity as 95 dB sound-pressure level (SPL) at 1 meter, the same as its rating. Such high insensitivity means that the driving amplifier is required to deliver only a few watts to the speaker to generate a volume level high enough to discourage conversation. Of course, it can be driven to far greater levels, if desired, without serious distortion or damage.

The KX-7 Series Two has a rated nominal impedance of 8 ohms. We measured considerably lower values at most frequencies, with readings as low as 3.5 ohms at 20 Hz and 250 Hz, and reaching or exceeding 8 ohms only in the vicinity of 100 Hz and 2 kHz. In practical terms, however, this apparent discrepancy is unlikely to cause any problems because of the speaker’s high sensitivity.

With the speakers on 26-inch stands at the front of the room and about 8 feet apart, we measured the room response of the KX-7 Series Two from a microphone position 12 feet in front of the left speaker. The average of the response curves from the left and right speakers (the “room response”) was within +3, -5 dB from 40 Hz to 10 kHz, sloping off at about 6 dB per octave above 10 kHz, which is fairly typical behavior for this measurement.
tweeter's dispersion measured -5 dB at ±45 degrees off the forward axis above 4 kHz, with little further change up to 15 kHz.

The quasi-anechoic MLS response measurement, made with the Audio Precision System One, produced essentially similar response curves at distances of 1, 2, and 3 meters. The smoothed response variation was ±2 dB from 300 Hz to 10 kHz. This measurement produces larger cyclic variations at the highest octaves, but the averaged readings were consistent with the lower-frequency values.

We measured the speaker's woofer response in its lower region by placing separate microphones at the cone and vent. Combining the two outputs, in proportion to the respective areas of their sources, produced the effective frequency response of the woofer/vent system. The bass response was flat within ±1 dB from 40 to 100 Hz, with rolloffs of 6 dB per octave from 90 to 280 Hz and approximately 16 dB per octave from 40 to 20 Hz. The bass output was clean and usable down to the vicinity of 35 Hz, a very creditable performance for a speaker in this size and price class.

These measurements suggest that the DCM KX-7 Series Two is an excellent value at its price. However, as always, the proof of a speaker's worth can be obtained only by listening. The essential sound character of this one was smooth and balanced, with no obvious emphasis or lack of any specific part of the frequency range. But the same can also apply to a number of similarly priced speakers.

In view of this speaker's low price and modest driver complement, we were especially interested in its low-bass performance. The rated bass limit of the KX-7 Model Two is given as 45 Hz, which is quite adequate for most listening. As it turned out, however, its subjective bass limit proved to be at least 10 Hz lower. Listening to swept signals from test records, at a reason-
Parasound HCA-1205A
Five-Channel Power Amp

DANIEL KUMIN, START LABORATORIES

If you’re looking for a multichannel power amplifier that will add some real depth to your system, try Parasound’s new $1,650 HCA-1205A. Measuring nearly 21 inches from its front panel to the rack handles on its backside, the five-channel amp is about as deep as they come — and at 70 pounds it’s a heavy player, too.

But seriously, folks, this talk of dimensionality just might be relevant. More than one audio pundit has suggested — only half in jest — evaluating power amps on a pounds-per-dollar basis, on the theory that size and weight arise from power-supply heft, which translates pretty reliably into electrical current capability. Which, in turn, may determine whether the amp will be able to handle transients with grace. And the more channels on board, the more power-supply meat and potatoes you need to feed all those output stages.

So it’s not surprising that the five-channel HCA-1205A wears an athletic-cut suit. It’s rated to deliver 140 watts continuously into each of five 8-ohm loads, or 200 watts into a quintet of 4-ohm loads — all at less than 0.03 percent distortion. Designed by John Curl, one of the forefathers of low transient-intermodulation distortion (TIM) audio design, the HCA-1205A is a very wide-band design. Parasound specifies its frequency response at 5 Hz to 100 kHz +0.3 dB at 1 watt.

The amp incorporates some classic “high-end” circuit elements, including Class A J-FET input stages, hand-matched output-transistor pairs, and DC-coupled topology with a protective anti-meltdown low-end rolloff way down at 0.8 Hz. Each channel is served by six 50-MHz output transistors in complementary pairs, and the amp is described as running in a “high-bias” Class A/AB mode, meaning that it spends a higher percentage of its time in full-swing, Class A operation. As expected, this causes the Parasound to idle a bit on the warm side. The HCA-1205A is also THX-certified by Lucasfilm, which means it meets some fairly stringent parameters for current output into low-impedance and reactive loads, noise/hum rejection, distortion, and input sensitivities, among other things.

Construction is on a familiar Parasound pattern. The rack-mount front panel is unadorned save for a big power-switch rocker and eight tiny LEDs — current-overload indicators for each channel and three AC-power status lights (line, standby, and normal). The amp is fully enclosed by a wraparound top/side cover, a nice feature that eliminates the skinned knuckles that exposed heat sinks tend to produce. On the rear panel, each channel gets a gold-plated RCA-jack input, a heavy-duty multi-way binding-post output, and a nice big input-level trim knob.

The only remaining rear-panel features are the rack-mount handles mentioned earlier, which are very useful when it comes time to lift the amp, an IEC power-cord socket (Parasound supplies a three-prong AC cord it describes as “custom-designed audiophile grade,” whatever that means), a 15-ampere (!) fuse holder, and a terminal strip to hook up a 12-volt DC turn-on trigger; Parasound’s preamps, among others, supply this activating voltage.

Inside, the HCA-1205A is tidily assembled. Heavy-gauge, hand-installed wire connects each channel’s sub-assembly to the output terminals, and “audiophile-type” cabling carries input signals to each output module. The five circuit-board/heat-sink channel assemblies are arranged asymmetrically, with three surrounding the single massive toroidal power transformer and the remaining two back to back on the right side. Each channel is bolted to the floor pan, which is louvered for cooling (there is no fan) through the heavily slotted top and sides. Mechanically, the amp is quite solid, with a heavy-gauge,
"All Definitive's New Bipolar Towers Deliver Astounding Sound for Music & Movie Perfection"

The extraordinary new BP30, 10B, 8B and 6B (from $299) now have BP2000 Series technology for dramatically superior sonic performance!

"Truly Outstanding" — Stereo Review

Absolute sonic superiority and unexcelled value have made Definitive the leader in high-performance loudspeakers. We are now pleased to introduce a new series of incredible-sounding bipolar towers which incorporate drivers, pure aluminum dome tweeters, crossovers and cabinet technology developed for our flagship BP2000 Series.

These exquisitely styled, American-made, bipolar (front and rear radiating) systems totally envelop you in a symphony of sonic perfection. They combine lush, spacious sound-staging, lifelike depth-of-field, razor-sharp resolution, pinpoint 3-D imaging, powerful subwoofer-quality bass (to below 20 Hz), high efficiency and ultra-wide dynamic range for unsurpassed reproduction of music and movies in your home.

"Music and Movie Sound was Stunning" — Video Magazine

Combine the BP6B, 8B, 10B or 30 with our matching centers, bipolar surrounds and optional PowerField subwoofers for the most lifelike, spectacular "you are there" music and home theater available. All are completely Dolby Digital AC-3 ready.

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

You owe it to yourself to hear these remarkable speakers today.

Definitive Technology®
The Leader in High-Performance Loudspeakers
11105 Valley HS. Dr. • Baltimore, MD 21178 • (410) 363-7148
Visit us at http://www.definitivetech.com • Registered Trademark

See our dealer list on page 60
The HCA-1205A easily surpassed all of Parasound's specs except for frequency response, where I saw a -3-dB point of 83 kHz rather than 100 kHz — as if that matters to anyone. The amp's response was also very linear in the ultrasonic band, with low-power total harmonic distortion plus noise (THD+N) remaining well below 0.1 percent out to 100 kHz. Within the audio band, THD+N remained below 0.035 percent at any level below rated power. Noise was not a factor, remaining some 85 dB below 1 watt on Channel 1, the worst of the lot; the remaining channels were all 3 to 5 dB better still.

Power output was generous to a fault. The HCA-1205A clipped at around 200 watts on all channels into an 8-ohm load with one channel driven and at well over 300 watts with a 4-ohm load. With all of its five channels pumping simultaneously into 8-ohm loads, it still yielded more than 150 watts per channel after 10 seconds — even though my AC line voltage sagged to 80 volts (from 117 volts). Dynamic headroom with one channel driven (into 8 ohms) was good at 1.7 dB, but note that this essentially duplicates clipping headroom, since the amp exceeds its steady-state power spec so easily. When all five channels were driven into 8 ohms simultaneously, the HCA-1205A still had dynamic headroom of about 1 dB, a small but potentially useful reserve.

I used the Parasound HCA-1205A to power the usual five-speaker home-theater suite in my 16 x 20-foot studio: a pair of B&W Model 803 Series 2 speakers and a B&W HTM center speaker up front, two Citation 7.3 dipole/bipole surround speakers in the rear. I did all my critical listening with the 803s running full-range in order to stress the Parasound amp to the max.

The results leave me almost nothing to say except that the HCA-1205A performed admirably under all conditions, answering the call of everything I could throw at it. This included the two best multichannel recordings I know: the 5.1-channel Dolby Digital recording of the *1922 Overture* (Dallas Symphony and chorus) on Delos's *DSD Spectacular* (DV7001) and "String of Pearls" and other tracks from DMP's DTS-encoded, 5.1-channel *Glenn Miller Project* (MAS CD-802). These stunningly dynamic recordings sounded lively, quick, and preternaturally rich in ambience, with a level of effortless big, snappy transients that I simply do not hear from matrixed surround encoding or ambience-enhanced playback using digital signal processing — or from less capable amplifiers, for that matter. I fed the Parasound a steady diet of effects-heavy movie scenes as well, from Dolby Digital laserdiscs and DVDs to DTS laserdiscs, which sounded almost as good. And the 5.1-channel DTS-encoded CD version of the Allman Brothers Band's classic *Live at Fillmore East* (HDS 4410) rocked, three-dimensionally.

I was unable to induce any audible signs of clipping at any sane level, even while playing organ music in my surround sound front/rear stereo mode (all channels driven equally), the most test I know. Nor was I able to abrade any particular sonic character to the HCA-1205A — precisely what you want in an amplifier (or almost any other audio component, for that matter). In short, this is a one-box power block that is able-bodied enough to serve virtually any home theater. And where a powered sub is also part of the setup, you can delete the "virtually."
"If you want truly incredible speakers at an unbelievable price, run and get this system."

— Jeff Cherun, Home Theater Magazine

Definitive’s remarkable $799 ProCinema sub/sat system features:
- Absolute State-of-the-Art Performance for Music and Home Theater Perfection
- 125-Watt Powered 10" Subwoofer
- Cast-Basket Drivers and Aluminum Tweeters
- Optional Timbre-Matched Center and Rears
- Dolby AC-3 Ready
- In Black or White

Home Theater Magazine raves:
"Truly awesome...close to perfection...clearly sets a new standard for sub/sat systems"

See our dealer list on the facing page

Definitive Technology
*The Leader in High-Performance Loudspeakers*
11105 Valley Hts. Dr. • Baltimore, MD 21117 • (410) 363-7148
Visit us at http://www.definitivetech.com

Registered Trademark of Dolby Laboratories Licensing Corporation.
Although a small subwoofer can be a mighty satisfying part of your home theater, a larger, more expensive sub generally goes lower and plays louder. Why is that so important? Because recordings that actually have deep, loud bass will sound more realistic and have more impact. If you never watch action/adventure movies or listen to music with deep bass (such as organ music), you might find that a small sub is really all you need. On the other hand, if you want the thrill of being able to play anything with big bass just as the composer wrote it, the musicians played it, and the recording engineer laid it down, then a bigger subwoofer is probably what you’ll want.

Can you get adequate bass from large full-range stereo speakers? If you’re lucky, yes. However, speaker placement is critical for good bass performance — and the location that provides the best performance at frequencies above 100 Hz is not the same one that delivers the goods at subwoofer...
frequencies. A subwoofer can solve the dilemma of speaker positioning — whether to favor deep bass or the upper part of the spectrum — for both two- and five-channel playback systems.

The subwoofers tested here are priced between $700 and $1,000 and have drivers that measure 10, 12, or 15 inches. They have powerful amplifiers, variable electronic low-pass crossovers, and adjustable level and phase controls, and they automatically power up when they sense a signal input. They all have both line- and speaker-level inputs, and they include feed-through outputs with high-pass filtering for satellite speakers. Some also have bonus features such as special equalization settings, magnetic shielding, and crossover bypasses for use with receivers and surround processors that have their own subwoofer crossovers.

In a previous article last spring ("SuperCubes," April 1997), I compared six small subwoofers. Later, I explained the pros and cons of moving up in size ("How Big Is Big Enough?" in September 1997). Now it's time for an in-depth investigation of several current subwoofers larger than our initial sextet. These five subs are bigger and badder, cost more, and take up more floor space than those small subs, but in return they go lower and play louder.

REAL-WORLD PERFORMANCE TESTS

What performance aspects are important for subwoofers? Basically we want to know whether these subs go low enough and play loud enough to reproduce the bass in modern movie soundtracks and music recordings with realism and authority. I used the same basic test method as in the small-sub comparison, placing the subwoofers, one at a time, in the right rear corner of the room — the location that I've found delivers the best performance at my listening seat.

To start, I placed a microphone to measure sound-pressure level (SPL) and frequency response right in the listening seat, which just happens to be 2 meters from the subwoofer location. Thus, you can compare my SPL measurements with others made at the usual 1-meter distance by subtracting 6 dB from those numbers.

I used a maximum-length-sequences system analyzer (MLSSA) and an Audio Control 3650a sound-level meter for all the measurements. The frequency response was measured at 85 dB SPL using an MLS signal. Maximum SPL was measured using both actual program material and a sequence of tone bursts of increasing frequency. We set a 10-percent distortion limit for the tone-burst measurements, and distortion was measured using a separate microphone placed in the direct field of the subwoofer. The average maximum tone-burst SPL produced by each sub in the range from 25 to 62 Hz was noted, and that number — translated to a
smaller room so that the results can be compared directly to measurements given in previous articles — is given in the measurements section of the individual photo boxes.

Why did we set the maximum allowable distortion at 10 percent? When a driver is leaving its linear-exursion range or an amplifier is going into clipping, it will be producing about 10 percent distortion. Any further increase, and audible distortion rises explosively.

I also measured the maximum SPL attainable without obvious overload with real video and music programs. I used the explosion scene from Chapter 14 of the Clear and Present Danger laserdisc, "It's Live" from Bass Erotica's Bass Ecstasy (Neurodisc), the recreation of the Jurassic Park lawyer-eating scene, entitled "Jurassic Lunch," on The Great Fantasy and Adventure Album (Telarc), and the black-powder cannon blasts from Tchaikovsky's 1812 Overture (Telarc). These sources all have very low and very loud bass content. The maximum SPL measured during the Clear and Present Danger track and the average of the maximum SPLs measured for the three music tracks also appear in the measurement data.

Unlike most loudspeaker measurements, these represent real-world performance. They were taken in a real room at a realistic listening position and distance, and they predict what someone in a real room can expect to hear. By contrast, most speaker measurements are made under quasi-anechoic conditions precisely to remove the effects of the room in which the measurements are taken. At higher frequencies this is important, because the purpose of the measurements is to compare speakers and not the rooms they're in. But a speaker will never be used anecdotally, so such tests do not necessarily represent the actual sound any listener will hear.

At subwoofer frequencies, however, things are simpler with respect to in-room performance. Performance maps that I made of eight different rooms show that a corner location nearly always delivers the best possible (lowest, loudest, and smoothest) in-room performance. At low frequencies the bass reinforcement from the room is very helpful and needs to be included — as it is in our measurements — to give a true picture of a speaker's real-world performance.

One difference from our April 1997 report is that the new measurements were made in a room that is considerably larger. My old room was a 12 x 22-foot shoebox with a standard 8-foot ceiling. The new room has a 13 x 23-foot floor plan, but it also opens to a staircase and a foyer. It has three open doorways altogether and an 18-foot cathedral ceiling. It is a much larger space in every way.

You may have been told that a big room supports bass better than a small one. This is utter nonsense. My new room has less extension and a lower SPL at low frequencies than the smaller one. I measured the transfer functions of the same subwoofer in both rooms, and from this data I calculated the performance you can expect from each tested sub in both a medium-size room and a large one.

I also installed each subwoofer in a 7.1-channel playback system built around a Lexicon DC-1 processor and Paradigm powered loudspeakers. All of the subwoofers tested here were easily installed and balanced to the reference system. They're discussed below in ascending order of rated amplifier power.

**HOW THEY MEASURED UP**

**Velodyne VA1012-XII** Velodyne is best known for its line of servo-controlled, low-distortion subwoofers. However, the VA1012-XII is part of the company's lower-price series of subs using passive radiators instead of servomechanisms. A passive radiator, often called a vent substitute, is just a cone without a magnet or voice coil. It works just like a very large, long port, simulating a large air mass. In the case of the VA1012-XII, the passive radiator allows a bass-reflex box to be tuned in a way that might not be possible otherwise given the enclosure's dimensions.

The VA1012-XII has a 10-inch paper-cone woofer driven by an amplifier rated at 100 watts continuous or 250 watts peak. The 12-inch passive radiator faces downward on the bottom of the cabinet. The sub packs a full set of features into the relatively small enclosure. It's the smallest model tested here and, at 56 pounds, the lightest, too.

Operating features include a variable 40- to 120-Hz "dual staggered" low-pass crossover. Its slope begins at 12 dB per octave and ends at 24 dB per octave. Selectable 80- or 100-Hz high-pass filters with slopes of 6 dB per octave are available for both the line-level and speaker-level outputs. Other features include a phase switch, a crossover bypass option, a detachable line cord, input-overload protection, and a special gain-compression circuit that prevents overexcursion of the woofer.

The performance of the VA1012-XII was very good. Frequency response was flat — 29 to 80 Hz ±2.5 dB — in my large room; expect extension to 27 Hz in a smaller room. The crossover

<table>
<thead>
<tr>
<th>VELODYNE VA1012-XII</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGHLIGHTS</strong></td>
</tr>
<tr>
<td>- Woofer size: 10 inches</td>
</tr>
<tr>
<td>- Passive radiator: 12 inches</td>
</tr>
<tr>
<td>- Enclosure: bass-reflex</td>
</tr>
<tr>
<td>- I/O: line-level and speaker-level</td>
</tr>
<tr>
<td>- Variable low-pass crossover (40 to 120 Hz)</td>
</tr>
<tr>
<td>- Phase-reverse switch</td>
</tr>
<tr>
<td>- Auto-on</td>
</tr>
<tr>
<td>- Finish: black vinyl woodgrain with granite vinyl trim legs</td>
</tr>
<tr>
<td>- Magnetically shielded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>DIMENSIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Footprint 2 square feet</td>
</tr>
<tr>
<td>Gross volume 3/4 cubic feet</td>
</tr>
</tbody>
</table>

| **WEIGHT** | 56 pounds |

<table>
<thead>
<tr>
<th><strong>MANUFACTURER'S RATINGS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplifier power 100 watts continuous</td>
</tr>
<tr>
<td>Frequency response 29 to 120 Hz ±3 dB</td>
</tr>
</tbody>
</table>

| **WARRANTY** | 2 years |

| **PRICE** | $699 |

**MANUFACTURER**

Velodyne Acoustics, Dept. SR, 1070 Commercial St., Suite 101, San Jose, CA 95112; telephone, 408-436-7270

**MEASUREMENTS**

- Frequency response 29 to 80 Hz ±2.5 dB
- Low-end extension (at 10% distortion): 29 Hz
- Tone-burst sequence SPL (25 to 62 Hz, 10% distortion limit): 102 dB
- Maximum average music SPL (with no obvious distortion): 105 dB
- Maximum soundtrack SPL (Clear and Present Danger explosion): 107 dB
had a slope of 24 dB per octave at all settings, but the actual crossover points did not vary much even at full spin of the frequency control. At the spot marked 40 Hz, the actual crossover point was about 70 Hz, and at 120 Hz it was really about 105 Hz.

Because subwoofers must accommodate a wide range of input voltage from line to speaker level, they often have a fair degree of hum at higher volume-control settings. The Velodyne VA1012-XII, however, was dead quiet at all volume settings. Impressive.

As with all the subs tested here, 25 Hz is the lowest frequency you can expect to get from the Velodyne with healthy output in a real room. With the tone-burst test, it averaged 99 dB SPL from 25 to 62 Hz and 100 dB from 25 to 80 Hz with no more than 10 percent distortion. In a smaller room you can expect 102 and 103 dB, respectively.

With real program material and with the distortion limits removed, the Velodyne whacked out 107 dB SPL on the Clear and Present Danger explosion and averaged 105 dB on the music tracks. While these are not Olympian numbers, they should be quite adequate for most systems. The main limit of this subwoofer is its relatively restricted upper-range bandwidth. It may not be the best choice for use with ultra-tiny, limited-range satellites.

Energy ES-12XL The Energy ES-12XL is the most stylish of the subwoofers in this group. The enclosure is fabric-wrapped with a glossy black top. A recessed control panel is located on the rear of the cabinet. The recessed panel offers no particular functional advantage, but when it is combined with the subwoofer’s slick finish and striking dimensions, the Energy ES-12XL has a style quotient that surpasses any other sub I’ve met at any price.

This 70-pounder brims with features as well, including an 80-Hz high-pass crossover for both the line-level outputs (18 dB per octave) and the speaker-level outputs (6 dB per octave). The ES-12XL includes all the standard features except a crossover bypass, but it supplies a bass-equalization circuit and a rotary phase control. Specifications include a frequency response of 22 to 100 Hz +0, -3 dB and amplifier power of 150 watts continuous, 600 watts peak. The crossover is variable from 50 to 100 Hz at 18 dB per octave.

In operation, the ES-12XL’s response extended to 28 Hz in my large room. You can expect to get extension to 26 Hz in a smaller room. The crossover was unusually precise. Slopes started out at 12 dB per octave but sharpened to 24 dB as the frequency increased. The subwoofer had plenty of hum at high volume-control settings.

The bass-equalization circuit has a setting that is continuously variable from -3 to +3. At the -3 setting, response was trimmed by 1 dB between 30 and 50 Hz. At the +3 setting, response was boosted by 5 dB from 40 to 70 Hz and cut by 7 dB below 35 Hz. Energy suggests that the control reduces boominess at the bottom of its rotation and adds “oomph” for movies at the plus settings.

With a 10-percent distortion threshold, the sub kicked out an average of 98 dB SPL over the range from 25 to 62 Hz, and 99 dB when the range was expanded to 80 Hz; expect 101 dB or more in a smaller room. With program material, it pounded out an average 107 dB SPL on my music selections and 109 dB on the Clear and Present Danger explosion. Again, those aren’t new world records, but it was pretty darn loud and should be perfectly adequate for most applications.

B&W ASW2000 Now here is a real high-tech piece if I ever saw one. The rear panel of the B&W ASW2000 sports a pair of heat sinks and a large round cover for the toroidal transformer used in the power amplifier. It reminded me of an oil filter you’d see on a race car — really. The bass-reflex enclosure houses a 12-inch woofer and has a 4-inch port with a huge flared mouth on its bottom side, which is raised above the floor on feet.

Flaring the ends of a port reduces turbulence and noise and the tendency to grunt and blat at high output levels. The B&W’s port is flared at both ends, but the exit mouth has the most graceful flare I’ve seen, with both a functional taper and a stylish dimpled surface. It’s impressive and good-looking, even if it is hidden in normal use.

The amplifier is rated at 175 watts continuous, and the ASW2000 has all the trimmings except a crossover bypass and special bass-EQ settings. But don’t assume that the lack of a knob or switch implies that there is no equalization. Indeed, the hallmark of good powered speakers is clever and functional electronic equalization included as a design element. That’s one reason powered subwoofers offer so much performance for the money.

The crossover range is 40 to 140 Hz at 24 dB per octave. The 80-Hz high-pass filtering slopes off at 18 dB per octave for the line-level outputs, 6 dB per octave for the speaker-level outputs.

The ASW2000 was big in performance. The electronics were dead quiet and...
Output with a 10-percent distortion limit was 103 dB SPL from 25 to 62 Hz. In a smaller room the number would be 107 dB SPL. On program material the subwoofer played very large as well. Maximum SPL was 115 dB on the Bass Erotica disc, with an average 114 dB on music. The explosion on Clear and Present Danger delivered 114 dB at the key listening seat. That is Olympic-level output from a first-class performer.

**PSB Stratus SubSonic 3i**/ This PSB sub follows the high-tech path and sports a 15-inch driver and a 300-watt (700-watt peak) amplifier in a sealed box. Its switched-mode power supply is so efficient that no heat sinks are required. The back panel is as flat as the Energy sub’s except that the dual binding posts stick out slightly.

The enclosure footprint is square and the overall shape nearly cubical. The 64-pound cabinet, only slightly larger than the Velodyne sub’s, is completely wrapped with a black fabric sock and capped with a snap-on top available in roughcast or high-gloss black finishes. Unlike the other subs, the PSB has no removable grille, so the front-mounted driver is never visible.

A full set of input and output facilities is provided, but there is no crossover bypass. The variable (50- to 150-Hz) low-pass crossover uses fourth-order filters (24 dB per octave). There is an 80-Hz line-level high-pass filter with a slope of 12 dB per octave and a 100-Hz speaker-level high-pass filter. Frequency response is specified as 24 to 150 Hz ±3 dB, with a -10-dB point of 20 Hz.

The Stratus SubSonic 3i makes serious bass. I measured its frequency response 28 to 132 Hz ±3 dB. In a smaller room expect a low end of 26 Hz. At 10 dB down, the response bandwidth was 25 Hz in the big room, which would translate to 23 Hz in the smaller space. In a very small room, 20 Hz may be attainable.

Operationally the PSB sub was wonderful. The electronic protection made it difficult to overdrive the woofer even when I ran it hard enough to melt the 12-ampere fuse. When the crossover said 50 Hz the actual turnover point was 50 Hz. At a marked 80 Hz it measured 75 Hz. At 100 Hz it was about 85 Hz, and at an indicated 150 Hz it was 132 Hz. Slopes were a minimum of 24 dB per octave. There was a little hum at the maximum volume setting.

The SubSonic 3i averaged 100 dB SPL from 25 to 62 Hz and 101 dB from 25 to 80 Hz in the large room, which would translate to 104 dB for both ranges in a smaller room. With program material, the sub whacked out an amazing 115 dB SPL on the Clear and Present Danger bomb and on the Bass Erotica CD, and it also averaged 115 dB over the three music tracks. This, too, is Olympic-level performance.
KLIPSCH KSW300

The Klipsch KSW300 subwoofer is a product that shares the highest amplifier rating (300 watts continuous) in its class. It achieves this by having the biggest woofer (15 inches) and performing its duties with remarkable efficiency. The subwoofer weighs 76 pounds.

The Klipsch KSW300 delivers 116 dB SPL on the music and 118 dB on the explosion from Clear and Present Danger. That is Herculean output. Of course, the Klipsch subwoofer's response falls at 24 dB per octave at very low frequencies, so it couldn't match the best of the 20-Hz-extension subwoofers in the world. But it kicks everybody’s butt from 40 Hz upward. For a videophile who never plays organ music, the Klipsch KSW300 has to be among the top choices on the market today, especially at its price.

THE LOWDOWN

As a class, these five subwoofers show evolutionary improvements in overall operating character. It used to be common to find considerable interaction between level and crossover controls; if you reset one, the other was sure to be affected. Not anymore. All these subs had remarkable independence between the two primary controls.

Listening revealed that all five, once properly set up, sounded identical with programs that had limited bandwidth (Verve), which I used to test the subwoofers’ ability to reproduce bowed and plucked bass with spatial accuracy and without overload, all five subs sounded fantastic — and virtually indistinguishable from each other.

Sonic differences come with the big-bass stuff. Lower and louder gives more thrill, a greater tactile sensation, and generally a bigger sound field than is more realistic spatially and dynamically. Since these subwoofers had practically identical extension, the main sound-quality distinctions concern their maximum-output capabilities with bass-heavy recordings.

The B&W, PSB, and Klipsch subs are capable of producing substantial maximum output levels. It is only reasonable that they cost 30 to 40 percent more than the least expensive model tested. Among our test group, the Velodyne offers the best value, the Energy captures the style award hands down as far as I’m concerned, the Klipsch offers the most output but with diamond-in-the-rough demeanor, and the PSB and B&W are killer high-tech, high-output subwoofers.

Manufacturers, it seems fair to say, have been doing their homework. Prices are remaining stable, output has moved up a step, and operating characteristics are improving. The typical subwoofer in this price range still fails to do justice to the very lowest and loudest program material available, such as organ music. But for pop, rock, jazz, and most movie soundtracks, they fill all the basic requirements and remain the single easiest, least expensive, and most effective upgrade path to improve the performance of a music or home-theater system.

Audio Fidelity's "Stereodiscs" were hailed in a May 1958 ad as the "first major development in phonograph records since the transition from cylinder to disc."

The arrival of stereo LPs sparked a proliferation of two-channel gear. In the August 1958 issue, Warren DeMotte evaluated the first integrated stereo amplifiers, including the Madison Fielding Model 320, which sold for $169.95.

Audio Fidelity's "Stereodiscs" were hailed in a May 1958 ad as the "first major development in phonograph records since the transition from cylinder to disc."

Flashback

Story by Julian Hirsch and David Ranada

The year was 1958. Eisenhower was President, and the space age had arrived with the birth of NASA and the launch of the first U.S. satellite a couple of months after the Russians put up Sputnik. Hula hoops were the rage, and novelty songs like "Yakety Yak" and "The Purple People Eater" were common on the radio (thanks to all those baby boomers). Eight of the Top 10 TV shows were westerns, and the first Dick Clark Saturday Night Show featured Jerry Lee Lewis singing "Great Balls of Fire."

Of course, 1958 was also the year that the first stereo LPs trickled onto store shelves and the maiden issue of HiFi & Music Review rolled off the press. Hi-fi hobbyists weighed the move from mono to two-channel sound, which required a second (usually large) speaker and an electronics upgrade. Not everyone was convinced stereo was all that it was cracked up to be, but in an article titled "The Straight Steer on Stereo," Robert Cobb examined the new format: "What we have been lacking is the means for adding depth and perspective to reproduced sound. This void is now filled by stereo."

The FCC authorized multiplex stereo FM broadcasting in 1961, enabling listeners to tune in stereo from a single FM station.


The open-reel tape recorder was an audiophile staple in the 1950s and 1960s. The Ampex Model 1070 (1964) cost $399.

The AUC Model 1000 "pushbutton" receiver from 1968 was one of the first to offer electronic tuning and radio presets.

The arrival of stereo LPs sparked a proliferation of two-channel gear. In the August 1958 issue, Warren DeMotte evaluated the first integrated stereo amplifiers, including the Madison Fielding Model 320, which sold for $169.95.

This early stereo tuner from Harman Kardon (1958) received one channel of stereo broadcasts on AM and the other on FM.

Garrard was a popular brand of turntable in the 1960s. The Model 60 MkII cost $74.50 in 1967.

The open-reel tape recorder was an audiophile staple in the 1950s and 1960s. The Ampex Model 1070 (1964) cost $399.

We asked Julian Hirsch to reminisce about the early days of audio and David Ranada to look back on the technological milestones of the past twenty or so years. Brian Fenton and I scoured back issues in search of intriguing images from audio's colorful past. We could have filled the whole magazine with what we found, but finally we settled on a few dozen snapshots that remind us of just how far we've come. Enjoy!

— Bob Ankosko

The First 20 Years

Julian Hirsch

Although my audio testing (and later, writing) activities began on a part-time basis in the early 1950s, they became a full-time career when I became associated with HiFi/Stereo Review (as this
Do-it-yourself kits were popular in the 1950s and 1960s. The Heathkit WA-P2 preamp (1958) sold for $19.75.

Early sub/sat (1958): the Stephens Stereodot system converted a full-range mono speaker (middle) into a three-speaker stereo rig in which the big box reproduced only bass frequencies.

Six "jumbo bookshelf speakers" from 1959, including the classic Acoustic Research AR-3 (top right).

In a 1960 ad, H. H. Scott touted its Model 399 as the first "all-in-one amp/tuner combination... with separate-component quality."

Advent's 5250 Model 100 noise-reduction system introduced the world to Dolby B in 1969. For $475 you got two speakers and an outboard equalizer.

AlphaSonic's "Surround-Sound" speaker (1959) had an 8-inch woofer and an upward-firing tweeter said to radiate sound a full 360 degrees.

Bose introduced its now-famous Model 901 speaker system in 1968. For $475 you got two speakers and an outboard equalizer.

Philips introduced the cassette in 1964, but it didn't take off as a music format until Dolby B noise reduction hit the scene years later. Of the seventeen cassette decks Julian Hirsch tested for his 1970 article, only three had Dolby NR.

In 1960 the magazine was then known) in 1961. My early test reports included the Harman Kardon Citation III power amplifier and the KLH 10 speaker, both very good even by today's standards.

Thirty-seven years and thousands of tests later, I am looking back on what has been the most enjoyable and rewarding career that I could have ever imagined. For the 40th birthday celebration of the magazine, I was asked to reflect on products that I consider to have been particularly noteworthy. Of course, it would take far more pages than we have to cover everything, but here are a few highlights.

The LP record was the dominant program source in the early 1960s, and the January and March issues in 1963 presented reports on two superb record players from Weathers and Acoustic Research. In contrast to previous conventional designs, with their heavy platters and motors, these low-mass turntables were driven by miniature clock-like motors, and they provided superior performance at low prices.

In those days, it was still technically (and economically) feasible to assemble most audio components from kits. Many of my early test instruments, as well as my Heath, Dynaco, and Eico components, were assembled from kits. Our reviews in the 1960s regularly dealt with kit-assembled components.

In July 1964 we reported on the Shure V-15 stereo phono cartridge, one of the most refined record transducers of that or any other time. Its latest version is still available, a sign that the LP remains a viable source of recorded music for serious listeners.

In December 1965, the long-awaited Marantz 10B FM stereo tuner finally made its appearance after years of development. Though one of the finest FM tuners ever made, it was too late in arriving, and the asking price of $600 proved too costly for it to be a success.

In September 1968, we reported on an unconventional loudspeaker from a new company. The unique appearance and distinctive sonic qualities of the Bose Model 901 were controversial — and still are thirty years later in its current version — but Bose has been highly successful with its numerous innovative product designs and today is among the largest manufacturers of high-fidelity speaker systems.

The Dynaco A-25 speaker we reviewed in June 1969 became one of David Hafler's most popular models thanks to its rare combination of excellent sound, compact size, and an affordable price. Dynaco, originally noted for producing high-quality output transformers, also earned an enviable reputation for its excellent power amplifiers and tuners, offered in both kit and assembled forms.

In November 1969, I tested the McIntosh MC-3500 power amplifier, with its conservatively rated 350-watt output, and in the process tested my weight-lifting abilities as well as my collection of 250-watt load resistors! This huge mono tube amp was too large and heavy to be lifted or placed on the test bench, but somehow I got the job done and even got a chance to listen to it. Of course, it sounded excellent, though it was expensive at $1,100 (far more in 1998 dollars).

In October 1970, we reported on a new product that, as it eventually turned out, heralded a revolution in recorded-
The short-lived quad era began in 1970 with Fisher's Model 701 receiver (top), which cost $700 and had 40 watts per channel. Also shown: Sansui's DR-500 quad receiver (reviewed in 1972).

In 1972 a new name appeared on the hi-fi scene. Phase Linear was the creation of Bob Carver, a young physicist and audio enthusiast with an unconventional approach to product design. In September of that year, we tested one of the most powerful stereo amplifiers of the day, the Phase Linear Model 400, which sold for $499 and delivered 250 watts per channel into 8 ohms or 400 watts into 4 ohms with less than 0.25 percent distortion. Eventually Carver founded the Carver Corporation and, most recently, the Sunfire Corporation, whose powered subwoofer (tested in December 1996) and power amplifier (April 1995) continue to demonstrate his innovative talents.

In August 1972, we reported on a new audio product that measured sound instead of generating it. Radio Shack's Realistic sound-level meter, still available for about $40 in an improved version, allows any audiophile to make meaningful acoustic-level measurements for a small fraction of the cost of a precision laboratory-grade instrument. I have several and use them for speaker measurements that do not require a precision microphone costing almost a hundred times the modest price of the Radio Shack meter.

The Audio Pulse Model One that we reviewed in April 1977 was an early attempt to restore a more lifelike ambience to recorded programs. It was a time-delay device, and in my recollection it actually imparted a believable sense of space to the playback of otherwise "dead" recordings. Although it was not particularly successful as a product, it was a precursor of today's surround-sound systems and deserves to be remembered.

In recent years most of my work has been with loudspeakers. The speaker is by far the most important component, since it is the only one that actually generates a sound, yet it is inherently the furthest from "perfect" in its operation. Nevertheless, I continue to be impressed by the qualities of so many speakers, of all types and prices.

As the hi-fi world has expanded in recent years, the number of new products and technical features has proliferated, and the current emphasis favors video and home theater rather than music reproduction. While this is fine as an expansion of our home-entertainment options, I do see a disturbing tendency toward excessive operating complexity, which could limit the appeal of the more sophisticated systems.

In July 1983 Julian Hirsch and David Ranada evaluated eleven of the first-generation CD players, including Magnavox's $800 FD 1000SL and Yamaha's $1,395 CD-1.

An early "AV receiver," Jensen's AVS-1500 (1983) was one of the first to include facilities for video switching.

The introduction of Beta Hi-Fi in 1983 and VHS Hi-Fi in 1984 was the key to bringing home-theater sound to a broad public. Shown here is the JVC HR-D72SU VHS Hi-Fi VCR.

In his April 1983 test report, Craig Stark called the Nakamichi Dragon "simply the finest cassette deck we have tested."

JVC introduced the VHS VCR in 1977. Ultimately, of course, the longer-running VHS format trounced Sony's Betamax in the marketplace.

Music Television (MTV) went on the air in 1981, but TV shows weren't broadcast in stereo until 1984.
The Second 20 Years David Ranada

When I joined Stereo Review in the fall of 1979, the LP was going through what my audio mentor, the late Peter Mitchell, called its baroque era. Turntable designs became ever more bizarre in efforts to eke the last decibel of performance out of the aging stylus-in-groove system, which only two years before celebrated its 100th anniversary.

In an effort to duplicate the geometry of disc cutting during playback, linear-tracking turntables appeared, none producing a sound quality markedly superior to that of a well-aligned cartridge in a pivoting tonearm. To reduce background rumble some designers built turntables that floated on air bearings with their platters connected to air pumps. To reduce mechanical vibrations in the disc itself, turntable mats were made from exotic materials and numerous disc-clamping devices were developed. There were also various recommendations on damping materials that users could stuff into the base of a turntable or underneath the platter. Cartridges and tonearms were the recipients of weird, occasionally successful shock-absorbing mechanisms. And one Nakamichi turntable could even offset a disc's center of rotation to compensate for the wow produced by an off-center pressing.

Circuit designers started paying long-overdue attention to phono-preamp design in an effort to reduce interaction between the circuitry and the attached cartridge and to achieve the theoretical minimum of noise from the preamplifier-cartridge combination. They also sought to perfect the RIAA de-emphasis circuitry, which was often incorrectly specified in circuit-design "cookbooks." Moving-coil cartridges, despite their low output levels and unreplaceable styli, became objects of sonic obsession, probably because their typically non-flat frequency responses interacted euphoniously with the numerous faults of the LP medium.

The editorial controversy surrounding these technologies put bread on my table for several years. But as someone trained in computer programming and digital circuit design, I welcomed with relish the advent of digital audio technology. This appeared first in LPs mastered from digitally recorded session tapes and then in the Compact Disc, which made its U.S. debut in 1983. But it has taken some time for CDs and CD players to fulfill the mathematical promise of the medium. Many don't even come close, discs especially. Early CDs suffered from all sorts of sonic woes, some attributable to incomprehension of such fine points of digital recording as "dither." Digital playback quality was always ahead of recording quality (electronically speaking, playback is much easier), but we had to wait until the advent of "1-bit" digital-to-analog (D/A) converter technology in 1989 before performance was reliably close to theoretical limits. A good 1-bit portable CD player today costs less than a good "baroque-era" phono cartridge and turntable did in 1987. And a well-made "20-bit" CD player on such a portable can reproduce all the fine sonic details that a typical adult human — even an audiophile — is able to hear from a two-channel medium.

Substantial progress can still occur in two-channel audio, however. Consumers can now judge for themselves how...
Ambience/surround processing reached bold new heights with the arrival of Lexicon's CP-3 digital surround processor in 1992.

Well made a commercial CD is by making their own live digital recordings at home, whether on digital audio tape (DAT). Minidisc (a struggling format that's still alive, unlike the still-born DCC), or, most recently, rewritable CD (CD-RW). And coming up are new DVD-based home-recording systems.

Aside from the introduction of new digital media and the development of advanced control/convenience features (infrared remotes, on-screen menus), the area of audio in which digital technology has had the greatest impact has been extension beyond two channels. It began with the pioneering all-digital surround-sound processors from Yamaha and Lexicon, which generated ambience signals from normal stereo recordings. But multichannel audio, which was in its unsuccessful quadraphonic phase while I was in college, never really died. It lived on in movie theaters and reappeared with a vengeance at home with the Dolby Surround and later Dolby Pro Logic systems, whose patents show direct descent from matrixed quadraphony. Before long, digital processing took over the functions of analog Dolby Pro Logic circuits. And digital Pro Logic decoding was itself de-throned by the spectacular Dolby Digital discrete multichannel system (originally known as AC-3), which first appeared at home in laserdisc soundtracks.

Dolby Digital is thriving on DVD, a "convergence" product if ever there was one. It represents a digital melding of audio and video with roots both in the elitist analog laserdisc system, with its high picture quality, and in the populist stereo-TV and analog VCR systems (first Beta Hi-Fi, then VHS Hi-Fi). All these media, together with such influential movies as Star Wars, have awakened in the public an awareness of the dramatic potential of accompanying a video program with high-quality sound. That is the major source of the interest in home theater products like multichannel receivers, surround decoding systems, center and surround speakers, and powered subwoofers. And, by the way, DVD and satellite TV are what first introduced quality digital video playback to the most consumers, not the stuff available on desktop computers.

There's lots coming up in the next few years. Most important is digital TV, coming later this year, in which high-definition programming should play a major role. Next is digital radio with its promise of substantial freedom from interference and multipath effects. Third is the still undecided DVD-Audio system, a potential successor to the CD that holds the promise of a vastly improved listening experience if the format's immense data capacity is wisely used — remember what happened to quad?

Product convergence will continue, with home computers and the Internet becoming ever more integrated into both audio and video. Our listening experience will undoubtedly be enhanced by virtual-reality processing that can produce solid "3-D" sonic imaging from as few as two speakers. And maybe, just maybe, there will be a good, low-cost computer-based room-correction system for jumping over the last great hurdle in home sound reproduction. Then even the most rabid audiophile will be able to relax, forget about the equipment, and just enjoy the music.
The ROAR. The Rumble. Ringside seats to every resounding punch since 1946. The POWER of KLIPSCH.

It's Alive. And, stunningly real. Klipsch first stepped into the ring of big theater sound in 1946 with the unveiling of the patented Klipschorn™ and the introduction of horn technology. This technology continues today as the hallmark of Klipsch speaker design, delivering the most authentic sound reproduction possible. It's no contest—for theater sound that ranks as the perennial heavyweight favorite, choose Klipsch. With the Klipsch Synergy 3.1 Home Theater System™ in your corner, you're ringside for all the action. Thunderous power. Devastating punch. Auditory dynamite wrapped up in a solid, compact package. Visit your Klipsch audio retailer to hear, feel and experience the distinctive Klipsch difference. It's Alive.

Learn more about the heart and science of the Klipsch sound by calling 1-800 KLIPSCH. or for the surfing savvy, visit us online at www.klipsch.com.
MUCH HAS BEEN WRITTEN about the “digital revolution,” perhaps too much. But, in fact, it is proceeding faster than words can describe. Every aspect of our lives has been touched by digital technology, and if it is true that the greatest changes are the ones we most take for granted, then “revolution” is no exaggeration. Exploratory spacecraft beam digital data back to us from distant planets. Our own earth is ringed by orbiting satellites relaying billions of bytes across continents and oceans. The trillions of dollars in our financial markets are measured down to the last bit. Industry, academia, transportation, medicine, entertainment—all have gone digital. Our cars are filled with chips, our desktops and laps hold multimedia computers, and even our dishwashers have operating systems. Of course, our audio and video systems have not escaped the revolution. CD, DAT, MD, DVD, DBS, and other formats are proof that the future is here today, so subtly shifted into our lives that few of us truly understand just how much things have changed.

An average consumer who traveled forward in time from 1958 would be shocked by the magnitude of the change. As she steps down from the time machine and onto your front lawn, she hardly glances at your house; it has not changed much in forty years. Her attention is immediately drawn to an old invention—AM radio. She is aghast at the incivility of this thing that we call “talk radio.”

Arriving back at your home and stepping into your living room, she immediately identifies your television set, but its large screen size and high resolution are a revelation to her—a far cry from her small-screen, grainy black-and-white model. She is even more surprised when you apologize for the picture quality and explain that you are waiting to buy a much better digital television this fall. The number of channels positively shocks her. Whereas her TV picks up three channels from a roof-mounted dipole antenna pointed toward the city, yours picks up hundreds of channels from a pizza-size dish pointed to the sky. You explain how the dish collects digital signals from a trio of geostationary satellites located over the equator.

She is even more amazed when you note that you paid $200 for your satellite TV system. You hand her the satellite receiver’s remote, and she looks at it quizzically. You explain that it sends control commands to your home-theater system via infrared light beams. As she flips through the channels, she is amazed to see films on television—the idea of watching a movie at home is foreign to her. The programs. She is upset to see that even in the middle of the afternoon, images of murder and sex-ual brutality are beamed across America.

You show her a DVD, and she identifies it as a distant cousin of her familiar LP record. You explain that it is essentially a second-generation CD, but instead of stereo music, a DVD contains hours of multichannel digital audio and video. The idea of video is unknown to her (TV was mostly live in 1958), but you explain that digital video can be

and tear, and its pickup is largely immune to shock and vibration.

All of those ideas are completely new to the woman; she can’t imagine driving around in a car with a jukebox full of records. Moreover, the lifelike fidelity of the music startles her. Its full frequency range, dynamic power, full ambience, and loud volume are somewhat unsettling and perhaps seem a little unsafe. You explain to her that modern transistor amplifiers are far more efficient than the vacuum-tube amplifiers familiar to her. Moreover, you are using digital signal processing to recreate the sound of Carnegie Hall in your car. A small computer takes the audio input signal and computes new data to add the correct time delays, equalization, and reverberation. She looks at you as if you’re crazy. Still, hearing is believing. She is a little nervous about your propensity to make phone calls while driving, perhaps even ignoring the larger question of how you can wirelessly and quickly connect to any other phone in the world and communicate with great clarity. And as the drive draws to an end, her attention is drawn to an old invention—AM radio. She is astounded at the incivility of this thing that we call “talk radio.”

Arriving back at your home and stepping into your living room, she immediately identifies your television set, but its large screen size and high resolution are a revelation to her—a far cry from her small-screen, grainy black-and-white model. She is even more surprised when you apologize for the picture quality and explain that you are waiting to buy a much better digital television this fall. The number of channels positively shocks her. Whereas her TV picks up three channels from a roof-mounted dipole antenna pointed toward the city, yours picks up hundreds of channels from a pizza-size dish pointed to the sky. You explain how the dish collects digital signals from a trio of geostationary satellites located over the equator.

She is even more amazed when you note that you paid $200 for your satellite TV system. You hand her the satellite receiver’s remote, and she looks at it quizzically. You explain that it sends control commands to your home-theater system via infrared light beams. As she flips through the channels, she is amazed to see films on television—the idea of watching a movie at home is foreign to her. The programs. She is upset to see that even in the middle of the afternoon, images of murder and sexual brutality are beamed across America.

You show her a DVD, and she identifies it as a distant cousin of her familiar LP record. You explain that it is essentially a second-generation CD, but instead of stereo music, a DVD contains hours of multichannel digital audio and video. The idea of video is unknown to her (TV was mostly live in 1958), but you explain that digital video can be
used to store motion pictures. This is even more puzzling to her because the disc looks nothing like a strip of photographic film, and the player is certainly not a movie projector. As she settles into your sofa, you load the disc and select a chapter from Jumanji.

The sight and sounds of the jungle stampede leave her speechless. You explain that although the actors are real, the lions and rhinos exist only in a computer. The two are merged during postproduction. The enveloping sounds, you explain, come from small speakers around the room, and the room-shaking low frequencies come from an effects channel played through a subwoofer tucked behind the sofa. She explains in turn that although stereo LPs were introduced in 1958, she has never heard sound from so many speakers, or played at such a loud volume. Moreover, she is surprised to see that the speakers are so tiny. She is more accustomed to large wood cabinets with horns.

You switch off your DVD player, and she watches intently as you boot up your PC. She has never heard of companies like Gateway 2000 or Microsoft; they certainly did not exist in 1958. You balance your wireless typewriter keyboard on your knees — its QWERTY layout is all too familiar to her. Although your keyboard is physically disconnected, when you hit a key, the character somehow appears on your television set, as if it were coming from some strange TV station. She is even more surprised by your word-processing program. Typing without paper, scrolling through a document, cutting and pasting, inserting graphs and photos, spell-checking — it all fascinates her. She remembers how long it took her to type (and correct) her term papers on an Underwood.

When you've finished typing, you log onto your Internet service provider to check your e-mail and quickly answer a letter from a friend in Hong Kong. Then you log onto the Web and briefly listen to a radio station in Seattle (from your home in Miami) and download a software program. Finally, you use an Internet videophone program to call a friend in Berlin. She observes all this carefully, and finally simply declares that you must be both an important and wealthy person to control such resources. You reply that you write software for a living, and the services are available to anyone for $20 a month. She asks, "What is software?"

You load in a few CD-ROMs and show her multimedia encyclopedias, textbooks, and children's educational programs. She is very impressed. Then you load in Quake, and she watches as you casually move through the dark corridors, shooting down monsters, your shotgun booming in your surround speakers, their bloody corpses piling up around you.

As she bids you farewell and returns to the vehicle that brought her here, she comments that in her day, a writer said that future technology would bring about a spiritual awakening. After seeing this future, she isn't so sure. She shakes your hand with a firm grip — a bold move on her part, to show...
that she is indeed a progressive woman, but her grasp lingers in yours. She asks, "Would you like to see what the world will be like in another forty years?" You hesitate, then nod. The 1958 woman vanishes before your eyes, and you step into the vehicle. You hear the sound of your heartbeat, growing louder and louder until it seems deafening, and there is a flash of white light.

The year is 2038. Your house is standing there — aside from a few coats of paint, not changed one bit. A woman steps forward to greet you. She is wearing blue jeans. You feel confident that, as a sophisticated technology user, this future world will hold few surprises for you. Then you notice her car. It is pathetically tiny, looking much like a golf cart. You correctly guess that it is electric, but you are surprised by its fast acceleration. You are even more surprised to see that the woman driving the car is taking a nap.

The car guides itself through dense traffic to a highway entry ramp, then accelerates powerfully, quickly joining into a flying wedge of interlocked cars moving at terrific speed.

Without opening her eyes, the woman mutters the word "Zermatt," and the car's windows turn opaque and then show a vivid image of the Swiss Alps, the Matterhorn towering before you in the cloudless blue sky. Gradually the air grows cold, and the only sound is the wind blowing through the craggy rocks. The tranquil images fade to black, and the car's windows again grow transparent. You are surprised to see that you are again parked in front of your house.

The front door swings open as you approach, and you enter the living room. It is empty except for a prayer mat in the center of the room. The woman in blue jeans leads you upstairs and into your walk-in closet. You are surprised to see that a sofa has been placed in the small, bare room. As the door closes, the walls disappear in blackness. Then the room fills with the rapidly developing software-programming techniques as flow charts flash on a screen behind him. Although you are a software expert, his comments are incomprehensibly complex to you. You start to say something, and the professor turns to look at you, smiling. He asks, "Do you have a question?" You shake your head, and he turns away, continuing his lecture. The girl sitting next to you laughs softly. Then a moment later a handwritten note appears on the screen. You turn red as you read it, and she smiles at you again. You close your eyes.

You open your eyes, and you are on stage at a music concert — the high-school girl is standing beside you. The performers are standing around you, playing furiously and deafeningly, the sound of each instrument coming specifically from that instrument. The clarity of the music is incredible. You can hear every note and see every detail. The sound of the crowd, and the hall itself, is absolutely realistic. In fact, it is as if you are really there, but whether it is a live concert or a recording, you cannot tell.

The image of the girl beside you is live, that's for sure, and she dances to the frenzied music. You shout something to her, and she shouts something back. You try to adjust to the sound and its fury, but you cannot; you feel as if you are being physically assaulted. The woman in blue jeans is sitting beside you, smiling placidly. At last the concert ends, and the picture fades to black. As credits roll, you realize that you were experiencing a music recording. An index appears, and you further realize that over a million recordings are online and available to you.

You turn to the woman in blue jeans and ask if she enjoyed the concert. She looks slightly surprised and says that she wasn't at the concert — she was touring the Egyptian exhibit at the Louvre with some friends. You ask her about the concert, wondering where she stores all her discs. The woman smiles and explains that local storage of privately owned copies of programs is an antiquated distribution method. Instead, people simply use remote terminals to access any program they want from a network of centrally stored data.

You ask, "Don't people want to collect their favorite titles?" She smiles — the lawyers put an end to that a decade ago.

The only physical copies left are illegal bootlegs and obsolete curiosities like DVD. "And the hardware," you ask, "is it purchased or leased?" She shrugs. "It came with the house along with all the other appliances." Then you ask about the high-school girl. The woman smiles and says, "Ask her yourself." The girl appears beside you. As you converse with the girl, you learn that she is a kind of tour guide, that she handles a number of household chores, keeps track of billing and finances, does the taxes, reminds you when your favorite shows are on and where your favorite artists are playing . . . . It suddenly dawns on you that the girl is a software program that runs on the home-theater system. "How much does she cost?" you ask the woman incredulously. The woman shrugs and says, "She's shareware.

You look at the girl intently, and then ask her to show you an example of violent content. The girl turns away indignantly. The woman explains that a youngster would never go to such places. She lets you choose another guide, a rough-looking man. You repeat your request, and the man smiles. Even before the images are fully formed, you gasp in shock and repulsion and close your eyes tight. You realize that although technology itself is amoral, its applications certainly are not. In some ways, the challenge is not inventing new technology, it's determining how society should use it.

The woman in blue jeans escorts you back outside, and the time machine materializes in the driveway. The woman asks, "Where would you like to go?" You think of all the past and future times, and answer simply, "1998, please." Your heart pounds and there is a flash of white light.

As profound as recent technological changes have been, it is likely that they are mere prolegomena to what is ahead. The pace of the digital revolution is accelerating, and the rapidly developing sophistication of our digital tools only magnifies our ability to devise still more sophisticated digital tools. Clearly, the inventions of the past forty years will be totally eclipsed by the inventions of the next forty years. It seems that there is no limit to what technology can do. Some modern physicists are even talking seriously about the possibility of time travel. Certainly music lovers would relish such an invention. Instead of listening to a recording of Beethoven's "Waldstein" Sonata, you could simply attend a concert where Beethoven plays the sonata himself. The last word in high fidelity?
First, we’ll tell you what these records are by telling you what they aren’t. They aren’t necessarily (ahem!) The Best Albums of the Past 40 Years, nor even (sniff!) our sentimental favorites. And they aren’t necessarily the biggest sellers. Instead, the titles listed here are records that, in one way or another, made a difference. They were important when they were released; they have staying power today. We went back through the four decades of Stereo Review’s history to pick one popular and one classical album from each year. The resulting Top 40 is a vivid chart of where we all have been — and it goes a long way toward explaining why we fell in love with stereo in the first place.

1958
FRANK SINATRA
Come Fly with Me (Capitol)

BARTOK
Concerto for Orchestra
Chicago Symphony, Fritz Reiner conducting (RCA Victor)

1959
MILES DAVIS
Kind of Blue (Columbia)

WAGNER
Das Rheingold
Flagstad, London, others; Vienna Philharmonic Chorus and Orchestra. Georg Solti conducting (London)

1960
THE DAVE BRUBECK QUARTET
Time Out (Columbia)

SCHUBERT
Symphony No. 9 ("Resurrection")
Cleveland Orchestra, George Szell conducting (Columbia)

1961
ORNELLE COLEMAN
Free Jazz (Atlantic)

LEONTYNE PRICE
Verdi and Puccini Arias
Rome Opera House Orchestra. Arturo Basile and Oliviero Fabritius conducting (RCA Victor)

1962
JOHN COLTRANE
Live at the Village Vanguard (Impulse!)

STRAVINSKY
The Rite of Spring
Columbia Symphony, Igor Stravinsky conducting (Columbia)

1963
JAMES BROWN
Live at the Apollo (King)

BEETHOVEN
The Nine Symphonies
Berlin Philharmonic, Herbert von Karajan conducting (Deutsche Grammophon)

1964
THE BEATLES
Meet the Beatles! (Capitol)

MAHLER
Symphony No. 2 ("Resurrection")
Tourel, Venora; Collegiate Chorale; New York Philharmonic. Leonard Bernstein conducting (Columbia)

1965
BOB DYLAN
Bringing It All Back Home (Columbia)

1966
HANDEL
Concerti Grossi, Op. 3
Academy of St. Martin in the Fields, Neville Marriner conducting (Argo)

1967
BOB DYLAN
Blonde on Blonde (Columbia)

SCHUBERT
Die Winterreise
Dietrich Fischer-Dieskau, baritone; Jorg Demus, piano (Deutsche Grammophon)

1968
THE BEATLES
Sgt. Pepper’s Lonely Hearts Club Band (Capitol)

HANDEL
Messiah
Harwood, Baker, Esswood. Tear, Herinex, Ambrosian Singers; English Chamber Orchestra. Charles Mackerras conducting (Angel)

ORFF
Carmina Burana
Janowitz, Stolze. Fischer-Dieskau; Berlin German Opera Chorus and Orchestra. Eugen Jochum conducting (Deutsche Grammophon)
<table>
<thead>
<tr>
<th>Year</th>
<th>Composer/Artist</th>
<th>Album/Work</th>
<th>Label/Conductor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>THE WHO</td>
<td>Tommy</td>
<td>Decca</td>
</tr>
<tr>
<td></td>
<td>BERLIOZ</td>
<td>Te Deum</td>
<td>Tagliavini, Wandsworth School Chorus and Orchestra, Colin Davis conducting (Philips)</td>
</tr>
<tr>
<td>1970</td>
<td>MILES DAVIS</td>
<td>Bitches Brew</td>
<td>Columbia</td>
</tr>
<tr>
<td></td>
<td>DEBUSSY</td>
<td>Images for Orchestra; Sacred and Profane Dances</td>
<td>Cleveland Orchestra, Pierre Boulez conducting (Columbia)</td>
</tr>
<tr>
<td>1971</td>
<td>LED ZEPPELIN</td>
<td>Piano Music, Vol. 1</td>
<td>Atlantic</td>
</tr>
<tr>
<td></td>
<td>SATIE</td>
<td>Piano Music, Vol. 1</td>
<td>(Angel)</td>
</tr>
<tr>
<td>1972</td>
<td>THE ROLLING STONES</td>
<td>Exile on Main St.</td>
<td>(Rolling Stones/Atlantic)</td>
</tr>
<tr>
<td></td>
<td>MAHLER</td>
<td>Symphony No. 8</td>
<td>Auger, Harper, Popp, Minton, Watts, Knoll, Shirley Quirk, Talvela: Vienna State Opera Chorus; Vienna Boys' Choir; Chicago Symphony, Georg Solti conducting (Deutsche Grammophon)</td>
</tr>
<tr>
<td>1973</td>
<td>PINK FLOYD</td>
<td>The Dark Side of the Moon</td>
<td>Harvest/Capitol</td>
</tr>
<tr>
<td></td>
<td>PUCCINI</td>
<td>Turandot</td>
<td>Sutherland, Caballé, Pavarotti, Ghiaurov, others; John Allis Choir; London Philharmonic, Zubin Mehta conducting (London)</td>
</tr>
<tr>
<td>1974</td>
<td>JONI MITCHELL</td>
<td>Court and Spark</td>
<td>Asylum</td>
</tr>
<tr>
<td></td>
<td>SHOSTAKOVICH</td>
<td>Symphony No. 8</td>
<td>London Symphony, Andre Previn conducting (Angel)</td>
</tr>
<tr>
<td>1975</td>
<td>BRUCE SPRINGSTEEN</td>
<td>Born to Run</td>
<td>Columbia</td>
</tr>
<tr>
<td></td>
<td>BEETHOVEN</td>
<td>Symphony No. 5</td>
<td>Vienna Philharmonic, Carlos Kleiber conducting (Deutsche Grammophon)</td>
</tr>
<tr>
<td>1976</td>
<td>RAMONES</td>
<td>Sire</td>
<td>RCA Victor</td>
</tr>
<tr>
<td></td>
<td>MESSIAEN</td>
<td>Quartet for the End of Time</td>
<td>Tashi</td>
</tr>
<tr>
<td></td>
<td>GRANADOS</td>
<td>Goyescas</td>
<td>Alicia de Larrocha, piano (London)</td>
</tr>
<tr>
<td>1977</td>
<td>FLEETWOOD MAC</td>
<td>Rumours</td>
<td>Warner Bros.</td>
</tr>
<tr>
<td></td>
<td>DEBUSSY</td>
<td>Preludes, Books 1 and 2</td>
<td>Paul Jacobs, piano (Nonesuch)</td>
</tr>
<tr>
<td>1978</td>
<td>ELVIS COSTELLO</td>
<td>This Year's Model</td>
<td>Columbia</td>
</tr>
<tr>
<td></td>
<td>NEIL YOUNG AND CRAZY HORSE</td>
<td>Rust Never Sleeps</td>
<td>Reprise</td>
</tr>
<tr>
<td></td>
<td>BRITTEN</td>
<td>Peter Grimes</td>
<td>Vickers, Harper, Summers, others; Chorus and Orchestra of the Royal Opera House, Covent Garden, Colin Davis conducting (Philips)</td>
</tr>
<tr>
<td>1980</td>
<td>THE CLASH</td>
<td>London Calling</td>
<td>Epic</td>
</tr>
<tr>
<td></td>
<td>MOZART</td>
<td>Symphonies Nos. 18-27</td>
<td>Academy of Ancient Music, Christopher Hogwood conducting (L'Oiseau-Lyre)</td>
</tr>
</tbody>
</table>
1981
SQUEEZE
East Side Story (A&M)
J. S. BACH
Goldberg Variations
Glenn Gould, piano (CBS)

1982
MICHAEL JACKSON
Thriller (Epic)
TERESA STRATAS
The Unknown Kurt Weill
Teresa Stratas, soprano; Richard
Woitach, piano (Nonesuch)

1983
R. E. M.
Murmur (I.R.S.)
MOZART Piano Concertos
Nos. 15 and 21
Alfred Brendel; Academy of
St. Martin in the Fields, Neville
Marriner conducting (Philips)

1984
PRINCE AND
THE REVOLUTION
Purple Rain (Warner Bros.)
MAHLER Symphony No. 9
Berlin Philharmonic, Herbert
von Karajan conducting (Deutsche
Grammophon)

1985
THE REPLACEMENTS
Tim (Sire)
BERNSTEIN West Side Story
Te Kanawa, Carreras, Troyanos,
Horne; Orchestra and Chorus
conducted by Leonard Bernstein
(Deutsche Grammophon)

1986
PAUL SIMON
Graceland (Warner Bros.)
BEETHOVEN Piano
Concertos Nos. 3 and 4
Murray Perahia, Concertgebouw
Orchestra, Bernard Haitink
conducting (CBS)

1987
U2 The Joshua Tree (Island)

1988
PUBLIC ENEMY
It Takes a Nation of Millions to Hold Us
Back (Def Jam/Columbia)
ADAMS Nixon in China
Sylvan, Maddelena, others: chorus;
Orchestra of St. Luke's, Edo
de Waart conducting (Nonesuch)

1989
MADONNA
Like a Prayer (Sire)
HANSON Symphony No. 1
("Nordic"); Symphony No. 2
("Romantic"); Elegy
Seattle Symphony, Gerard Schwarz
conducting (Delos)

1990
GARTH BROOKS
No Fences (Capitol)

1991
NIRVANA
Nevermind (Sub Pop/DGC)
SMETANA Ma Vlast
Czech Philharmonic, Rafael
Kubelik conducting (Supraphon)

1992
LYLE LOVETT
Joshua Judges Ruth (Curb/MCA)
GORECKI Symphony No. 3
Dawn Upshaw; London Sinfonietta,
David Zinman conducting
(Nonesuch)

1993
LIZ PHAIR
Exile in Guyville (Matador)
BRAHMS
Piano Concerto No. 1
Stephan Kovacevich; London
Philharmonic, Wolfgang Sawallisch
conducting (EMI)

1994
VLADIMIR HOROWITZ
The Last Recording
Vladimir Horowitz, piano (Sony)

1995
P J HARVEY
To Bring You My Love (Island)
RACHMANINOFF
Piano Concerto No. 3
Martha Argerich: Berlin Radio
Symphony, Ricardo Chailly
conducting (Philips)

1996
BECK
Odelay (DGC)
PROKOFIEV
Romeo and Juliet (selections)
San Francisco Symphony,
Michael Tilson Thomas conducting
(RCA Victor)

1997
RADIOHEAD
OK Computer (Capitol)
KRONOS QUARTET
Early Music (Nonesuch)
Remember your first stereo components? Or is it the music — or the company — that comes to mind rather than the gear? As part of our 40th-anniversary celebration, we asked past and present editors and contributors to reminisce about their beginnings in stereo, however humble. From David Hall’s 1940 (!) preview of surround sound at the New York first run of Walt Disney’s Fantasia to Corey Greenberg’s fond memories of the Quad Era, here’s the first installment of audio autobiographies from this crowd of sound lovers. More next month!

**DAVID HALL**
Classical music reviewer; formerly a record producer for Mercury and this magazine’s first managing editor and music editor

My first inkling of stereophonic sound was in April 1933, when — as a teenager with primitive components from Lafayette Radio — I read with total fascination the *New York Times* reports about “three-dimensional sound” demonstrations at Washington’s Constitution Hall. The Philadelphia Orchestra was being piped into a huge three-speaker array over phone lines from the Academy of Music in Philadelphia. But my first listening experience on the way to stereo came in November 1940, when I saw Walt Disney’s *Fantasia* in a New York theater. The sequences featuring Bach’s Toccata and Fugue in D Minor and Mussorgsky’s *Night on Bald Mountain*, as arranged and conducted by Leopold Stokowski, were just plain dumbfounding, visually *and* sonically, with *surround sound* based on Bell Lab experiments rather than the stereo that was commercially developed some fifteen years later.

Cut to Orchestra Hall, Chicago, December 1952. The legendary C. Robert (“Bob”) Fine and yours truly, as classical music director and producer, respectively, for Mercury Records, were busy recording Rafael Kubelik’s fiery reading of Smetana’s symphonic cycle *Ma Vlast* (*My Fatherland*) with the
Chicago Symphony. A guest brought along a Magnecord staggered-head tape recorder. He was Bert Whyte, later to become a topnotch producer and audio writer himself. He recorded a fair portion of the Smetana sessions at 7 1/2 ips, and these experimental takes were my first one-on-one encounter with stereo sound. Frankly, I found it more thought-provoking than mind-boggling. Hearing guitar transients on early FM radio (Major Armstrong's pre-World War II W2XER in New Jersey, later WQXR) made a greater impression.

A few years later came the first commercially issued stereo tapes from RCA, Columbia, and Mercury, among others. By that time I had departed Mercury for a Fulbright year in Denmark, where I experienced some of the Danish work in electroacoustics and stereo illusion, and a few weeks after my return in the fall of 1958 I found myself on the staff of a brand-new magazine, HiFi & Music Review. Subsequently HiFi/Stereo Review (1960-68) and Stereo Review (1968 to date). At that time I had stereo tape playback equipment at my house in Wilton, Connecticut — a fine four-track, three-speed Tandberg machine — along with a pair of very high-efficiency Tandberg speakers.

When the redoubtable Sid Frye of Audio Fidelity turned the record industry on its ear in November 1957 with the first stereo disc to be cut with the Westrex 45/45 system (stereo LP's weren't yet available to the public), there was fortunately no destructive battle over standards like the 1949-50 Battle of the Speeds (33 1/2 vs. 45 rpm) that almost destroyed the U.S. recording industry. By May 1958, with a universally accepted cutting system in place, stereo LP's became a fact of life. I added an H. H. Scott stereo amplifier to my Wilton playback setup along with a decent quality turntable.

After HiFi & Music Review became HiFi/Stereo Review in 1960, I upgraded my playback setup again, with help from Bert Whyte, and by 1963 I had a pair of 10-cubic-foot boxes with twin Wharfedale bass drivers topped by Picketing electrostatics for the upper end of the spectrum. Harman Kardon amplification supplied the electronic muscle, and I used Shure cartridges and styli for disc playback. With various outboard modifications this setup stood me in good stead until the summer of 1985, when a move to smaller quarters dictated drastic downsizing.

My first "stereo"? Actually, it was a "mono"! Circa 1950, stereo as we know it was still a few years away, although several mutually incompatible systems for supplying two independent sound channels were under consideration. By that time, however, a fledgling "hi-fi" industry had already made its appearance, largely in the form of loudspeakers and amplifiers derived from public-address applications. Like many others in those days, my first music system was home constructed, although its basic program sources (tuner and record player) were commercially manufactured.

I still have the Williamson amplifier that powered my first system, although it is no longer in operating condition. Except for its massive Partridge output transformer, which weighed more than 20 pounds and had to be ordered and shipped from England, the power supply was made with surplus World War II components.

The amplifier's pair of 807 output tubes, operating at 450 volts, delivered about 12 watts of clean audio at well under 0.1 percent distortion — remarkable for that time and easily enough power to drive the relatively efficient speakers of the period.

The loudspeaker systems of those days tended to be large and expensive and were often poorly suited to the requirements of a high-fidelity music system. Many audiophiles preferred to assemble their own speakers. In my case, this consisted of building a corner enclosure containing a GE 1201D (a popular, reasonably good 12-inch driver) and a small University horn tweeter. There were few available FM tuners, and stereo broadcasting was still a few years in the future. I chose a tuner marketed by Sun Radio, which served me well for a number of years. Aside from radio, phonograph records were the principal source of listening material. Tape recordings were of limited quality in the early years, and I never became a tape enthusiast. LP records and FM radio were of sufficiently good quality to satisfy my musical tastes. A Webcor record changer and a GE Variable Reluctance phonograph cartridge met my recorded-music needs. In later years they were replaced by numerous more refined components.

The only component of my constantly evolving music system that has remained relatively constant over the years is the pleasure it provides, and that is probably as it should be.
I can’t swear that it was the first stereo record I ever heard, but the chug-along bass riff in Henry Mancini’s classic Peter Gunn theme playing on the family’s first hi-fi system is what sticks in my mind. Actually, the system was one of those huge all-in-one consoles — from TV-maker Zenith, no less — that any self-respecting hobbyist would have shrugged off. But the skin-tingling bass it produced was an exciting new sensation for a 7-year-old kid whose only source of music had been a portable radio in the kitchen and the Fifties-era 45-rpm record player his mom had used in high school a decade earlier. The console’s components were housed in a gorgeous, solid-walnut cabinet that immediately became the centerpiece of our small living room, threatening to dethrone the almighty RCA color TV (except in the evening when shows like Bonanza and Batman were on).

With six drivers in all, including a couple of good-size woofers, I remember the old console as a formidable presence that could play remarkably loud without distorting. I’m sure the speakers were too close together and too near to the floor to project a good stereo image, but who knew? You had to lift a lid in the middle of the cabinet to get at the system’s semiautomatic turntable and AM/FM radio with its big tuning dial and stereo button; there was also a cubbyhole with space for twenty or so LPs. As my brother and I got a little older, my folks very graciously allowed us to use the system — at least until we started collecting records in earnest.

When I was 11 or 12, I bought my first album — Abbey Road, which made me a Beatles fan for life. I can’t begin to count how many times I played “Come Together” with the volume cranked up and the windows open (to impress the girl next door). Come to think of it, my folks must have felt it was a pretty good record, too, considering how many times they let me get away with blasting it!

By the time I was 13, my record collection had mushroomed to the point where I was spending way too much time in the living room, so mom and dad bought me a neat little component system at Radio Shack as a Christmas present that year. I was in heaven. Perched on a shelf above my desk was my very own 20-watt Realistic receiver, one of those cheap turntables with the smoked-plastic dust cover, and a pair of bookshelf speakers, each with a lone 3-inch driver. The bass output of the tiny drivers was no match for the console system, but at least the speakers’ acousticsuspension design did a decent job of faking it.

In those days, I fed the turntable a steady diet of Beatles, Stones, and Led Zeppelin, slipping in the occasional James Taylor or Joni Mitchell LP for variety. Around that time I developed an interest in playing music myself, which led to the discovery that many of my beloved stereo LPs — particularly the Beatles albums — were mixed in a way that made it easy to isolate specific parts. I’d turn the balance control one way to zero in on the guitar, the other way to figure out what the drums, bass, and vocals were doing. And that’s how I learned to play countless drum solos and guitar licks.
Like most people who grew up in the 1950s, my first exposure to stereo sound was in a movie theater. It was one of the technological innovations Hollywood adopted to keep a step ahead of its arch-rival, television (the others were widescreen images and nearly universal color).

Movie stereo in those days was mostly unsatisfactory. For one thing, the soundtracks themselves were very gimmicky, with things flying overhead or stuff happening behind you. Also, the acoustics of the theaters — the ones near me, anyway — were dreadful.

Home stereo first showed up in the form of prerecorded open-reel tapes, and kits were available that let you add an extra head to an existing tape deck. I don’t believe I ever heard one of those tapes directly, but a couple of local radio stations got together to broadcast some samples, the left channel on one frequency, the right channel on the other. There was some sense of space, but I don’t imagine that they were able to control the phase relationship of the two broadcast signals very well. One station even tried using its AM frequency for one channel and its TV frequency for the other, with similar results.

Stereo sound didn’t become a practical reality until the stereo LP appeared in 1958, and it wasn’t long after that that I had my first taste of reasonable two-channel sound. A friend’s father ran a music store that also carried audio gear, and he brought home one of the first stereo music consoles, along with a handful of records. The console was impressive enough, but its built-in speakers were so close together that I had to sit on the floor right in front of it to get any spatial effect. From 3 feet away, it was mono.

These minor brushes with two-channel sound did little to make me want to abandon my already considerable pile of mono gear. That changed when another friend’s father unveiled his new system: Marantz electronic separates, AR speakers, a Fairchild turntable, a Weathers tonearm — the works. The sound was a revelation, even though many of the records still tended to favor ping-pong effects. Rather like those gimmicky early stereo movies.

Would, gentle reader, that I could spin you a heartwarming tale of a two-headed immigrant urchin sitting rapt around the kitchen table with his mama and papa as the soft green glowing dial of an Atwater-Kent radio brings the whole wide world into their tiny Hell’s Kitchen tenement. Or perhaps the story of a Fifties high-school hooligan, a greasy dollop of Royal Crown pomade in one hand and a burning soldering iron in the other, hovering over the abandoned Rock-Ola jukebox that would one day blast Link Wray’s “Rumble” as his roaring Indian motorcycle plunged in slo-mo off Stag’s Leap because he refused to yell “Chicken!” Or the gut-wrenching saga of an idealistic young man thrust into the eye of a storm called the Sixties, plunging headfirst into a hedonistic world of free love, beaded vests, and Dynaco tube amps.

I’d love to be able to blow the dust off of any of those yams, but I can’t. Because I grew up during the height of the most low-down, wretched period the hobby of hi-fi has ever known — the Quadraphonic Seventies. It was a tragic time for many people, but for none more than the thousands of audiophiles who bought second speaker pairs for the back of their rooms, fitted their turntables with extended-response phono cartridges, and tried to wring the first baby breaths of surround sound from warped vinyl records.

My first real stereo system consisted mostly of hand-me-down components from my dad — a midprice Lafayette quad rig missing the rear speakers that originally came with it. The 35-watt quadraphonic receiver was one of those cold, nasty Seventies solid-state jobs that took sound quality to an all-time low, but to me it was the finest piece of audio gear I could ever hope to call my own. The bookshelf speakers, with their cheap foam woofer surrounds and ripped paper-cone tweeters, sounded so much better than the cheap trade-foam speakers attached to my old record player that I felt like I was hearing my records for the first time. Soon Hanukkah came, and with it a new Technics turntable and a bigger pair of speakers — Cerwin-Vega rock-and-roll thunderboxes with the big red-rimmed woofers. Dy-no-mite!

My attempts at rigging up my system for successful quadraphony were about as good as the next guy’s, which is to say I never got four-channel sound to work even half right, but I sure had fun sitting in the dark of my bedroom as the scrambled-phase wackiness of the few quad-encoded LPs I got filled the room with crazy, swirling, totally random surround sound. And to think that all of this interest in hi-fi began when I discovered a magazine called Stereo Review in my friend’s older brother’s room (and if you don’t believe me, you can ask my mom, who’s still trying to get me to clean out the boxes of back issues I’ve been saving in her attic).
Do what you love.
The rest comes.

Take it easy.
Kristin Hersh's Strange Angels

For those of us who braved the storm of debut albums by sensitive, tortured female artists over the past year, it didn't take long to realize that Throwing Muses and their frontwoman, Kristin Hersh, did it all better a decade ago. Hersh's new album, Strange Angels, comes after her previous solo disc, 1994's Hips and Makers, but in some ways it feels like a follow-up to the Muses' 1986 self-titled debut record, which ranks with any alternative-rock classic you'd care to name. Still unreleased in America, Throwing Muses was a beautiful mess of mangled guitars and tangled feelings, with darkness and depth in the songs by Hersh (and, in one case, by her stepsister, Tanya Donelly). The band never transcended its cult-hero status before breaking up last year, but you can still hear its influence today, most obviously on one of the best records of 1997, Sleater-Kinney's Dig Me Out.

On the surface, Strange Angels is very different from that first Muses disc, since the screaming and the loud guitars have been replaced by lusher pop leanings. In fact, the tunes here are among Hersh's loveliest, and although the program is mostly solo acoustic, she adds enough subtle overdubs (bass, cello, piano, organ) to warm up and fill out the sound. Her vocals have also gotten more seductive, as when she shows her playful/romantic side in "Like You." More often, however, there's a creepy beauty that harks back to "Delicate Cutters," the acoustic finale of Throwing Muses. The new album's lead-off track, "Home," sets up the record's otherworldly feel and makes the most of Hersh's Appalachian twang. Even when the subject matter is more wholesome, her imagery gets unusually vivid. How many writers would think to express motherly love with the line, "When he drools, it's like he's spitting jewels"?

Kristin Hersh has always insisted that she doesn't write songs in the conventional sense; she merely channels them from inner voices that wake her in the middle of the night. Judging from the material on Strange Angels, it's time to give those voices a raise.

Brett Milano

Vivaldi with Style, Vigor, And Charm

Back in the dimly remembered days when we seldom heard Vivaldi at all, his Op. 12 violin concertos had a certain currency — at least the first of them, in G Minor, which was usually heard in a nineteenth-century arrangement. The new recording of these concertos on L'Oiseau-Lyre by the Academy of Ancient Music under Christopher Hogwood, with the Academy violinist Pavlo Beznosiu as soloist, appears to be only the third "integral" recording of Op. 12, which was Vivaldi's last published set of concertos and comprises only six works rather than the dozen that constitute the better-known collections to which he gave such titles as L'Estro Armonico, La Stravaganza, and La Cetra. Neither the sound nor, to an even greater degree, the performance in the 1974 Philips recording by Salvatore Accardo with I Musici or the more recent one by the Solisti Italiani on Denon compares with the robust new offering from L'Oiseau-Lyre, which would have swept a field of any size.

A curiosity in Op. 12 is the shortest of the six concertos, No. 3, in D Major,
which is not a violin concerto at all but one of Vivaldi's dozens of miniature concertos for strings without a solo instrument — the only one, in fact, to be published in his lifetime. It's a more than attractive piece in its own right and a fetching little intermezzo amid some of the most distinguished and utterly captivating performances of any of the actual violin concertos to come our way to date from any source. As soloist, Beznosiuk definitely does not take a "one size fits all" approach but celebrates the individuality of each of the five solo concertos, and he gets exceptional support from Hogwood and his splendid players. The performances display a dazzling abundance of vigor and charm, a thorough understanding of the style, and obvious affection for the music on the part of both soloist and conductor: a similarly apparent joy in performing it together illumines every phrase. Articulation is consistently crisp — whether in the marvelously animated outer movements or the downright melting loveliness of the tiny slow movement of No. 6, in B-flat Major, with its pizzicato accompaniment under the heartily yet caressing solo — and yet the expressive effect is of unrestricted and unfeigned warmth. The continuo does not rely on a harpsichord exclusively but involves an organ and an archlute as appropriate. The recorded sound could hardly be more effectively tailored to this music and these richly enlivening performances, and H. C. Robbins Landon's annotation is yet another facet of the overall excellence of the production. Now, if the same team will kindly oblige with similar attention to Vivaldi's other neglected demi-dozens, the Op. 6 and Op. 11 violin concertos . . .

Richard Freed

VIVALDI Violin Concertos, Op. 12
Pavlo Beznosiuk, violin; Academy of Ancient Music, Christopher Hogwood cond.
(L'Oiseau-Lyre 443 556, 53 min)
The most popular collections of all (DCC Compact Classics) One of Jam," "The Trip," and "Things Ain't
tapes and transferred to gold disc. time, remastered from the original
THE STEVE MILLER BAND
What They Used to Be."

THE STEVE MILLER BAND
Greatest Hits 1974-78
(DCC Compact Classics) One of the most popular collections of all
time, remastered from the original tapes and transferred to gold disc.

ELLA FITZGERALD AND DUKE ELLINGTON
Ella & Duke at the Côte D'Azur
(Verve, two CDs) Recorded in
1966, this classic double album now
includes the bonus tracks "Jive
Jam," "The Trip," and "Things Ain't"
What They Used To Be.

THE STEVE MILLER BAND
Gold Classic "Full Dimensional Sound"

MAHLER Symphony No. 9
London Symphony, Leopold
(Lowden cond. (Vanguard EVC
9059). The Moravian-born
conductor studied at the Vienna
 Conservatory, where Mahler had
been a student. Recorded in 1960
on 35-mm tape and remastered
with 20-bit technology.

RACHMANINOFF
Symphony No. 2
PROKOFIEV
Classical Symphony
R. STRAUSS
Till Eulenspiegel
Pittsburgh Symphony, William
Steinberg cond. (EMI 66554).-
Classic "Full Dimensional Sound"
mono recordings on Capitol from
1953-54.

TCHAIKOVSKY
Piano Concerto No. 1;
The Nutcracker (excerpts)
Emil Gilels, piano; Chicago
Symphony, Fritz Reiner cond.
(RCA Victor 68530). One of the
great performances of the concerto
in a stunning "Living Stereo"
recording from 1955, originally
released in mono before the advent
of stereo LPs, with Nutcracker
excerpts from 1959.
Some notable quotes from Edward M. Long in Audio's September issue:

"...KEF has gained an enviable reputation for producing excellent loudspeakers."

"...clear, precise imaging."

"The RDM one reminds me of the classic BBC LS3/5a, but with deeper bass and higher output."

"...the KEF RDM ones are an excellent value—and very good looking, too."

Designed by the same engineers as our legendary Reference Series, the RDM one features KEF's patented Uni-Q® technology. Uni-Q places the tweeter at the exact acoustic center of the woofer cone to create a single point source for the entire frequency range—the ideal to which all speakers aspire—producing a flawless soundstage over a much wider listening area. Whether on a bookshelf or stand, the RDM one no longer confines you to sitting in a central sweet spot to enjoy exceptional performance. Audition them for yourself by contacting us for the name of the authorized KEF dealer nearest you. Ask for a full reprint of the RDM one review when you call.
MARCIA BALL, IRMA THOMAS, AND TRACY NELSON Sing It!
(Rounder, 48 min)

Sing It!, a trio record by three of the most distinctive soul and blues vocalists, arrives with high expectations. Marcia Ball, planting one foot in New Orleans and the other in Austin, practices a form of blues-jazz that live audiences find irresistible. Irma Thomas, a soul queen for four decades, is deservedly a legend. And Tracy Nelson is nothing short of a country-soul force field. Here they sing separately, in pairs, and all together, and they fulfill the record's biggest promises as they revisit the R&B of the Fifties and Sixties in songs by Joe Tex, Mike Reid, Gary Nicholson, Steve Cropper, Dan Penn, and Jerry Ragovoy. It's a joy to hear these women, who at times ("Shouldn't I Love Him") recall the best "girl groups" of years past - and who seem to be enjoying the project as much as the rest of us. Yet only Nelson gets to the emotional core of the pain that drives the soul genre. Whether handling the lead of "In Tears" or sharing the duets of "You Don't Know Nothin' About Love" and "Heart to Heart," she is a pure and transcendent artist. More than that, she's a miracle.

GARTH BROOKS Sevens
(Capitol, 46 min)

Give Garth Brooks credit for opening his much-hyped, long-delayed seventh album with an honest-to-God country song. "Longneck Bottle" is a first-class George Jones homage that sports an unusually traditional (for Brooks) swing sound, wailing steel and all. You have to figure he's making a point by putting this song up front: he may hold back his album for months as he fights with his record label over marketing strategy, but he can't deny his real talent.

Nice try, but the rest of Sevens doesn't measure up. Only the tuneful tearjerker "She's Gonna Make It" and the token barnstormer "Cowboy Cadillac" are as convincingly country as the opener. Otherwise, Brooks sounds even slicker and poppier than before, and his message songs are trite. Worse still, each half of Sevens closes with a big production number that falls flat. "Fit for a King" tries to identify with the homeless and downtrodden, but no amount of gospel choruses can keep it from sounding condescending. As for "Belleau Wood," which celebrates a Christmas truce during World War I, Collin Raye already recorded "It Could Happen Again," a similar-sounding song on the same topic, for his 1996 Christmas album. And you know somebody's playing it too safe when his most topical song is set eighty years ago.

GREG BROWN Slant 6 Mind
(Red House, 54 min)

The hipster/beat-poet/singer Greg Brown opens Slant 6 Mind with "Whatever It Was," a moody stream of consciousness where "the little towns are lying on their faces." Like the seemingly normal bums of David Lynch-land, Brown's small towns are teeming with anxiety, chaos, and perversion. There's a guy in a bra, for starters, as well as a headless body out on the lawn and a drive-by shooting in Lake Wobegon. It's scary in the heartland, and it's an ominous heart that beats through most of the rest of Brown's program.

Brown has a baritone-bass that gets down between the crevices of the lowest notes of the scale and rattles around for a while before coming up for air. He is a commanding vocalist who would attract attention even if he didn't wrap that otherworldly instrument around some of the most original and transporting lyrics in popular music. "Mose Allison Played Here" is a true-sounding story about the woes of an itinerant musician. The gritty "Down at the Mill" turns on anger and violence. And in "Billy from the Hills," the smell of death hangs in the air. These and other songs are cinematic jewels, polished to perfection by Brown's deft blues guitar playing.

Greg Brown's America won't be embraced by the Brady Bunch crowd, but it's an unforgettable portrait, painted by one of folk's pre-eminent artists.

THE DERAILERS Reverb Deluxe
(Watermelon/Sire, 48 min)

On first hearing, the Austin-based Derailers are so ear-tweakingly country, so steeped in the hard-core Bakersfield style, that it's easy to dismiss them as parody. But they eventually win you over with their Buck Owens-inspired originals and their earnest covers of classics like Harlan Howard's "I Don't Believe I'll Fall in Love (Today)" and the thrilling "No One to
Talk to But the Blues,” a song reminiscent of early Elvis Presley but made famous by Lefty Frizzell. Vocally, the Derailers’ hit and miss: “Tears in Your Eyes” is nearly good enough to remind you of the Everly Brothers’ familial harmony, but the lead in “Painful Days and Sleepless Nights” is just plain painful to hear. Still, you forget all that when they launch into “Ellen,” a lively chicken-pickin’ instrumental, or “Come Back,” a rockabilly diamond in the rough. These four cats are too retro and rough-edged for Nashville, and, to my way of thinking, that’s a compliment. Hear ’em before they get the big head. A.N.

GOLDEN CARILLO Back for More
(Kayvo, 38 min; 16 W. 19th St., 5th floor, New York, NY 10011; KayvoPro@aol.com)

The scene is the Manhattan haunt CBGB, the time is the late 1970s, and the veritable house bands are the Ramones, Blondie, Talking Heads, Television, the Shirts . . . the Shirts? Yes, they were there, too, a Brooklyn sextet of arty popsters who ultimately were overlooked for not being as raw, sexy, or eggheaded as their colleagues — never mind that Shirts shows were all-stops-out, dual-guitars-branded affairs. The band eventually broke up, but riveting lead vocalist Annie Golden not only kept plugging (and unplugging) away but also showed her versatility by tackling cabaret, film (from Hair to 12 Monkeys), and TV (as Cliff’s girlfriend Margaret in Cheers).

First and foremost, however, she remains a charismatic singer, and for the past several years she has been singing and writing with guitarist Frank Carillo. Their first two albums, A Fire in New Town and Toxic Emotions (actually different versions of the same record), had some strong material, but Back for More is a great leap. Golden and Carillo have become a genuine duo, their sweet/southern strut of Keith Sweat and the engagingly youthful balladry of Johnny Gill. The result is a consistently pleasing vocal blend, but LSG’s Levert/Sweat/Gill reaches fewer peaks than expected. Perhaps each singer was trying too hard not to hog the spotlight. It doesn’t help that many of the songs are based on simple, monotonous riffs. But the three are capable of pushing each other too exciting heights, as in “Drove Me to Tears,” the best-shaped and most tuneful song here. And spirited changes of pace come by way of various guests, from rappers The Lox and LL Cool J to the refreshing female input of Faith Evans, Coko of SWV, and Missy “Misdemeanor” Elliott. Overall, LSG’s Levert/Sweat/Gill is an experiment that lights no new fires but certainly doesn’t fizzle. P.G.

METALLICA Reload
(Elektra, 76 min)

Metallica could just as easily have called this one Rehash or Redux, since the thirteen tracks have their origins in the sessions for the band’s previous album, Load. Statistically, the mother lode of material on both records edges out Guns N’ Roses’ output on the two volumes of Use Your Illusion by 3 minutes, making Metallica the new heavyweight in the overkill department. Artistically, Reload is more of the same, only darker — which is not to say better.

 Whereas Load had changes of pace like the countryish “Mania Suicide” and the reflective “Wasting My Hate,” Reload mires the band in a fire-breathing, heavy-metal rut of evil and devility. As players, the guys remain sharp as a saber’s edge, mounting a controlled attack upon all that bugs them with laser-precise riffing. At this point, however, there’s something automatic about the demon-obsessed negativity. We’ve heard it all before, and although Metallica can still rock like the furies on Reload, its slickness now seems merely ill-tempered and anachronistic. P.P.

TODD SNIDER Viva Satellite
(MCA, 65 min)

After two impressive albums that rocked with a decided folk-country leaning, Todd Snider has gone for a straighter rock/pop sound on Viva Satellite, making, as he puts it, music “in celebration of whatever we want, for better or worse.” Most of the time it’s for better, but it veers the other way in a cover of Steve Miller’s “The Joker,” a song that needed no resurrection, and in “I Am Too,” with riffs too derivative to support Snider’s claim that his is “the best rock band in the world.” As before, Snider is often more interesting lyrically than melodically, especially in “God Send,” where he succinctly prays for “an angel to love,” tiring of “bachelor life / got two ex-wives / beer-can pile / night-club world / ashy girl.” The Townes Van Zandt-ish “Doublewide Blues” and “Positively Negative” (“Come out here tonight / And I will let you treat me like the victim / I’m not gonna be”) round out his more intriguing songs, after the hallucinogenic “Satisfaction Guaranteed” and the hip I-found-Jesus-of-

SONGS FROM THE BIG CHAIR

Southern Culture on the Skids
CD cover, Dubstar
CD cover, Southern Culture on the Skids

Ad campaign, Pink Floyd reissues
Help Stereo Review Celebrate its 40th Anniversary and Win a Philips CD-R/RW Recorder and 40 TDK Recordable CDs!

**HERE'S HOW:** On the official entry form below, list 10 song titles, and their artists, that you consider to be "Ten Of The All Time Best." These songs should be ten of your all time favorites, songs that you would pick to make your very own greatest hits album. The ten songs must be from various artists and can come from a variety of musical categories.

Send this information, along with your name, address, and telephone number to: Stereo Review's "Ten Of The All Time Best" Sweepstakes, 1633 Broadway, 45th Floor, New York, NY 10019.

All entries must be received by April 1, 1998. Only one winner will be chosen.

---

"With typical music recordings, I was never able to hear a difference between a dub made on the CDR870 and the original."

— David Ranada, Stereo Review, January '98

Proprietary MSi recording layer yields more precisely shaped recorded marks, resulting in lower jitter levels and purer sound reproduction

Unique HardHat protective coating gives CD-RXG enhanced resistance to physical damage, even in the toughest portable applications

---

**Official Rules**

No purchase necessary. On an official entry form or a 3" by 5" piece of paper, print your name, address, zip code and daytime telephone number. No mechanical reproduction of official entry form will be accepted. Enter as often as you wish, but mail each entry separately. To enter, mail your entry to: Stereo Review's "Ten Of The All Time Best" Sweepstakes, 1633 Broadway, 45th Floor, New York, NY 10019. Entries must be received by April 1, 1998. All eligible entries become the property of Hachette Filipacchi Magazines, Inc., which reserves the right to reprint the name, address and photo of winner for publicity purposes. The winner will be selected in a random drawing to be held no later than April 17, 1998, from among all eligible entries received and under the supervision of Hachette Filipacchi Magazines, whose decision will be final. The prize is a Philips CDR870 CD recorder and 40 TDK CD-RXG recordable CDs (maximum retail value $1,008.60). The winner will be notified by mail and may be required to sign an affidavit of eligibility and release of liability. If under age 18, a parent or guardian must sign. Failure to return the affidavit within 10 days will result in an alternate winner being selected. Odds of winning will depend on the number of entries received. The prize is not transferable and there is no substitute for the prize. The contest is open to legal residents of the continental United States and Canada, except Quebec. Employees of Hachette Filipacchi Magazines, Philips and TDK, their families, affiliates, or advertising and promotion agencies are not eligible. Void where prohibited or restricted by law. For the winner's name, send a self-addressed stamped envelope to: Stereo Review's "Ten Of The All Time Best" Sweepstakes Winner, Hachette Filipacchi Magazines, Inc., 45th Floor, 1633 Broadway, New York, NY 10019.

---

**Official Entry Form**

Please enter me in the Stereo Review "Ten Of The All Time Best" Sweepstakes!

NAME

ADDRESS

CITY STATE ZIP

DAYTIME PHONE (WITH AREA CODE)

"Ten Of The All Time Best"

(include name of song and artist):

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

All entries must be received by April 1, 1998.
**Technics SA-EX110**

A/V Receiver

- 100 watts per channel
- Digital tuning with AM/FM Logic
- Digital Signal Processing
- 1-button front panel
- 8 -button remote control

**$1499**

(JVC RX318)

**JVC XL3C301**

100 x 1 + 20 watts ch
- 10 watts per channel
- AM/FM, CD player, 2 nay cube speakers

**$1999**

(TEAC AG-360)

**JVC**

**$599**

(TEAC V-377)

**Sony STR-G3**

VisionTouch™ A/V Receiver

- 110 watts x 2
- 100 watts x 3 + 50 w x 4
- Digital Signal Processing

**$1999**

(Sony STR-D610)

**Sony STR-D631**

- 100 watts per channel
- 300W RMS power per channel
- Digital Signal Processing

**$1999**

(CF3 STR-360)

**Harman Kardon AVR20 MKII**

- 50 w x 2 + 20 w x 4
- Low noise

**$999**

(For remote orders only)

**Double Cassette Decks**

**JVC**

**$1499**

(TEAC W-518)

**Panasonic SC-PM15**

**$1999**

(TEAC W-780R)

**Sonic PCM-M2**

MiniDisc / CD / AM Micro Component Stereo System

- 1-touch CD to MP3 duplication
- AM/FM digital tuner

**$1999**

(Sonic PCM-M2)

**Aiwa NSX-A50**

Mini Audio System

- 60 watts/channel
- 3-disc CD changer
- Dual auto-reverse cassette
- Karaoke mix, mixing circuit

**$2599**

(Aiwa NSX-A50)

**Aiwa MX-PLT**

- 100 watts per channel
- AM/FM, CD player, 2 speakers

**$799**

(SONIC PCM-M2)

**Aiwa MX-PLT**

- 100 watts per channel
- AM/FM, CD player, 2 speakers

**$799**

(SONIC PCM-M2)
colonelvideo.com
1-800-277-5632
Factory Authorized for TOP NAME BRANDS in AUDIO & VIDEO

Receivers, Speakers, CD Changers
Audio Accessories, Audio Separates
Subwoofers, Digital Video Disc, Dolby Digital Receivers, Satellite Dish Systems
Home Theater, Projection TV's, Camcorders and Accessories

ALL MAJOR BRANDS LIKE SONY
Kenwood
harman/kardon
PSB
Pioneer

UNBEATABLE
ever 1,500,000 served!
17 Yrs in Houston, TX

audio & video

SONY 0 Infinity
Authorized
Fax (713) 910-5868 e-mail: colonel@phoenix.net

UNBEATABLE Audio Accessories, Audio Separates
Harris County TX is jurisdiction for all transactions

Ffering of "Once He Finds Us." Todd Snider's wide-ranging repertoire sometimes signals a lack of focus, but he's definitely a talent to be reckoned with. A.N.

ROBERT WYATT Shleep
(Thirsty Ear, 52 min; 274 Madison Ave., Suite 804. New York, NY 10016: ThirstyE@aol.com)

Shleep is Robert Wyatt doing what he does best: discoursing in conversation-al meter in his wispy British voice as music swirls around him in strange and wonderful ways. Wyatt herds together modern jazz, difficult art songs, abstract pop confections, and audacious recastings of familiar source material; in the last category, the highlight is his breathless spinoff of Bob Dylan's "Subterranean Homesick Blues" as "Blues in Bob Minor." There is less of the leftist polemics that typified Wyatt's albums in the 1980s and more of the dreamily engaging twists and turns of his earlier work. The gently percolating first track, "Heaps of Sheep," evinces the unmistakable hand of Brian Eno, and "Maryan" drifts along like a particularly intriguing daydream. Then there's "Free Will and Testament," whose philosophical lyrics hark back to the school of "pataphysics"—a kind of playful existentialism without the academic starch—hatched by Wyatt back in his days with the Soft Machine. All in all, Shleep is a return to the quirkiness and charm of Robert Wyatt at his inscrutably accessible best. P.P.

YES Keys to Ascension 2
(Yes/Purple Pyramid, two CDs, 102 min)

Live disc: ★★★
Studio disc: ★★★★★

Open Your Eyes
(Beyond Music/Tommy Boy, 74 min; available in regular or S.A.L. surround edition)

T
he good news is that Yes has made a creative comeback and a commercial one at the same time. The bad news is that it has done them on separate albums.

The classic lineup of Jon Anderson, Steve Howe, Chris Squire, Rick Wakeman, and Alan White shows its mettle on Keys to Ascension 2, which, like the first Keys, combines live tracks from a 1996 reunion gig with new studio material. But this time the studio sessions cover a full CD, and it's the best Yes disc since 1977's Going for the One. At long last, the band throws commerciality to the wind and mines the cosmic epic style it perfected in the Seventies. The 9-minute "Foot Prints" and the 18-minute "Mind Drive" are complex pieces that hold together as songs, alternating Anderson's melodic musings with thrilling guitar/key-board outbursts. The live disc is a nice but unnecessary bonus, since most of the songs have been on concert albums before and these faithful versions offer nothing new.

Recorded not long after, Open Your Eyes marks another personnel change—Wake man is out (again), guitarist/singer/writer Billy Sherwood is in—and another change of course. Sherwood helps steer the band in the same radio-friendly direction Trevor Rabin did. It works fine in the first few tracks: "New State of Mind," the title song, and "Universal Garden" retain the grandiosity of prime Yes, with enough layers of vocals to make up for the lack of keyboards. But then a slick adult-contemporary approach takes over, as Anderson's lyrics descend into the trite feel-goodism of recent years. Pleasant, yes; progressive, no. B.M.

COLLECTIONS

THE BRIDGE SCHOOL CONCERTS, VOL. ONE
(Reprise, 62 min)

★★★★★

The Bridge School Concerts, Vol. One is a model of how to put together a coherent multi-artist collection—no small feat, considering that fifteen performances by as many artists were culled from nine years' worth of benefit shows. Neil and Pegi Young cofounded the Bridge School to offer educational opportunities to children with "severe speech and physical impairments." Because the musical approach of the concerts is unplugged and because all involved keep the charitable beneficiaries of their donated time at the forefront, The Bridge School Concerts comes together in a spirit of intimacy and generosity.

Neil Young opens the disc with "I Am a Child," a Buffalo Springfield-era tune written long before the term "inner child" passed into vogue. The most moving songs here make explicit statements about self-sufficiency: Tracy Chapman's "All That You Have Is Your Soul," the Pretenders' "Sense of Purpose," Patti Smith's "People Have the Power," and David Bowie's "Heroes." Other tracks qualify as curios that no fan or collector will want to be without, including Elvis Costello's "Alison" (with Young) and the improbable matchup of Don Henley and an early Beatles tune, "Yes It Is." The vibes must be good at these affairs: even industrial doom-mongers Ministry make nice with a bubbly true-bluegrass rendition of the Grateful Dead's "Friend of the Devil." P.P.

ONE STEP UP/ TWO STEPS BACK: THE SONGS OF BRUCE SPRINGSTEEN
(The Right Stuff, two CDs, 118 min)

★★★★★

With fourteen new versions and fourteen previously recorded tracks, One Step Up/Two Steps Back is the proverbial case of a double disc that would have made a fine single one highlighting just those artists who bring a measure of personality
Atlantic TECHNOLOGY
System 350 THX

"A THX system that looks good in a living room and sounds great with any program material? Who wouldn't want it?"
—Brent Butterworth
Home Theater Technology

Now on Sale!

1-800-540-0900

FAX: (509) 838-4387

onecall@iea.com

www.onecall.com

7 Days a Week 7am to 6:30pm PST
418 W. Riverside Spokane, WA 99201
**QUICK FIXES**

**BETH NIELSEN CHAPMAN**  
*Sand and Water*  
*Reprise, 44 min*  
★ ★ ★

The title song is Chapman's ballad about being reunited with a loved one "through the doors beyond the grave." The album, written and performed in a style reminiscent of late-1960s Judy Collins, is clearly a companion for those still stunned by sorrow but fighting to find their way back into the world.  

**DURAN DURAN**  
*Medazzaland*  
*(Capitol, 49 min)*  
★ ★ ★

A handful of tracks on *Medazzaland* attempt to recapture the sound and feel of old, but at its best the record plays like a decent Duran Duran tribute album. The real tribute album has a bunch of ska versions, a bit of hardcore, and some thrash metal, and it abounds with clumsy arrangements and snotty vocals. The only track that works is from a joke band, Björn Again, which transforms "Girls on Film" into an ABBA epic.  

**DIZZY GILLESPIE**  
*Bird Songs: The Final Recordings*  
*(Telarc Jazz, 63 min)*  
★ ★ ★

Taped live in January 1992, *Bird Songs* features appearances by Benny Golson, Jackie McLean, Clifford Jordan, David Sanchez, Paquito D'Rivera, and Antonio Hart—a fine lineup, but one that underlines how Gillespie had become just an echo of his former self. In "Con Alma" his eloquence is unimpaired, but I miss the authority of old.  

**GRAND FUNK RAILROAD**  
*Bosnia*  
*(EMI/Capitol Entertainment Properties, two CDs, 101 min)*  
★ ★ ★

Performing together for the first time in more than twenty years, Grand Funk replicates its old live set. The sound is a lot cleaner now, and time has been relatively kind to the material.  

**PATTY LARKIN**  
*Perishable Fruit*  
*(High Street, 50 min)*  
★ ★ ★

In her first producing role, Larkin excluded drums and challenged her players and herself to create music "plucked, thumped, and sampled on stringed instruments." The result is graceful folk-pop that alternately recalls the dreaminess of k.d. lang, the detached coolness of Sheryl Crow, and the self-conscious hipness of Rickie Lee Jones.  

**THE Verve**  
*Urban Hymns*  
*(Hat/ Virgin, 76 min)*  
★ ★ ★ ★

The Verve has mutated into something rather out of step with the rest of its Brit contemporaries: a traditional-sounding five-piece rock band that happens to be really good. *Urban Hymns* is the right kind of Sixties revivalism, faithful to the spirit, rather than the letter, of that era's best music.  

**MIKE WATT**  
*Contemplating the Engine Room*  
*(Columbia, 54 min)*  
★ ★ ★ ★

Watt's mesmerizing rock opera (as unlikely as that sounds) metaphorically reCounts a day in the life of the Minute-Men, the punk-rock trio for which he played bass. It also evokes the seafaring life of his late Navyman dad (who's pictured on the cover). Watts, guitarist Nels Cline, and drummer Stephen Hodges interact like a jazz group with punk instincts and avant-garde leanings, setting sail for territories previously claimed only by the likes of Captain Beefheart and the Hampton Grease Band.  

**BEBE WINANS**  
*Almo Sounds, 34 min*  
★ ★ ★ ★

Winans is a passionate singer, but he is also a gifted songwriter, arranger, and producer, as his fine solo record attests. The music owes far more to R&B than to gospel, and the lyrics seem to address earthly love. Yet the album closes with a rousing rendition of the Edwin Hawkins classic "Oh Happy Day."  

**BILLY YATES**  
*Almo Sounds, 34 min*  
★ ★ ★ ★

Fans of stone-cold country will likely send up a flare after one spin through Yates's debut. He knows how to get to the heart and head at precisely the same time and how to find the universal in the personal, whether facing life-altering "Choices" or addressing the departed loved one of "Flowers." Country does mau滇 like no other music, but the bottom line is this: if that last song doesn't get you, you just ain't breathin."  

**TIBETAN FREEDOM CONCERT**  
*(Grand Royal/Capitol, three CDs, 168 min: enhanced CD)*  
★★★★

All-star charity events usually don't translate into good albums, but this three-disc set from the Tibetan benefit concerts organized over the past two summers by Beatrice Boy Adam Yauch is a rare exception. Yauch put together a fine cross section of popular alternative and hip-hop acts, mixed with folk and Eastern roots music. *Tibetan Freedom Concert* wisely puts everyone on equal footing, with one track each by everybody who played, and it's good to hear Taj Mahal, Jamaican dub-master Lee Perry, and Japanese pop artist Yungchen Lhamo alongside the Foo Fighters, U2, and members of R.E.M.  

Despite jivey moments from the Jon Spencer Blues Explosion and the severely overrated Beck, the music generally sounds urgent enough to suit the occasion, even if there are few explicitly topical songs. The best political number, a searing satirical poem by Public Enemy leader Chuck D., appears only in the multimedia section, but hip-hop gets a strong showing via a fiery performance by KRS-1, a warm and funky one by De La Soul, and a goofy one by Biz Markie. For rockier tastes, Patti Smith's "About a Boy" (far stronger than the *Gone Again* version), Sonic Youth's "Wildflower" (an inventive, 10-minute instrumental), and Oasis member Noel Gallagher's "Cast No Shadow" are worth the proverbial price of admission.  

The multimedia portion doesn't provide much extra live footage, just some song excerpts (most under a minute), backstage sound bites, and interviewer Sean Lennon identifying himself six times. But there's a wealth of documentary material, including...
speeches from the Dalai Lama, to put the music into perspective.

**JAZZ**

**BILL COSBY**

Hello, Friend: To Ennis with Love  
(Verte, 48 min)

Hello, Friend is a misleading release: it bears Bill Cosby's name and likeness on the cover, but it's not a Cosby album, except for the fact that he coproduced it. Actually, this is a good jazz session featuring Lester Bowie and Philip Harper on trumpet, Bobby Watson on alto saxophone, Craig Handy on tenor sax, and a rhythm section of pianist Cedar Walton, bassist Peter Washington, drummer Billy Higgins, and percussionist Steve Kroon — certainly a group that deserves proper credit. Recorded in 1993, the album was put aside until Cosby asked Verve to issue it as a tribute to the memory of his son, Ennis.

Cosby apparently picked the tunes — a good mix of standards and soul-jazz hits from the late Fifties and early Sixties — and he leads them off with his own piece "Wide Open," itself very much in the soul-type head-arrangement mold of the Sixties. There is nothing wrong with having a retro repertoire, but, given who was on hand, this could have been a far more venturesome and meaningful set. The ensembles are clean, the solos are often brisk and imaginative, and everybody plays very well indeed, but these are men who can, and often do, go well beyond very well.

**PAQUITO D'RIVERA & THE UNITED NATION ORCHESTRA**

Live at MCG  
(Jazz MCG/Blue Jackel, 69 min)

It sounds ever so official, but the United Nation Orchestra has no connection with the United Nations. Dizzy Gillespie originated the name to illustrate music's role as an international language. Now saxophonist Paquito D'Rivera, who shared the orchestra's musical direction with Gillespie, continues spreading the pleasant amalgam of jazz, Afro-Caribbean, and Latin music.

Live at MCG, recorded last year at Pittsburgh’s Manchesteer Craftsmen’s Guild, is a richly textured multimood romp. Trumpeter Mike Ponella was inspired by a Neville Brothers performance to write the brassy, "St. Louis Blues"—like "King of Cancun." "Groove for Diz" also exemplifies the orchestra’s excitement, as well as its diversity; written by trombonist William Cepeda and arranged with (a decided bow to Stan Kenton) by Luis Romero, it’s based on the 12/8 Puerto Rican bomba yuba rhythm. And D’Rivera and Oscar Stagnaro duet on clarinet and bass, respectively, in "Andalu-

---

**SOUND & CINEMA**

Ushering in Tomorrow’s Technology Today!

At Sound & Cinema we're proud to be the Technical Leader in Design and Custom Installation of Superior Quality Audio, Video and Digital Theater Components.

Going beyond competent performance, our systems bring Hollywood, with all its amazing realism, right into your living room!

We have 4 finely appointed, state-of-the-art Audio/Video Rooms and when you consider that we offer practically every major brand at greatly reduced pricing, why call anywhere else?

FREE DELIVERY  FREE BÁSIC SETUP ON HOME THEATER SYSTEMS  FREE 33 DAY MONEY BACK ON THEATER SYSTEMS

Everything Electronic
FREE CATALOG

Audio  Video  Home Theater  TVs  Projection TVs  Laser Disc  DVD  VCRs  Multimedia  Subwoofers  Speakers  CD Players/Changer  Signal Processors
You Always Do Better at Sound & Cinema

FREE CALL! 1-888-862-8600

Huntersdon Shopping Center Route 202/31 South Flemington, NJ 08822

---

**CALL US LAST**

WE WILL BEAT ANY PRICE

**HOME ELECTRONICS & CAR AUDIO**

Factory Authorized Dealers Since 1979

Home Products

BEST PRICE  BEST SERVICE

THE SOUND APPROACH

6067 JERICHO TPKE., COMMACK, NY 11725
ON LONG ISLAND CALL (516) 499-7680

800-368-2344

All items are factory sealed and carry full manufacturers warranty.
popular music

"Cia Medley," paying tribute to Cuban composer Ernesto Lecuona. I am particularly pleased to be able to recommend this CD because proceeds from its sale support the MCG's Jazz Education Program — we need more of those. If D'Rivera ever presents the United Nation Orchestra in your vicinity, make every effort to experience it.

PAT METHENY GROUP Imaginary Day
(Warner Bros., 65 min)

MARC JOHNSON
The Sound of Summer Running
(Verve, 53 min)

Imaginary Day is one of those hour-long sighs that have won guitarist Pat Metheny a loyal following among advocates of fusion, New Age, and smooth jazz. Dominated as much by Lyle Mays's keyboards and Mark Ledford and David Blamires's la-la's as by Metheny's acoustic, electric, and synth guitars, this is the sort of pleasant background music that, if listened to more closely ... fades even further into the background. But I wouldn't mind hearing the beguiling "The Roots of Coincidence" on the radio every so often.

Bassist Marc Johnson's The Sound of Summer Running is notable for bringing Metheny together with guitarist Bill Frisell for the first time. These two are a good match, lyrical eccentrics with a feel for contemporary Americana. Whatever Metheny's shortcomings as an improviser, he's a team player with an ear for texture. He mostly lets Frisell set the pace, and with Johnson and drummer Joey Baron providing a supple beat the result is an album of jazz that might best be described as bristlingly cerebral. And the absence of an actual Hammond B-3 doesn't stop these guys from turning in a killer organ groove in the irresistible "Union Pacific."

MARK MURPHY Song for the Geese
(RCA Victor, 64 min)

The Best of Mark Murphy:
The Capitol Years
(Capitol, 49 min)

Stolen ... and Other Moments
(32 Jazz, two CDs, 149 min)

Mark Murphy not only sings jazz but teaches it around the globe, and his most important lesson is his own life: pay your dues and stay true to your artistic conscience and eventually the world will catch up with you, although it may take forty years. Alongside Betty Carter, Murphy all but invented the concept of swinging eclecticism, an accomplishment "officially" recognized at long last by his winning the Down Beat poll for the past two years. All of his records constitute veritable catalogues of techniques, including scat, the blues, Latin rhythms, vocalese, and even poetry recitation. Murphy's newest set, Song for the Geese, adds more via a three-voice choir (in the title track) and an acid-jazz background given to several cuts, including a rendition of the Steely Dan hit "Do It Again." But it's the swinging numbers ("You Go to My Head") and the ballads (his scathing soliloquy in Stephen Sondheim's "I Remember") that will most please lovers of classic jazz singing.

Two retrospectives complete the picture of Murphy's evolution. The Capitol Years offers a well-selected sampling of his three albums and assorted singles for that label. This is a younger, more conservative Murphy, one whom some listeners may even prefer. Stolen ... and Other Moments summarizes the nineteen albums and twenty-two years Murphy spent with Muse Records: it's a gloriously varied program with sources of inspiration ranging from Antonio Carlos Jobim to Nat King Cole to Jack Kerouac. As colleague Sheila Jordan observes in the liner notes, "What's not to like? What singers do what Mark Murphy does?" W.F.

---

Before you buy any DJ, PA, LIGHTING, or RECORDING gear get this FREE catalog

Looking for the latest in PA, LIGHTING, or RECORDING Gear?
The Pro Sound & Stage Lighting catalog brings you all the hottest gear and makes it easy to compare the equipment feature for feature. You'll find what you're looking for at the guaranteed lowest price. Even better, you can call our friendly pro staff 7 days a week with any of your questions. Plus, you'll usually get your order shipped within 24 hours. So what are you waiting for? Call now to get your free copy on its way today.

1-800-672-4268
Outside the U.S.A., 1-714-891-5914
Fax Toll Free 1-888-PSSL-FAX (777-5329)
11711 Monarch St., Garden Grove, CA 92841

PRO SOUND & STAGE LIGHTING

---
Sound City is one of the country’s leading full-service dealers of high performance Audio/Video and Custom Home Theater products. From an entry level set-up to an audiophile-grade stereo system, all the way up to a full blown state-of-the-art Home Theater, Sound City has unmatched selection, service and expertise. In addition, our huge buying power allows us to offer excellent savings on select manufacturer closeouts on first-quality audio, video and car stereo products.

WAREHOUSE CLEARANCE

THOUSANDS OF ITEMS ON SALE!

JBL L5 Tower Speaker
- 4-Way speaker system
- 350 Watt power handling
- 6" Low frequency driver
- 3-1/2" Midbass driver
- 1" Pure titanium high frequency driver
- 90dB Sensitivity
- FR: 35Hz-27kHz
- Black ash wood finish

Limited Supply! $599pr

Brand Name DVD Player
- DVD player
- Video output
- Distortion free special effects
- Parental rating control
- Infrared remote
- Headphone jack with volume control

Brand Name Digital Surround Processor
- Decodes Dolby Digital (AC-3) input from satellite video source for producing 5.1 analog signals sent to 6-channel discrete inputs of a receiver
- Cinema re-equalizer circuit
- Dynamic range compression ON/OFF switch
- Center/Rear channel delay time control
- Wireless remote control

With Any Purchase Of $100 or More! *Must add $11.95 for shipping and handling anywhere in the US

Soundstream SA244 4/3/2 Ch. Amplifier
- 40W x 4 @ 8 Ohm, 30W x 2 @ 4 Ohm
- Bass EO (45Hz)
- Selectable 12dB Octave crossovers built-in
- Discrete Darlington transistors
- 2 Ohm rated and mixed mono capable
- Dual Class A discrete drive stages
- 4-Way protection without current limiting
- Drive delay muting

Full Line Of Sony Camcorders Available

Chase Technologies HTS-1 5 Channel Home Theater Decoder
- 5.1 analog inputs
- 5.1 analog main channel
- 5.1 analog subwoofer channel
- Decodes all matrix encoded surround sound movies and TV programs, including Dolby Surround, UltraSurround, and SensSurround
- Passive design needs no additional amps
- Line level outputs for rear and center channels
- No noise or distortion

CALL TOLL FREE: 1-800-542-7283

FOR INFORMATION & CUSTOMER SERVICE 973-263-6060

For complete details on products, accessories, and special offers, see pages 8-11.

Shop for the best names in audio, video, car stereo and home theater on the web! Pages and pages of information and hundreds of products to order directly online. It's safe and easy from your home or office 24 hours a day, 7 days a week!
NEW RECORDINGS REVIEWED BY RICHARD FREED, DAVID HALL, JAMIE JAMES, GEORGE JELLINEK, AND ERIC SALZMAN

J. S. BACH Brandenburg Concertos
Il Giardino Armonico (Teldec 98442, two CDs, 93 min)

We think trends move quickly in these days of high-speed communications, but new musical fashions traveled across Europe at amazing speed in the seventeenth and eighteenth centuries. The Baroque concerto was invented in Italy at the beginning of the eighteenth century and crossed the Alps only a few years later. Although Bach never left Germany and worked only occasionally with Italian musicians, he was well acquainted with the Italian style, which was probably the single greatest influence on him. And he would, I am sure, have enjoyed this Italian performance — light (even spare), fast, stylish, rhythmic — of his six Brandenburg Concertos, which are only too commonly regarded from a Germanic point of view.

Il Giardino Armonico is a Milan-based period-instrument group directed by the flutist and conductor Giovanni Antonini. These musicians lean into the musical grooves in an almost contemporary choreographic manner, giving us a jazzy, dancing Bach under sunny southern skies.

BEETHOVEN Piano Concertos Nos. 1-5; Piano Sonata No. 23 ("Appassionata")
Andras Schiff, piano; Dresden State Orchestra, Bernard Haitink cond. (Teldec 13159, three CDs, 203 min)

If you listen first to the last of the three discs in this set, the one containing the Fifth Concerto (the "Emperor") and the "Appassionata" Sonata, you will find it irresistible. Andras Schiff, the Dresden State Orchestra, and Bernard Haitink perform like preordained partners in the concerto. Eschewing anything that might smack of mere rhetoric or self-conscious reverence, they allow themselves — and us, as listeners — to revel in the vigor of Beethoven’s imaginativeness and the inexhaustibility of music that even now, perhaps, has yet to reveal all of its wonders. One very small but very telling example occurs about 4 minutes into the final movement, in a transition passage for the piano that suddenly blossoms into the most fetching little dance when Schiff very clearly yet subtly brings forward the ingratiating accompaniment figure, which tends to go unnoticed. A similar sense of enthusiastic rediscovery illuminates his unreservedly dramatic yet unwaveringly elegant re-examination of the familiar "Appassionata" Sonata, and the recorded sound is virtually ideal in both works.

The four earlier concertos seem to have been recorded by a different pianist — one whose approach might be described as contemplative, or ruminative, or profoundly respectful, but certainly not as enthusiastic or particularly vigorous. And his collaborators in these performances seem entirely in accord with that approach. The results cannot be written off as pedestrian or disengaged, but they do not meet the expectations raised except, curiously, in the slow movements, which are brought off with splendid conviction and communicative power. The outer ones, for the most part, suggest little more than thoughtful attention to detail, an elegant level of articulation, and a fastidious balancing of the solo and orchestral elements — which merely provide the framework for the music's real substance.

BERNSTEIN Candide, Overture; West Side Story, Symphonic Dances; Facsimile; Fancy Free
Baltimore Symphony, David Zinman cond. (London 452 916, 73 min)

It is ironic (but perhaps not surprising) that Bernstein's "serious" symphonic music has had a slow go but his show and dance music is solidly entrenched in the modern orchestral repertory. The overture to Candide and the Symphonic Dances from West Side Story are long-time favorites, and Fancy Free, a wonderful score written for a ballet by Jerome Robbins, is now often heard as well. In this collection, only Facsimile, a rather abstract, Stravinskian work written in 1946 for another Robbins Broadway ballet, is relatively unknown, and it deserves to be better known. The performances by David Zinman and his Baltimore Symphony are expert.

BRAHMS Viola Sonatas Nos. 1 and 2
Kim Kashkashian, viola; Robert Levin, piano (ECM 1630, 44 min)

Like the great B Minor Quintet and A Minor Trio, these sonatas, Brahms's Op. 120, were composed for the clarinet, but Brahms also prepared the versions for viola, which were quickly seized upon by performers on that instrument. Late Brahms at his mellow best, these two masterpieces have an autumnal hue that some listeners feel is more aptly conveyed by the dusky sound of the viola than by the clarinet's more pellucid tone. As in all of the Brahms duo sonatas, the keyboard instrument is an
equal partner, and nothing but the best will do.

Violist Kim Kashkashian and pianist Robert Levin are tops in their league, and they need give no ground to the stiff competition in these works interpretively. Because the violin's dynamic range is wider than the clarinet's, the piano sound here may seem a bit aggressive to listeners used to the versions with clarinet. It took a while for me to get accustomed to it, but once I did I found these readings right on target, even the extreme dynamics in the opening movement of the Sonata No. 1. The sound overall is first-rate — full bodied and amply present. I do wish, however, that we had been given more than a mere 44 minutes of playing time.

**CANTELLOUBE Songs of the Auvergne**
**EMMANUEL Burgundian Songs**
Dawn Upshaw, soprano; Lyons Opera Orchestra, Kent Nagano cond.
(Erato 17577. 59 min)

Many topflight sopranos have embraced Joseph Camelloube's *Chants d'Auvergne* since Madeleine Grey's pioneering version in the 1930s. There are eighteen Auvergne songs here; a previous Erato disc by Dawn Upshaw and Kent Nagano offers others from the same collection. The *Chansons Bourguignonnes* of Maurice Emmanuel (1862-1938) were new to me, but they are ideal discmates for the Canteloube.

Both Emmanuel and the younger Canteloube (1870-1957) were enthusiastic folklorists who found in the songs of these respective regions a welcome link to French music's Renaissance and Baroque past, as well as a free departure from the various turn-of-century "schools." Emmanuel's harmonizations are more subdued — two of his songs, "Noel" and "Complaine de Notre Dame," are touchingly devotional — and they lack the pungency and the imaginative orchestrations of Canteloube's settings, but they are delightful nonetheless.

Songs like these challenge the interpreter to be simple and artful at the same time. Upshaw's wonderful sense of vocal color enables her to capture the lyricism without excessive sentiment, to reveal the subtle humor and flirtatious teasing in the texts, and to render the music with the appropriate rustic charm. The deftly played orchestral backgrounds are beautifully recorded.

**ELGAR Violin Sonata in E Minor**
Midori, violin; Robert McDonald, piano
(Sony 63331. 55 min)

Midori, now in her mid-20s, has taken a new tack — away from showpiece concertos and encore pieces and into substantial sonata repertoire — and on this CD she emerges as a cultivated and mature musician. Her choice of the Elgar E Minor Sonata, a late, nostalgic work composed in the closing months of World War I, is particularly notable. The music opens abruptly with a fiercely Brahmsian statement complete with tritonal elements, but this gives way to a wistfully lyrical expression. There follows an elusive, almost spooky "Romance" that Elgar's wife said suggested the dead trees at twilight next to the composer's country retreat. The final movement harks back to the richly conciliatory vein found in the last pages of the Second Symphony. Midori and her very capable partner, the pianist Robert McDonald, do very well indeed by the work.

Unlike the Elgar, the Franck A Major Sonata has been recorded many times, and not just for violin. Midori's performance is on the restrained side — not a bad approach to a work that can be given a decidedly overheated rendition. It contains some of Franck's finest late music, free of bombast.

---

**Something Old, Something New**

There will be conservatives who will delight in the Kronos Quartet's *Early Music (Lachrymae Antiquae)* because of its title, and progressives who will be distressed for the same reason. Is the Kronos forsaking its lifelong mission to champion the new and comb the globe for the unusual? Not at all. You see, this is early music, but it is also new music and world music. The early music dates back to the chant of the ninth-century Byzantine abbess Kassia and the twelfth-century abbess Hildegard of Bingen. The new music reaches up to John Cage and Alfred Schnittke. The world music ranges from the folk singing of Tuva to the folk fiddling of Sweden.

What's remarkable is that the early music sounds new, and the new and world music sounds early. *Early Music* is the Kronos's most superb concept album, designed to be a 69-minute artwork unto itself, oblivious to time and place. It will please neither musicologists who demand historical authenticity nor ethnologists who demand cultural context. (Most of the selections are arrangements of pieces not intended for string quartet.) But it will entrance those open-minded enough to embrace it as an unbroken entity.

Of the twenty-one brief numbers, eleven are by medieval, Renaissance, and early Baroque composers such as Kassia, Hildegard, Petrén, Guillaume de Machaut, John Dowland, Christopher Tye, and Henry Purcell. Eight numbers would count as new music, yet in each case they seem old. Arvo Pärt's *Psalm* is frankly neo-medieval; Harry Partch's *Two Studies* are based on ancient Greek scales. Cage's youthful pieces *Totem Ancestor* and *Quodlibet* sound non-Western in their hypnotic drones and rhythmic ostinatos. Schnittke's *Collected Songs Where Every Verse Is Filled with Grief* (1985) stands apart from time, its anguished reminiscent of Shostakovich, its half-hearted resolution as poignant as Russian folk song. And the world music sounds as modern as Cage, resting upon relentless drones and ostinatos.

*Early Music* is performed almost entirely without vibrato, yet this approach is flexible enough to be piercing, austere, even raucous, as in Machaut's *Kyrie II*, or silken, hushed, and translucent, as in the Purcell Fantasia No. 2 and Tye's "Rachell's Weeping" and "Farewell My Goode," where the quartet sounds like a consort of viols. The Kronos members have learned an entirely new approach to their instruments and to quarter style, and first violinist David Harrington, whose playing can be needlessly strident, has benefited the most. Whatever the Kronos records in the future, *Early Music* has opened the door to an unsuspected new world of colors and styles.

— K. Robert Schwarz

**KRONOS QUARTET**

*Early Music (Lachrymae Antiquae)*
Kronos Quartet; other musicians
(Nonesuch 79457. 69 min)

**KRONOS QUARTET**

*Early Music (Lachrymae Antiquae)*
Kronos Quartet; other musicians
(Nonesuch 79457. 69 min)

---

MARCH 1998 STEREO REVIEW 101
MCM Electronics

The Custom Home Audio Accessory Source

Monoblock Tube Amplifier Pair

Look to MCM Electronics for all of your custom audio needs. Speakers, cable, connectors, specialized tools and thousands of consumer electronics repair components are available at your fingertips.

Stereo Review

MOVING? Please give us 8 weeks advance notice. Attach label with your old address, and write in new address below.

RENEWING? Check box below and attach label with corrections marked, if any.

SUBSCRIBING? Check box and fill in coupon. For gift subscriptions attach a separate sheet.

Send STEREO REVIEW for 1 year at $17.94

☐ New Subscription ☐ Renewal
☐ Payment enclosed ☐ Bill me

Canadian and foreign orders add $8 per year.

NAME
ADDRESS
CITY
STATE
ZIP

1(303)604-1464
FAX 1(303)604-7455
STEREO REVIEW
P.O. Box 55627, Boulder CO 80322

classical music

and formal overextension; the cyclic elements are handled in a subtle rather than obvious manner, and the chromatic aspect of the composer's idiom is less obtrusive than usual. Recorded sound and balance leave nothing to be desired.

D.H.

HAYDN Symphonies No. 103 ("Drum Roll") and No. 104 ("London")

La Petite Bande, Sigiswald Kuijken cond. (Deutsche Harmonia Mundi/BMG 77362, 58 min)

* * * *

Sigiswald Kuijken and La Petite Bande's recordings of Haydn's twelve "London" Symphonies, which got off to a splendid start with a surpassingly persuasive CD of Nos. 93, 94, and 95 a few years ago, has been less consistently appealing in its subsequent installments, but the present disc, which concludes the series, is surely another winner.

Kuijken takes Haydn's slow movements rather more expansively than his period-instrument colleagues in Britain, who tend to take them very briskly indeed. He is still successful, however, in realizing the spirit of a Haydn andante or allegretto with a robustness that enlivens at any speed. At just a shade under 11 minutes, the slow movement of No. 103 is certainly not rushed, but it strides along at a purposeful pace, absolutely undulled by gratuitous solemnizing — and yet suggesting that anything the tiniest bit faster would sound breathless.

In contrast to that andante, the slow movement of No. 104 proceeds at a somewhat more measured pace, building effectively toward the eruptive middle section, which comes off to powerful effect while avoiding any impression of being "staged." The minuets of both works are uncommonly fleet, and the outer movements, despite some less than ideal wind balances, successfully realize Haydn's familiar blend of movement and substance, warmth and wit on the highest level. The recording itself, while not quite demonstration class, is agreeably full-bodied and well defined. R.F.

MENDELSSOHN Elijah

Bryn Terfel (Elijah), Renée Fleming (the Widow), Patricia Bardon (an Angel), John Mark Ainsley (Obadiah), others; Edinburgh Festival Chorus; Orchestra of the Age of Enlightenment, Paul Daniel cond. (London 455 688, 131 min)

* * * *

Mendelssohn's Elijah, first performed in 1846, was his last major work. Though his basic text was in German, he saw to it that the English version was musically compatible, for the work had been commissioned by Britain's Birmingham Festival. For nearly a hundred years thereafter, the British considered it the greatest post-Handelian oratorio. For today's audiences, even in Britain, it takes a superlative
performance with first-rank soloists, chorus, and orchestra to put the work across. And for my money, this new recording does just that, in spades.

Conductor Paul Daniel, best known for his work in contemporary music, turns out to have just the right touch to bring out both the dramatic tension and the lyricism of the Elijah story. He has a splendid chorus, a period-instrument orchestra, and a superb array of soloists headed by the Welsh bass-baritone, Bryn Terfel. From the opening proclamation, "As the Lord God of Israel liveth," which precedes the overture, there is no doubt that we are in for a memorable listening experience. While it is Terfel's heroic portrayal of Elijah that makes the deepest impression, tenor John Mark Ainsley is a pleasure to the ear in "If with all your hearts...", and soprano Renée Fleming's voice and delivery in the Widow's dialogue and duet with Elijah are right on target, if a bit cool for my taste. But for me the best of the women soloists is Patricia Barber, who communicates a real sense of warmth and assurance in "Oh rest in the Lord."

Of course, Terfel and the Edinburgh Festival Chorus make a splendid show out of the contest between the Israelites and the priests of Baal, whose subsequent damnation is genuinely chilling. Terfel does equally well with the more thoughtful and somber aspects of the Biblical hero. The taking up of Elijah into heaven on the chariot of fire is another great moment for the chorus, which packs plenty of punch even if it does not enunciate quite as distinctly as Robert Shaw's on his Telarc recording. I have no complaint with the excellent solo and ensemble work for the Angels; there is both elegance where needed and ample feeling, with no lapse into sentimentality. The recorded sound is excellent, with ideal balances between soloists, chorus, and orchestra. A first-choice Elijah. D.H.

ROUSE Symphony No. 2; Flute Concerto; Phaethon
Carol Wincenc, flute; Houston Symphony, Christoph Eschenbach cond. (Telarc 80452, 65 min)

Christopher Rouse is a fascinating figure, one of the first composers to bring the rock idiom into the symphony concert hall. His recent works, in a sophisticated atonal style, have taken on a dark, even angry tone. The heart of his Symphony No. 2 is a bravura, 13-minute-long adagio, which is dedicated to the memory of the composer Stephen Albert, a friend of Rouse's who had recently died in a car accident. It swings in mood between an anguished string tremolo and acrid, staccato protests by brass and percussion. The movement is bracketed by two allegros, which contain much the same musical material. The first allegro is "refracted through the prism of the second movement," in the composer's words, and transformed into a tempestuous finale dominated by high brass and winds and awash with pounding timpani and cymbals.

The Flute Concerto, a much more subdued affair, is infused with a nostalgic, folkish mood reflecting the composer's Celtic ancestry. The piece alternates between airs for the flute, either unaccompanied or very sparingly orchestrated, and lingering marches. The disc concludes with Phaethon, a dynamic, exciting tone poem based on the myth of the son of the Greek sun god Helios, who takes the old man's chariot out for a spin, loses control, and crashes to earth. The composer says he had reached the exact point in the score where Zeus hurled a thunderbolt at Phaethon, to put an end to his disastrous joyride, on the day the space shuttle Challenger exploded. It is a
of his eminent predecessors to matching the formidable standard Fritz Reiner set in his Chicago Symphony recording of the concerto, and the Divertimento for Strings flows a bit more ingratiatingly in several other recordings.

**BERLIOZ**

Les Nuits d'Été; Arias
Susan Graham, soprano; Royal Opera House Orchestra, John Nelson cond. (Sony 62730, 61 min) ★★★

Although Susan Graham hail's from the American Southwest, you'd swear she was French, so idiomatic and instinctive is her feel for this repertoire. Berlioz's song cycle Les Nuits d'Été is a work of shifting moods and colors, and she captures them with incandescent beauty. The Royal Opera House Orchestra, however, conducted by John Nelson, sounds rather colorless. The disc is filled up with a clutch of arias from Berlioz's operas and from the dramatic symphony The Damnation of Faust.

**ORFF**

Carmina Burana
Beverly Hoch, soprano. Stanford Olsen, tenor, Mark Oswald, baritone. F.A.C.E. Treble Choir; Montreal Symphony Chorus and Orchestra, Charles Dutoit cond. (London 455 290, 59 min) ★★★

Orff's Carmina Burana is probably the most popular choral/symphonic work in the twentieth-century repertoire. Its German publisher once told me that the royalties from it alone virtually kept his publishing operation in the black! Charles Dutoit's reading isn't very sexy but rather a solid, typical, big, and fat version accompanied by good soloists and excellent choral work. Recommended but with only modified rapture.

**RACHMANINOFF**

Suites Nos. 1 and 2 for Two Pianos; Six Duets; Prelude in C-sharp Minor
Cynthia Raim and David Allen Wehr. pianos (Connoisseur Society 4214, 79 min)

Seasoned and sensitive pianists Cynthia Raim and David Allen Wehr give us a fine sampling of the youthful Rachmaninoff's writing for two pianos and for piano duet. The Six Duets and the First Suite are the more picturesque, while the Second Suite is decidedly the more polished. The famous C-sharp Minor Prelude is done here in the composer's own 1938 piano version, which sounds bigger but not necessarily better than the solo original. The sonics are A-1.

**SCHUBERT**

Lieder
Mathias Goerne, baritone; Andreas Haefliger, piano (London 452 917, 72 min)

Schubert's lieder on poems of Goethe include some of his best-loved songs, from the hair-raising ghost story "Erlkönig" to "An den Mond," a dreamy, heartbroken song to the moon. Matthias Goerne, a talented young German baritone, communicates the many subtle moods of these songs with disarming directness and admirable voice control, and he's ably accompanied by the pianist Andreas Haefliger.

**WAGNER**

Orchestral Music
MET Orchestra, James Levine cond. (Deutsche Grammophon 447 764, 72 min) ★★★★★

James Levine and his superb orchestra give exceptional accounts of music from Lohengrin (Prelude to Act I), Die Walküre ("Ride of the Valkyries"), Siegfried ("Forest Murmurs"), Götterdämmerung, Tristan und Isolde (Prelude and Liebeslied), Meistersinger (Prelude to Act III), and Parsifal ("Good Friday Spell"). Wagner's concert editions of the respective pieces are used, and the sonic focus has been adjusted accordingly.

**COLLECTION**

**CECILIA BARTOLI**

An Italian Songbook
Cecilia Bartoli, mezzo-soprano; James Levine, piano (London 455 513, 67 min)

Cecilia Bartoli's art is exceptional, but her recordings do tend to expose us to a somewhat limited landscape. What she offers us in her latest recital CD, An Italian Songbook, is, as always, exemplary technical assurance, clarity, tonal variety, dazzling passagework, and, above all, the impression of an enduring personality. Her expressive phrasing and telling inflections enrich Bellini's now elegiac, now passionate miniatures, Donizetti's ebullient "Neapolitan Songs" and elegant romances, and a variety of Rossini songs that include two lively variations, "Bolero" and "Aragonese," on the Metastasio lyric "Mi lagnero tacendo" as well as the familiar "La Donna." Taken in small doses, the program is delightful. Philip Gossett's annotations are informative, and James Levine must have found the piano accompaniments a pleasant break from the complex operatic scores he usually deals with.

COPYRIGHT © 1998 BY HACHETTE FILIPACCHI MEDIA, INC. All rights reserved. Stereo Review, March 1998, Volume 63, Number 3. Stereo Review (ISSN 0039-1220) is published monthly by Hachette Filipacchi Media, Inc. at 1633 Broadway, New York, NY 10019; telephone (212) 767-6000. One-year subscription rate for the United States and its possessions, $19.94; Canada, $29.34 (Canadian Business Number 126018209RGT IPN Sales Agreement Number 99236); all other countries, $27.94; cash orders only, payable in U.S. currency. Periodical postage paid at New York, NY 10001, and at additional mailing offices. Authorized as periodical mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. POSTMASTER/SUBSCRIPTION SERVICE: Please send change-of-address forms and all subscription correspondence to Stereo Review, P.O. Box 55627, Boulder, CO 80322-5627. Please allow at least eight weeks for the change of address to become effective. Include both your old and your new address, enclosing, if possible, an address label from a recent issue. If you have a subscription problem, write to the above address or call (303) 604-1464; fax (303) 604-7455. PERMISSIONS: Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to The Editor, Stereo Review, 1633 Broadway, New York, NY 10019. BACK ISSUES are available. Write to ISI/Stereo Review, 30 Montgomery Street, Jersey City, NJ 07302. For each copy ordered, enclose a check or money order for $5.95 in U.S. funds ($7.25 for orders sent to Canada, $12.95 for all other foreign locations); add $2 to those prices for each copy of the 1998 Stereo Buyer's Guide annual. For telephone credit-card orders, call (201) 451-9420. EDITORIAL CONTRIBUTIONS must be accompanied by return postage and will be handled with reasonable care, but the publisher assumes no responsibility for the return or safety of unsolicited manuscripts, art, or photographs.
One Call

GETS IT ALL!
PRICE * DELIVERY * SERVICE

AUDIO
AC-3 AV Receivers
Separates
Speakers
CDs
Book Shelf
Car
Portable
AC3-THX Processors
Interconnects
Phones

VIDEO
DVD
DSS
Camcorders
Digital VCRs
VCRs
TVs
Home Theater
Projection
Lasers
Videonics

1-800-540-0900

FAX: (509) 838-4387
onecall@iea.com
www.onecall.com

7 Days a Week 6:30am to 7pm PST
418 W. Riverside  Spokane, WA  99201

Visit our Mega-Site!
www.onecall.com

Developed together with
Microsoft
& the VERIO Group

P.O.'s ACCEPTED
Kurt Masur

SINCE HE TOOK OVER the New York Philharmonic seven years ago, Kurt Masur, the genial, bearded bear from Leipzig, has become widely known as the man who imposed discipline on this famously fractious orchestra and inspired musical performances at the highest artistic levels since the legendary Leonard Bernstein era (1958-1969). Yet perhaps the best thing he did for the orchestra was to land it an exclusive, thirty-two-CD contract with Teldec at a time when recording companies were beginning to shy away from such iron-clad, big-money deals. Interviewed at his office in Lincoln Center last September, he said that Teldec "had a wonderful, basic idea — to follow the New York Philharmonic and Masur from the beginning, from the opening concert until now."

With Teldec's enthusiastic support, Teldec decided to do all the recordings live during performances at Avery Fisher Hall, the orchestra's home in Lincoln Center. "It gives an entirely different feeling to the recordings," Masur said, "because they take place in front of an audience. That's absolutely clear, especially in the case of the New York Philharmonic, because they're not afraid to play in front of a microphone. What we have achieved together is much more honest than studio recordings. Teldec was brave to do it that way, because there was a risk. No one knew how it would work."

He has developed a close working relationship with his producer, Martin Fouqué. "Martin has an understanding of music and musical style, and a knowledge of conducting, which is important." If the conductor and the producer aren't on the same wavelength, Masur said, "then suddenly you may feel, for example, that the tempo doesn't fit, or the sound doesn't fit the tempo, and you don't feel the spirit of the performance." Masur and Fouqué's most recent collaboration was not for Teldec but for Deutsche Grammophon: a recording of the Brahms Violin Concerto and Schumann's Fantasy for Violin and Orchestra with Anne-Sophie Mutter, who is an exclusive DG artist. Masur called it one of the best recordings he has done with the Philharmonic.

Then he paused dramatically, and said that while he has been quite satisfied with the artistic fruits of the relationship with Teldec, there have also been problems, which he tactfully expressed in a double negative: "The nonartistic side was never without problems. There is no doubt, we wanted to do more." He threw up his big hands. "Artists want to do more. We did the

It's a mistake to think that the audience only wants to hear Beethoven."

BRITTEN WAR REQUIEM, but there are more contemporary pieces we wanted to do."

It's all more than a bit ironic: from the beginning of Masur's directorship, even as critics and audiences raved about his sparkling Mendelssohn, his majestic Dvorák, his profound Beethoven, there was also some grumbling that the repertory was becoming too staid, too German. Yet even when he programs contemporary music, he gets knocked. Last summer, in the Lincoln Center Festival, he conducted a rare performance of Hans Werner Henze's Tristan, one of the neglected masterpieces of contemporary German music. "People complained that I'm only interested in composers who are connected with the past," he said in exasperation. "Well, Beethoven was connected with the past."

Pressed to name some of the recording projects he had pushed for that Teldec rejected, he shrugged and said, with a sardonic chuckle, "We gave up from the beginning." The difficulties arose, he explained, because the orchestra was under exclusive contract with Teldec, and the label wanted them to record "the basic repertory of a symphony orchestra — which is fine." Another shrug. "But the orchestra has had several important first performances. We had Schnittke's Seventh Symphony; we had Mi- noru Miki's Symphony for Two Worlds; there was a new piece by Bright Sheng."

Masur said that he asked Teldec if the orchestra could record such contemporary repertory with one of the smaller American labels instead. "But it wasn't allowed. They said, 'Exclusive is exclusive.' It's a pity. It limited the mirror, I would call it, of what we have done over the past seven years. It makes me a little bit sad." Masur believes that the record labels and artists' managers "make the mistake of thinking that the audience only wants to hear Beethoven. That isn't true. Of course it's important to improve, to create performances of Beethoven that make people sit up and be excited. But perhaps on the first half of the program, it might be interesting to hear something new."

The main question now, he said, is the future. "We at the Philharmonic are trying to find some way of making two or three recordings a year by young composers." Lowering his voice to a dramatic mezzo voce, "Someone must care about them," he said. "Otherwise, how will they live? A young composer can only earn money by doing movie music. You can learn a lot from that — for a while. But ultimately it flattens a composer's musical expression."

Less than a year remains in the Philharmonic's contract with Teldec. And after that? "I don't know how it will continue," Masur said. "None of us knows." The ongoing slump in classical-music sales is at the heart of the problem, but Masur maintains a positive attitude: "At the moment our world is a little bit shaky. We have to find some way of becoming healthy again. 'Healthy' means that young composers have a chance, and that we are able to give the audience an orientation about what's going on in the musical world."
The Shelving Shaped By Your Needs.

Archetype System® features modular elements that you combine and, as needs change, reconfigure. Shelves are rigid, neoprene isolators damp vibration, and solid steel threaded support posts provide infinite vertical adjustability. Options include acoustic mounting spikes, large-capacity drawer, bookends and section-bridging shelves. In solid hardwood or fiberboard. Call or fax for our free color brochure.

Salamander Designs Ltd.
800.201.6533 Fax: 860.313.0526
Visit our web site: www.mander.com

CD/VHS CASE

Holds 500 CD's

$159.95
$119.95

POST HOLIDAY SALE

- Furniture Quality Oak Construction
- Fully Adjustable Shelves
- Hand Rubbed Danish Oil Finish
- Immediate Delivery
- In Oak or Black
- Free Color Photos

111
Card Interposes
111
111
111
111
111

CD STORAGE CONNECTION

Imagine 270 CDs in one drawer.
Then, imagine modular media cabinetry.
Now, let your imagination run wild...

Please call to receive a catalog on storage cabinets you can't outgrow.
800-387-9790
Fax: 905-475-1154 www.can-am.ca

SALAMANDER
800.201.6533 Fax: 860.313.0526
Visit our web site: www.mander.com
OUR 22ND YEAR! CALL 1(800) 826-0520. ★
NAD ★ SONY ES ★ ONKYO ★ CARVER ★ KEF ★
HARMAN KARDON ★ LEXICON ★ ADCOM ★ NA-
KAMICHI ★ AMC ★ POLK AUDIO ★ SUNFIRE ★
ATLANTIC TECHNOLOGY ★ PROAC ★ TARGET ★
VELOCODYNE ★ PSB ★ PANAMAX ★ MONSTER ★
CABLE ★ JAMO ★ GRADO ★ AUDIOCONTROL ★
a/d/s ★ THORENS ★ SANUS SYSTEMS ★ NILES ★
AUDIO ★ OMNI-MOUNT ★ SOUNDSTREAM ★
ROCKFORD FOSGATE ★ SOUND SELLER, BOX 224,
2808 Cahiil, MARINETTE, WI 54143-0224.
SAVE 40% ON HIGH-END home speakers, subwoofers, amplifiers. FREE CATALOG! RTRD,
3023 E. Sangamon Ave., Springfield, IL 62702.
1-800-283-4644.

Audio Review
For Advertising Information Call 1-800-445-6066, 9am-5pm EST

PLEASE NOTE: It is impossible for us to verify all
the claims of advertisers, including product availability and exis-
tence of warranties. To confirm that an
advertiser is authorized to sell a product,
we suggest you contact the manufacturer
directly. Please review our Tips for Mail
Order Purchasers in this section.

For Sale

Audio
Receivers
CD Players
Mini Discs
Tape Decks
Dat Recorders
Car Stereos
Mini Systems
Radar Detectors
Laser Discs

Home Speakers
Subwoofers
Center Channels
Camcorders
TVs

Video
DVD
DSS
VCR

Classified Advertiser is authorized to sell a product,
TIPS FOR MAIL ORDER PURCHASERS

It is impossible for us to verify all of the claims of advertisers, including product availability and existence of warranties. Therefore, the following information is provided for your protection.

1. Confirm price and merchandise information with the seller, including brand, model, color or finish, accessories and rebates included in the price.

2. Understand the seller's return and refund policy, including the allowable return period, who pays the postage for returned merchandise, and whether there is any restocking charge.

3. Understand the product's warranty. Is there a manufacturer's warranty, and if so, is it from a U.S. or foreign manufacturer? Note that many manufacturers assert that, even if the product comes with a U.S. manufacturer's warranty card, if you purchase from an unauthorized dealer, you are not covered by the manufacturer's warranty. If in doubt, contact the manufacturer directly. In addition to, or instead of, the manufacturer's warranty, the seller may offer its own warranty. In either case, what is covered by a warranty, how long is the warranty period, and what does the product include service, replacement, and repair? Ask for a copy of the warranty.

4. Keep a copy of all transactions, including cancelled checks, receipts and correspondence. If you pay by credit card, you may have a greater recourse in the event the advertiser does not perform. Check the complaint procedures of your credit card companies. For phone orders, make a note of the order including merchandise ordered, price, order date, expected delivery date and salesperson's name.

5. If the merchandise is not shipped within the promised time or if no time was promised, 30 days of receipt of the order, you generally have the right to cancel the order and get a refund.

6. Merchandise substitution without your express prior consent is not allowed.

7. If you have a problem with your order or the merchandise, write a letter to the seller with all the pertinent information and keep copies of all correspondence. If, after following the below guidelines, you experience a problem with a mail order advertiser that you are unable to resolve, please let us know. WRITE to Susan Ross, Special Marketing, 45th floor, Hachette Filipacchi Magazines, 1633 Broadway, NY, NY 10019. Be sure to include copies of all correspondence.
Format-of-the-Month Club

THE MOST COMMON complaint that I hear these days from consumers, dealers, and manufacturers is that high-end audio is shooting itself in the foot with its latest trend: the Format-of-the-Month Club. Somehow, somewhere, someone told the high end that it should stop waiting for the giants like Sony, Philips, Toshiba, and Dolby to develop new worldwide format standards and start creating new and proprietary formats on its own. The result has been an alphabet soup of ill-conceived formats that offer no real benefit to the consumer over the accepted industry standards like CD and Dolby Digital. For example, there’s HDCD, which offers “penalized compatibility” (the undecoded discs can be played on conventional CD players but with degraded performance), and DTS-encoded CDs and the soon-to-be-released DTS DVDs, which aren’t compatible at all without an expensive hardware upgrade.

Now you can add another three-letter niche format to the mix. DAD. The L.A.-based audiophile LP-reissue label Classic Records held a press conference at this winter’s Consumer Electronics Show to announce a new format it calls “24/96 Digital Audio Disc,” a high-quality, audio-only version of DVD (but not the DVD-Audio format, which is still being hatched out by the official standards group). Promoted by a small group of high-end hardware manufacturers, most notably Muse Electronics, this new format will be used to rerelease the past and present catalogs of Classic Records, Chesky, and other audiophile labels in 24-bit, 96-kHz-sampled two-channel stereo.

Just when we’re finally on the verge of a new and improved worldwide digital audio format in the form of DVD-Audio, a group of high-end manufacturers has announced that, rather than wait for the official DVD-Audio format standard, they’re coming out with their own separate format. And while the rest of the world is evolving from stereo to multichannel surround sound, the high end decides to stick to stereo! I can’t help but scratch my head in that same worn spot I always scratch when the high end thinks small and then wonders why its ranks are dwindling.

I was told that DAD’s two-channel specification isn’t a limiting factor because it’s going to be used to rerelease the existing archive of stereo recordings. But DVD-Audio can and will be used for the same purpose, with the same uncompressed, high-bandwidth sound quality as DAD. Just because DVD-Audio will likely be a 5.1-channel format doesn’t mean it can’t be used as a transparent delivery medium for stereo or even mono archival recordings, much as DVD-Video’s 5.1-channel Dolby Digital soundtrack expertly delivers the mono sound of such classic films as Dr. Strangelove. You don’t have to use all 5.1 channels all of the time if the original recording doesn’t need them.

For sixteen years I’ve been hearing the high end carp about the sound of CDs (and joining in myself). Yet, despite all the complaints, high-end manufacturers did the right thing by accepting the CD as the new worldwide standard and working to refine its sound with upgraded circuitry in the players, separate high-end digital-to-analog (D/A) processors, and better digital mastering on the recording side from such audiophile labels as Chesky, Mobile Fidelity, and DCC. So why are they now coming out with a new format, just as the world is about to welcome DVD-Audio as CD’s official successor?

Some see DAD as a tourmiquet to stop the bleeding away of the market for separate two-channel D/A processors, whose sales and popularity with audiophiles have plummeted in the past two years because of the success of Dolby Digital. While the smarter D/A-processor manufacturers, like Theta, Krell, and Meridian, have moved on to building multichannel processors that can handle everything from two-channel PCM audio from CDs to 5.1-channel Dolby Digital, there are clearly many other manufacturers in the high end who either lack the skill to design a proper surround preamp or simply wish to stay the two-channel course.

The first DAD-ready DVD players from Muse and Conrad-Johnson may have already hit the market as this issue goes to press. Now, I really like the guys at Muse and Conrad-Johnson—I’ve given rave reviews to their products, and I consider theirs to be two of the most reliably solid high-end product lines in the industry. But as much as I respect their design and engineering talent, they’ve got no business creating new proprietary formats. No matter how good DAD sounds, it’s still going to be a niche format like HDCD and DTS-encoded CDs and laserdiscs. Will DAD join the format separate from the 5.1-channel DVD-Audio the rest of us will be enjoying, I guess it’s entitled to. But I have to wonder whether this is really a benefit to the audiophile, or just another Format of the Month.

The road to audio perfection is littered with the sun-bleached bones of such niche “super-formats” as the dbx-encoded LP, and the vultures are already starting to circle around HDCD and DTS-encoded CDs and laserdiscs. Will DAD join them? If the worldwide DVD-Audio standard offers the same uncompressed, high-resolution sound in a 5.1-channel format, the answer will be yes.

It’s not the job of the high end to go off and create multiple niche formats, especially at the rapid clip we’re seeing.

As I see it, the high end’s duty is to present its case for improved technical performance, wait for the giants to thrash it all out, and then build the best-sounding playback hardware for the new standard. It’s not its job to go off and create multiple niche formats, especially at the rapid clip we’re seeing. If the high end wants to create its own two-channel DVD-based format separate from the 5.1-channel DVD-Audio the rest of us will be enjoying, I guess it’s entitled to. But I have to wonder whether this is really a benefit to the audiophile, or just another Format of the Month.
World's Best Subwoofer Technology...

Patented True Accelerometer-Based High Gain Servo Control
- Low distortion, clean, accurate sound that Velodyne is famous for.
- Smoothest frequency response of any subwoofer.

Revolutionary New Energy Recovery Switching Amplifier Design
- Transformerless direct-line power switching creates the most powerful amplifier in any subwoofer (1000 watts RMS; 3000 peak).
- Patent pending design eliminates shoot-thru current for the highest amplifier efficiency ever achieved.

Tandem Voice Coil in Push-Pull Motor Structure
- High linear excursion capability 1½" peak to peak, 2" max.
- Four times the heat dissipation for high power handling and long life.
- Less than 1/2 the distortion of conventional motor designs.

Velodyne's performance here was breathtaking. In fact, it may very well have threatened the room's structural integrity had we not backed off the volume a bit...

Al Griffin, Home Theater, December '96

“This is bass that doesn't end, in frequency or in level! It is bass that is literally felt as much as heard—on occasion, more felt than heard.”

Edward J. Foster, Audio, March '97

“Bring on the challengers. They won't have an easy job...the Velodyne F-1800R II is the best subwoofer I have yet had in my home theater.”

Thomas J. Norton, Stereophile Guide to Home Theater, Fall '97

New! ...ULTRA SMALL PACKAGE

All of the best features of the world famous F-1800R II have been put into a smaller cabinet. Response down to 20 Hz for audiophiles with output levels to satisfy all home theater systems. Now you don't have to sacrifice sound quality for a compact, easy to place subwoofer.

Velodyne Acoustics, Inc., 1070 Commercial Street, Suite 101, San Jose, CA 95112
Phone: 408-436-7270 • Fax: 408-436-7276 • Web Site: www.velodyne.com • E-mail: velodyne@earthlink.net • Literature Requests: 1-800-VELODYNE
Read the fine print.

In the tobacco blend.

16 mg. "tar", 1.1 mg. nicotine av. per cigarette by FTC method.

SURGEON GENERAL’S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.

100% tobacco. No additives.